Information Content of Dividends: Evidence from Istanbul Stock Exchange

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Abstract

This study investigates the market reaction to dividend change announcements at the Istanbul Stock Exchange. A sample of 184 announcements made by 46 companies during the period 2005 to 2008 is analyzed by using the event study methodology. The results suggest that the market reacts positively to dividend increases, negatively to dividend decreases and does not react when dividends are not changed, consistent with the signaling hypothesis. Also, the results show pre-event information leakage for the decreasing dividends sample.

Keywords: Dividends, Information Content, Signaling Hypothesis, Event Study, Istanbul Stock Exchange

1. Introduction

A great deal of work has been done in the areas of market reaction to dividend announcements and "the information content of dividends hypothesis", which states that dividends convey to the market participants information about future cash flows of a company. However, previous empirical studies of dividend signaling and information contents of dividends produced mixed results. Hence, a greater understanding of the issue is warranted.

This study contributes to the existing literature by testing the information content of dividends hypothesis for an emerging market, namely the Istanbul Stock Exchange (ISE). ISE has been founded in 1986 and played an important role in the financial development in Turkey. This study covers the period 2005 to 2008, and investigates 184 dividend announcements made by 46 selected companies. Specifically, the impact of positive, negative or constant dividend announcements on stock prices is investigated.

The remainder of the article is organized as follows. Section 2 presents the review of literature. The data and research methodology are described in section 3. Section 4 discusses the empirical results. Finally, section 5 summarizes the main findings of the study and concludes.

2. Literature Review

In a world where relevant information about the firm's future prospects is rare and costly, dividends are considered an important source of information for investors. The information content of dividends theory indicates that managers use dividend announcements to signal their beliefs about the prospects of the firm. Since managers spend most of their time analyzing the firm's operations, strategies and investment opportunities, they have better and timelier information about the firm's performance. Therefore, an announcement of an increase in the dividend rate reflects the management's view that the firm's future earnings and cash flows are expected to rise. An increase in dividends conveys good information about a firm because it proves that a firm is able to generate cash. Similarly if a company announces a decrease in dividend, the investors would perceive it as a negative signal regarding the current and future performance. The information content of dividends is also called signaling effect of dividends.

Lintner was the first researcher to employ the term "information content of dividends". In his study in 1956, he suggested that the managers only increase dividends when they believe that earnings of the firm have permanently increased.

Later in 1961, Miller and Modigliani also discussed the information content of dividends. According to their discussion of dividend policy under uncertainty, in the real world, a dividend rate change is often followed by a

change in the stock price change. But they argue that such a phenomenon would not be incompatible with their irrelevance proposition to the extent that it was merely a reflection of what might be called the "informational content" of dividends. They explained the information content of dividends as follows. If a firm has a generally appreciated "target payout ratio" and a stable dividend policy, investors are likely to interpret a change in the dividend rate as a change in management's beliefs of future profit prospects for the firm.

One of the first empirical studies about the signaling effect of dividends was published in 1969 by Fama, Fisher, Jensen and Roll. In their paper, they examined whether and how common stock prices adjust to the information involved in a stock split. They hypothesized that stock splits might be interpreted as a message about dividend increases. The fact that the cumulative average residuals for both dividend classes (increasing and decreasing) rise sharply in the few months before the split, is consistent with the hypothesis that the market recognizes that splits are usually associated with higher dividend payments. Their result also supports that the stock market is "efficient" in the sense that stock prices adjust very rapidly to new information.

In another paper, Pettit (1972) attempted to offer further evidence about the validity of the efficient market hypothesis by estimating the speed and accuracy with which market prices react to announcements of changes in dividends. His results support the argument that market participants make considerable use of the information implicit in announcements of changes in dividend payments. He indicated that the market reacts very quickly to the announcements when dividends are reduced or increased substantially but the effect of a moderate increase or decrease is relatively less. He also mentioned that with few exceptions, largest single effect occurs in the announcement month and the market is reasonably efficient on both a monthly and daily basis. He concluded that the announcement of dividend changes convey significant information.

Number of empirical studies followed the work of Pettit (1972). In one of them, Watts (1973) examined the hypothesis that dividends contain information about the future earnings of the company and that knowledge of past and current dividends enables a good prediction about future earnings. He concluded that the potential information in dividends is very small. He concluded that the information in dividends could only be trivial.

In another study, Charest (1978) aimed to assess market efficiency with respect to dividend information and to document risk and return behavior of stocks around dividend changes by using monthly price data and quarterly dividend information. He found significant abnormal returns in months following the announcements of dividend changes. His investigations with daily data also supported his monthly results. But he concluded that daily evidence does not necessarily reveal the presence of information in dividend announcements since he made no effort to remove the effect of contemporaneous earning announcements.

Bhattarcharya (1979) assumed that outside investors have imperfect information about a firm's profitability and that cash dividends are taxed at a higher rate than capital gains. His findings showed that despite the tax disadvantage of paying dividends, firms might pay dividends because dividends function as a signal of expected cash flows.

Aharony and Swary (1980) aimed to verify whether quarterly dividend changes convey information beyond that already provided by the earnings number. Their findings indicated that stockholders of firms which did not change their dividends earned normal returns during the event period. The abnormal returns were not significantly different from zero. In the case of dividend increases, stockholders earned positive abnormal returns, and most of the statistically significant abnormal returns occurred during days –1 and 0. In case of dividend decreases, stockholders had negative abnormal returns during the twenty days surrounding announcement dates, and similar to the case of dividend increases, most of the significant abnormal returns occurred during days –1 and 0. They concluded that changes in quarterly cash dividends do provide information about changes in management's assessment of firm's future performance, so they supported the information content of dividend hypothesis.

In another study, Asquith and Mullins (1983) investigated the impact of dividends on stockholders' wealth by analyzing 168 firms that paid no dividends either during their corporate histories or for at least the last ten years. They used daily data, and estimated abnormal returns for each firm around the announcement dates. Then they calculated the average excess returns and average cumulative excess returns. They also calculated the 2-day average excess return for each dividend announcement they examined, so as to capture the entire impact of a dividend announcement. Their results for the two-day announcement period indicated significant and large positive excess returns. Their results are several times larger than Charest's (1978) and Aharony and Swary's (1980) results.

In another empirical research, Kalay and Loewenstein (1985) had the purpose to demonstrate that traditionally measured excess returns over an event period, could reflect the higher compensation that risk averse investors

require to hold the asset over a riskier period. They chose dividend announcements as the event and tested the hypothesis that the mean returns on days in the event period are not significantly different from the means on any other random day. They constructed a sample of 302 dividend announcements and tested their hypothesis by using both the market model and mean adjusted returns model to estimate the abnormal returns. Their results showed that the mean excess returns over the event period were significantly higher than those on a random day. Their suggested explanation for these higher returns was higher risk per unit of time in the event period.

Michaely, Thaler, and Womack (1995) investigated the immediate and long-term market reactions to initiations and omissions of cash dividend payments. Their sample contained 561 cash dividend initiations and 887 cash dividend omissions between 1964 and 1988. By using buy and hold method they calculated the excess returns of the securities for a three-day event period, and for monthly periods before or after the event respectively. They found that immediate impact of dividend omissions is negative and immediate impact of dividend initiations is positive. Their findings stated that the stock prices continued to rise even after the initiation announcement. For the omissions, there is a drift in the negative direction. They also noted that the long-term results of the omission sample are more robust than those of the initiation sample.

In 1997, Benartzi, Michaely, and Thaler examined whether dividend changes give information about future earning changes. They argued that although there is much evidence about the market's response to dividend changes as newsworthy, there is less knowledge about the actual realization of future earnings. By taking 1025 firms and 7186 dividend announcements between years 1979-1991 as a sample, they tried to determine whether changes in dividends have information content about future earnings. Their empirical results were consistent with Watt's findings in 1973. They could not find much evidence of a positive relationship between dividend changes and future earnings changes. They also investigated Lintner's (1956) argument that dividend increases are a signal about a permanent shift in earnings rather than a signal about future earnings growth, and they found a strong past and concurrent link between earnings and dividend changes.   They concluded that changes in dividends mostly tell something about what has happened and that Lintner's model of dividends remains the best description of the dividend setting process available.

Dyl and Weigand (1998) investigated the changes in firm risk following the initiation of cash dividends. They introduced the risk-information hypothesis that dividend initiation conveys information to the market about the firm's lower risk. They proposed that management's decision to initiate dividend payments per se provides the market with new information regarding the risk of the firm, and firm risk will be lower following dividend initiation. They tested their hypothesis and investigated whether the announcement of dividend payments is accompanied by a change in systematic risk by comparing firms' pre and post announcement betas by using the Fowler-Rorke methodology. Their findings indicated that both the total risk and the systematic risk of a sample firms that initiated dividends are significantly lower in the year following the dividend announcement.

Garrett and Priestly (2000) analyzed the dividend behavior of the aggregate stock market. They proposed a model that assumes managers minimize the costs of adjustment associated with being away from their target dividend payout and they found significant evidence of dividends conveying information regarding unexpected positive changes in current permanent earnings.

In 2001, Fama and French presented the phenomenon of the "disappearing dividend". They found that given their characteristics, firms become less likely to pay dividends. They used logit regressions and a portfolio approach to document that characteristics and propensity to pay make large separate contributions to the decline in the percent of payers.

Gunasekarage and Power (2002) reexamined the dividend-signaling hypothesis by examining the post-announcement performance of UK companies that disclose dividend and earnings news to the market on the same day. Their sample consisted of 1787 earnings and dividends changes announcements made on the same day between the years 1989-1993. They tested the hypothesis that dividend-increasing companies do not outperform their dividend decreasing counterparts during the post announcement years with respect to financial performance. By using the buy and hold method they calculated the abnormal returns for the year before the announcement, for the quarter before the announcement and for over the announcement period.   Their findings did not provide a support for the signaling hypothesis.

In one a more recent paper, Grullon et al. (2005), contrary to the dividend signaling hypothesis, showed that dividend changes are uncorrelated with future earnings changes when controlling for the well-known nonlinearities in the earnings process.

Amihud and Li (2006) proposed an explanation for the "disappearing dividend" phenomenon which was presented by Fama and French in 2001. They found that a reason for a decline in the information content of

dividends is the rise in holdings by institutional investors that are more sophisticated and informed. They found a decline in abnormal returns around dividend change announcements since the mid-1970s. Across firms, abnormal returns are a decreasing function of institutional holdings. They argued that institutional investors exploit their superior information and buy before dividend increases and that dividends are less likely to rise in firms with high institutional holdings.

Recently, Yılmaz and Gunay (2006) examined the effects of cash dividend payments on stock returns and trading volumes in the Istanbul Stock Exchange from 1995 to 2003.   They found that prices start to rise a few sessions before cash dividend payments, and fall less than dividend payments on the ex-dividend day, finally decreasing in the sessions following the payment. The results of trading volume analysis showed a considerable upward shift before the payment date and that the volume became stable after the ex-dividend date. The findings supported price-volume reaction discussions on the dividend payment date and the significant effect of cash dividends on the stock market.

As it becomes clear from the preceding discussion, previous empirical studies of dividend signaling and information contents of dividends produced mixed results.

3. Data and Methodology

The objective of this study is to investigate whether dividends have informational content. To accomplish this objective, an event study is conducted to measure whether any abnormal returns are earned by security holders around dividend announcements. The core assumption of the event study methodology is that if information communicated to the market contains any useful and surprising content, an abnormal return will occur. At the time of the event, the magnitude of the abnormal performance indicates the impact of that particular event on shareholders' wealth.

Following MacKinlay (1997), the first step of the analysis was to determine the sample of firms to be included in the analysis. For the purposes of this study, ISE-listed companies that regularly distributed cash dividends for the period 2005 to 2008 were selected. In order to mitigate the effect of other contemporaneous events on stock prices, any company with an announcement related to earnings, stock splits or merger and acquisitions around the dividend announcement were excluded from the analysis. Financial sector firms were also excluded as they are subject to different regulations, resulting in a final sample of 46 firms and 184 dividend announcements. The dividend announcement dates and amounts of dividends paid by these companies were collected from the daily bulletins of ISE. The dividend announcement date (day 0) was taken as the day on which dividend amount of a firm is announced to the public in the daily bulletin. Neither the ex-dividend day nor the day the dividend is paid was considered to be the announcement day.

As the second step of the event study, a three-day symmetric event window was chosen (1 day prior to the event day and 1 day after the event day). This window length is appropriate to capture any news that might have leaked shortly before the official announcement was made and also considers any short-term stock price reactions linked to the event after the announcement (Kothari and Warner, 2004). In addition, several other window lengths are analyzed to check the results.

The third step was the prediction of a "normal" return during the event window in the absence of the event. To estimate "normal" returns, this study uses 355 daily returns as the estimation period, from the day T=-360 to the day T=-6.The model used in this study to estimate the expected returns is the market model. It is a linear time-series model where dependent variable, security returns, is regressed against percentage changes in a market index. The market model used in this study for security i for the year j during period t can be expressed by the following linear time-series model.

$$R_{i,j,t} = \alpha_{i,j} + \beta_{i,j}, R_{m,j,t} + e_{i,j,t}$$

where;

$R_{i,j,t}$ =   daily return on the security i for year j during time t

$\alpha_{i,j}$, $\beta_{i,j}$ = market model parameters for security i for year j, security-specific intercept and slope coefficients

$R_{m,j,t}$ = return of the market (ISE-100 index) for year j during time t

$e_{i,j,t}$ = error term for security i for year j at period t. It is assumed that $e_{i,j,t}$ fulfills the assumptions of the linear regression model. Namely $e_{i,j,t}$ has the mean of zero over the regression period, and has a variance independent over time.

The fourth step was the calculation of the abnormal return within the event window, where the abnormal return is defined as the difference between the actual and predicted returns. Abnormal returns, $e_{i,j,t}$,   for firm i, for year

j, on day t are estimated as the difference between the actual return on day t and the return expected from the market model. It thus represents the impact of firm specific event (dividend announcements in this study) on shareholder wealth, net of market effects. The abnormal returns are calculated as follows.

$$e_{i,j,t} = R_{i,j,t} - \alpha_{i,j} - \beta_{i,j} R_{m,j,t}$$

By using the preceding equation, daily abnormal returns for each firm for each of the years 2005, 2006, 2007, and 2008 were computed over several event windows. Then, for any day t within the event period the mean abnormal return (MAR) across sample members was calculated as follows.

$$MAR_t = \sum_{i=1}^{N_t} \frac{e_{i,j,t}}{N}$$

where;

$e_{i,j,t}$ = abnormal return of security i for year j on day t

N = number of securities

Finally, cumulative abnormal returns over several holding periods from day t1 to day t2 were calculated according to the following formula.

$$CAR_{t1,t2} = \sum_{t=t1}^{t2} MAR_t$$

Under the null hypothesis that dividend announcements have no impact on corresponding stock prices, cumulative abnormal returns have an expected value of zero. To test the hypothesis, parametric t-tests are used.

4. Empirical Results

As our aim was to investigate the market reaction to the change in dividends, the 184 announcements by 46 companies were divided into three groups by comparing the dividend per share (DPS) for each observation at time t to the previous dividend per share at time t-1. The groups were formed as follows.

If $DPS_t > DPS_{t-1}$, the observation is classified in the increasing dividends group

If $DPS_t < DPS_{t-1}$, the observation is classified in the decreasing dividends group

If $DPS_t = DPS_{t-1}$, the observation is classified in the constant dividends group

As a result, 88 announcements were classified as increasing dividends, 73 as decreasing dividends and 23 as constant dividends.

The result of t-test analysis on CAR values for these groups is presented on Table 1. As can be seen, for the three day event window surrounding the dividend announcement, CAR(-1,1) value is positive and statistically significant for the increasing dividends group, and negative and statistically significant for the decreasing dividends group. For the constant dividends group, the CAR value is not significantly different from zero. Therefore, the null hypothesis that dividends have no impact on stock prices can be rejected and our evidence is consistent with the signaling hypothesis. However, such a result was not obtained for longer event windows, which resulted in statistically insignificant CAR values for all three subsample of firms.

Moreover, the pre-event period (-5,-1) shows significantly negative CAR values. This means that the fact that an important announcement will take place is released to the public by the insiders before the actual announcement date. However, this only holds for decreasing dividends sample, suggesting that bad news generate more reaction among insiders, inciting them to disclose their knowledge earlier.

5. Conclusion

This study tested whether dividend announcements have an informational content for the Istanbul Stock Exchange. By applying the event study methodology on a sample of 184 dividend announcements made by 46 companies during the period 2005 to 2008, the average abnormal returns and cumulative abnormal returns were calculated. These calculations were done for three subsamples of securities, namely those with increasing dividends, those with decreasing dividends and those with constant dividends.

When a three-day (1 day prior to the event day and 1 day after the event day) event window was used, the results showed that the market reacted positively to dividend increases, negatively to dividend decreases and did not react when dividends were not changed. Therefore, the results were consistent with the signaling hypothesis.

However, cumulative abnormal returns were insignificant when longer event windows were used. Also, the results showed pre-event information leakage for the decreasing dividends sample.

Besides providing additional evidence consistent with the information content hypothesis, these results have important implications for companies. Specifically, firms should be careful when announcing changes in their dividend policies since such announcements have an impact on stock prices.

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Table 1. CAR Values for selected event windows

	Dividend no change (N=23)		Dividend increase (N=88)		Dividend decrease (N=73)	
	CAR (%)	t-stat	CAR (%)	t-stat	CAR (%)	t-stat
CAR(-5,5)	-0.30	-0.26	0.08	0.10	-0.13	-0.37
CAR(-3,3)	-1.23	-0.81	-0.87	-0.95	-0.32	-0.48
CAR(-2,2)	-1.14	-0.97	-0.58	-0.56	-0.27	-0.44
CAR(-1,1)	**0.16**	**0.35**	**0.54**	**1.43***	**-1.05**	**-1.62***
CAR(-5,-1)	0.25	0.36	-0.20	-0.41	-1.01	**-2.90***
CAR(-3,-1)	-0.31	-0.39	-0.39	-0.71	-0.34	-0.94
CAR(-2,-1)	-0.32	-0.39	-0.21	-0.33	-0.22	-0.73
CAR(1,2)	0.27	0.39	-0.43	-1.14	-0.19	-0.54
CAR(1,3)	0.16	0.35	0.23	1.02	-0.13	-0.37
CAR(1,5)	0.54	0.80	0.22	0.53	-0.18	-0.44

*,**, and *** denote significance at 10%, 5%, and 1% respectively.