On the Differential Market Reaction to Dividend Announcement: Evidence from Emerging Equity Market

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Abstract

In corporate finance literature for market reaction to dividend announcements reports mixed result, some of studies support the positive response of market as result of dividend announcement where as some report negative. This study is an attempt to investigate the heterogeneous market reaction dividend announcement for 73 firms listed in KSE. We investigated this phenomenon with novel methodology using both the event study and multivariate regression for the possible effects of firm specific factor associated with the dividend announcements. We report that the market reaction is one sided as majority of companies of the sample for given period are with positive CAR. We can't ignore the importance of firms specific factor that has effect on the dividends but we conclude that majority of companies of the sample period are portraying positive CAR and market reaction is positive.

Key Words: Dividend Announcement, Cumulative Abnormal Returns, Firms Specific Factors, Market Reaction.

Introduction

Investors are always interested in optimizing their earnings and in continuous search of optimal investments on the basis of technical and signalled information. Healthy dividends depict the profitability of the company and good investments made by the management. The relationship of dividend and stock prices have been the debate of most researchers. Dividend announcement convey the information about the future earnings of the company i.e. it conveys a signal to the investors that how the firm will perform in the future. One of the common assumptions, that market is not efficient, where dividend information content portrays signal to investors. The finance literature has supported that the stock prices of the company changes after the announcement of dividends (Bhattacharya,1979,1980; Jhon & William,1985; Miller & Rock, 1985).

The managers intentionally or unintentionally portray the message to external investor about the pattern of firm's future earnings and value by announcement of cash dividends (Miller & Modigliani, 1961). Most of the researchers have focused on the influence of earning information on stock dividends by applying event study to capture the possible effect. Jin, (2000) suggested that there may be other firm specific factors effecting the stock prices other than dividend announcements.

The concept which explains the relationship of stock price and information content of dividend is given by the dividend signalling theory proposed by Miller and Rock , (1985) free cash flow theory given(Bhattacharya,1979,1980; John & William,1985; Miller & Rock, 1985),free cash flow hypothesis given by Jensen (1986) and Agency Cost theory forwarded by Easterbrook (1984) the discussion in these theories over all state that the changes in firms dividend policy significantly affect the share prices of the respective firm. The dividend announcement which might be a result from any of the three theories, conveys signals to the investors what would happen in earnings of the firm in future. The higher dividends figures represent the strength of the company in the context of producing higher earnings in future and vice versa. Indirectly when a firm announces higher dividends the stock prices of the company will also increase mixed empirical results have been found in literature of (Jin, 2000; Mitra & owers, 1995; Healy & Palepu, 1988) . The dividend announcement plays a role as signal to investor, when dividend increase it portrays a positive signal that future earrings will increase, while decreasing signal portrays negative signals to investor that future earnings will deteriorate. Basically it is the way of communication or a channel via which the firm communicates with the investors this was first identified by cooper et al., (2001) who explained various ways in which firms communicate with investors some of which are earning announcements and dividend announcements.

This paper is an attempt to investigate empirically whether the stock prices change after the announcement of dividends? Does the information content hypothesis given by (Miller & Modigliani, 1961) holds for the Pakistani firms. Furthermore the main objective will be to check the relationship of firm specific factors whether the dividend announcement is influenced by these factors.

This study has significance for both the corporate manager as well as for investor. The managerial importance of this study lies in the relationship of positive dividend announcement and firm value. As we have stated that management can portray positive signal to investors by announcing high dividends. The higher dividends are taken as best managerial application of skills and investing in optimal investment projects leading to higher yields which creates a healthy perception in the mind of investor that the firm is moving towards shareholder wealth maximization.

We are contributing in two halves. We are applying different methodology in terms of event study by incorporating firm specific factors which enhance the robustness of the empirical results of event study. If only the event study methodology is applied then results will be spurious due to association of other factors which might distort the actual findings. Secondly we will divide the sample in two groups first the full sample is considered then it is divided in two groups having positive and negative CAR, for the possible effect of firm specific factors.

This paper is structured into four sections. Immediately preceding Introduction in Section 1 is Section 2, which outlines valuable literature in this area. Section 3, will describes the nature of data and methodology. Section 4 will presents the empirical results, and Section 5 Will be concluding remarks regarding the results in section 4.

Literature Review

The dividend announcement and its common perception in the mind of investor is common debate of the corporate finance literature. In   literature we found both the supportive and contradictory view of information content of dividend. Fama (1970) applied efficient market hypothesis to stock market and divided the information efficiency in three categories, weak form of efficiency, semi-strong form of efficiency and strong form of efficiency. He further explains how the information is reflected in stock prices. The similar concept is founded in studies like (Keith Cuthbertson, 2005; Reilly, 2006). The contradictory side like Miller (1961) investigated this concept and concluded that the dividend announcement has no impact on the firm returns the dividend information content hypothesis is irrelevant. He further argues that this phenomenon has no impact on stock prices of firm under the assumption if the market is perfect and firm invest with fixed schedule. Rubinstein (1976) tested this context and concluded

that the dividend information content is neutral and it has nothing do with the increase or decrease of the stocks return. Kamstra (2000) supported Miller (1961) study and concludes that the dividend announcement has nothing to do with the change in prices of the stock. Gordon and Shapiro (1956) provide the opposing view as that of (Miller,1961), he concludes that the dividend announcement significantly affect the stock prices and firm returns. Similarly, another study Deangelo and Deangelo (2006) finds that the information content of dividend is highly relevant. Handjinicolaou and Kalay (1984) studied this phenomenon and concluded that it seem the current dividend are affecting the future dividend changes and stock prices.

(Healy and Palepu ,1988; Nissim & Ziv,2001; Michaely et al, 1997; Dyl & Weigand, 1998; Grullon et al. 2002; Koch & Sun, 2004; Fargher & Weigand, 2009) all agree that the information content of dividend and has significant impact on stock prices. They use the CAR to conclude the analysis. They found positive and significant relationship between the CAR and profitability of the firm and its stock prices. Where they fail to reject that there is negative relationship between the CAR and risk. Frankfurter and Wood (2002), Bozos, Nikolopoulos and Ramgandhi, (2011) studied the phenomenon in two steps. First the author developed the CAR and in second they regressed the CAR on various set of variables. They conclude that the firm produced the positive and significant CAR at the announcement dates. In the second part they found significant and positive relationship between managerial ownership variable and information content of dividend. They found all firm specific variables significant and positive in relationship with CAR. In other study (Boehem & Sorescu, 2002; Brav et al, 2005; How, Ngo & Verhoeven, 2011) tested the reaction of market investors to dividend announcements. The stock prices increase and they validated the signalling theory. Fama (1969) studied the phenomenon and concluded that information content of dividend is significant. The dividend portrays signal to market investor about the future trends of stock prices to move. The study divided the data into positive and negative abnormal return analysis in the form of event study. The significant positive CAR confirmed the positive response of market to dividend announcements. The overall results are in accordance with the information content of dividend that the market investor can get positive or negative signal as response of dividend announcements. In an additional study, utilizing quarterly information, Pettit (1972) suggest that it is true that dividend convey sufficient signals to market investor. But the question is that how the market take time to adjust the signal to represent the true efficiency. Is it the signal that are floated in the market due to dividend are efficient and how much time it would take to adjust with the true value of stocks. He suggest that the dividend convey signal in excess of what market perceive. Bhattacharya (1979) holding the perfect information efficiency, investor have capability to assess the inner news of firm. They use various tool to assess the firm profitability, risk and real worth of business. The management use the dividend as signalling tool to portray the signal to external market the real worth of firm.

John and Williams (1985); Miller and Rock (1985), the slight updated and modified version of dividend information content hypothesis was incorporation of cash flows concept. The dividend announcement effects the cash flow in near future or present. This activity is intentional in nature however, management do this by incurring some cost to portray signal to market investor and shareholders. Jensen (1986) suggests the free cash is the main determinant of the stock prices increase and decrease in case of information content of dividend. The dividend would be paid in case of free cash flows where the cash is in excess of cash required for the investment projects. The abnormal response of stock prices would only be observable when there is unexpected dividend announcement. Easterbrook (1984) incorporated the agency cost concept into the phenomenon. He argues that the keeping the shareholder separated from the management concept, sometimes, causes to encourage the misuse of funds by management. In context of agency theory hypothesis, the reaction of stock prices would be negative when dividend announcement occurs.

The research have somewhat interesting results regarding the dividend initiation and dividend omission. The studies like Mitra and Owners (1995) argues that that the increased dividend announcement has positive effect on the stock returns. The study like Eades and Kim (1985) suggest that the decreasing dividend announcements have negative impact on the stock returns. The emerging market like Malaysia reacted the same as the study of (Mitra and Owners, 1995; Hess and Kim, 1985). He concluded that the increasing dividend has positive and decreasing dividend have negative effect on the stock prices.

Kao (1994) studied the unexpected dividend announcements and information content of dividend and concluded that dividend information portrays the significant signals to market investor. Further he suggest that the management take a valuable information to confirm their expectation in future and present scenario.

Data & Methodology

The data is obtained from Balance Sheet Analysis files (BSA) compiled by the State Bank of Pakistan (SBP) Statistics and DWH department. Firm specific variables data is obtained by the BSA files as to the stock prices data is taken from Business recorder for 73 companies on the basis of final dividend announcement dates in the year F011. The methodology is divided into two parts first is to estimate the cumulative abnormal returns using the event study to find out whether there is any affect of the dividend announcements on the stock prices of the firms these test are suggested by (Thompson, 1985; Jhonston, 2007). The abnormal returns are calculated by expected returns by the market model the equation it is as under,

$$r_e = \alpha_0 + \delta_1 r_m \quad \text{..(1)}$$
$$CAR_t = \sum_{t-1}^{0} AR_k \quad \text{...(2)}$$

Where for equation (1) r_e is the expected return, α_0 is the intercept or constant, r_m is the return of market and δ_1 is the slope. After this step we calculate the abnormal returns and the cumulative abnormal returns as in equation (2) and consider the event pre and post window to be 60 and 10 days respectively to identify the effect of such announcements on the firm's stock prices. The second part of the methodology is to check whether the CARs (calculated in equation 3) calculated are being effected by any other firm specific factors, for this purpose firm specific factors are incorporated which will enhance the robustness of the empirical results of event study. If only the event study methodology is applied then results will be spurious due to association of other factors which might distort the actual findings. Secondly we will divide the sample in two groups first the full sample is considered then it is divided in two groups having positive and negative CAR, for the possible effect of firm specific factors. The regression equation will be as follows

$$CAR_t = \alpha_0 + \delta_1 SZE_t + \delta_2 EVOL_t + \delta_3 LER_t + \delta_4 DIV_t + \delta_5 LIQ_t + \varepsilon_1 \quad \text{...........(3)}$$

Where "t" is the year, α_0 is the constant and $\delta_1 \delta_2 \delta_3 \delta_4 \delta_5$ are the coefficients of the explanatory variables. CAR_t is dependent variable for firms at time t.

Specifications of Firm Specific Variables

In the equation above the explanatory variables are SZE which is size of the firm Similarly to Viswanath and al (2002), we define firm size as the natural logarithm of market capitalization, empirical work of Mougoue and Rao (2003) and Alpa and Dhanni (2005) document a reverse relationship between firm size and dividend payout. The EVOL is the volatility which is measured by the standard deviation of stock returns as studied by Rubin and Smith (2009), firms with net income more volatile distribute more dividends in order to send a good signal to outside investors the relationship is expected to be positive, less volatile firms will be inferred as having a steady stream of cash flows leading to consistent dividends as compared to more volatile ones.

LR is the leverage ratio of the firm it is calculated as total liabilities as a percentage of shareholders equity, the sign is expected to be positive which may be due to two different aspects under the agency theory and signalling theory according to Borokhovich (2005) the higher ratio leads to meeting financial liabilities which reduces funds for distribution as for Ross (1977) the higher the debt ratio the more will be the firms value increased. DI is the dividend yield of firms which is calculated as total amount of dividend as a percentage of shareholders equity, the relationship with stock prices is ambiguous may be positive or negative as documented by Belden, Todd and Knapp (2005) and Easstons and Sinclair (1989) respectively.

LIQ is the liquidity of the firm it is calculated as cash in hand divided by total assets, the firms having high liquidity are considered to give more dividends so the expected sign is hypothesized to be positive. It is hypothesised that if any of the explanatory variables is positively or negatively significant in equation 2 it can deduced that it is not only the information content of dividend that effect cumulative abnormal returns but also other factors which ever is significant in equation 3.

Chow Test

The latter part is to check if there is any difference between the firms having negative and positive CARs on this basis the firms will be divided in two groups consisting of the whole sample. To check if any difference is present between the two sub groups CHOW test will be applied to check whether there is any significance difference between the above mentioned groups.

$$F_c = \frac{(SSf - SSp - SSn)/k}{(SSp + SSn)/(N - 2k)} \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots(4)$$

whereas ssf is the sum of square residuals of full sample, ssp is the sum of square residuals of positive sample and ssn is the sum of square residuals of negative sample.

Results

we have applied the event study methodology to calculate the cumulative abnormal return of all companies. As we have used 73 companies for the analysis we could not report the table of cumulative abnormal returns. For the sake of brevity the cumulative abnormal return (CAR) table are not reported. The CAR both have positive and negative significant values as shown in figure 4.1. The positive and significant values of event study before the event (Dividend announcement) indicates that the investor speculates the increase in the future prices of stock and are engaged in speculative activities. For some companies the CAR were negative after the event of announcement of the dividends which indicates the stock returns have decreased after the announcement of the dividends. For some companies that reports positive and significant CAR after the dividend announcement are consistent with the idea that the stock prices increases as dividends are announced. For the sake of further analysis the CAR are divided into three groups. The first category includes the all companies CAR. We report it as full CAR "F". The second group includes the negative CAR of all companies and we report it as positive CAR "P". The third category includes the negative CAR as we report as negative CAR "N" in Table 4.1 and Table 4.2. For each category of CAR we have estimated the separate equation where we kept the CAR as dependent variable and firm specific variable are independent variables. We report the multivariate cross sectional regression results in table 4.1 and table 4.2.

Before discussing the basic results of the multivariate regression model we present the overall explanatory power of the model and overall significance of the model. We report the two important elements as R-squared values and F-statistics. The values reported in the bottom of table 4.1 and 4.2 the R-square values are reported. The R-squared value in case of all regression is comparatively low however the good thing is that the model is overall significant as the F-statistics reported are significant in all cases of regression equation.

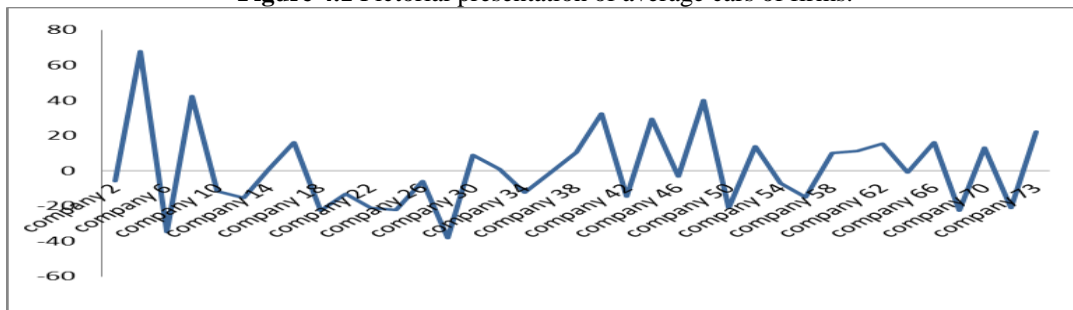**Figure 4.1** Pictorial presentation of average cars of firms.

Table 4.1 Results of Multivariate Cross-Sectional Regressions for CAR 1, 2 & 4.

Variable	CAR 1			CAR 2			CAR4		
	F	**P**	**N**	**F**	**P**	**N**	**F**	**P**	**N**
SIZE	-0.0037	0.0532	-0.0332	-0.0335	0.0113	-0.0017	-0.0039	0.0002	-0.0161
	(0.2340)	(0.5610)	(0.1940)	(0.1352)	(0.2370)	(0.3215)	(0.1314)	(0.2163)	(0.2931)
ENVOL	-0.0453	-0.0651	0.0014	-0.0016	-0.0020	0.0035	-0.0020	-0.0017	-0.0032
	(0.055)**	(0.1940)	(0.5610)	(0.3215)	(0.4891)	(0.2931)	(0.3215)	(0.2579)	(0.2693)
DY	0.1350	-0.2510	-0.0392	0.0231	-0.3126	0.0163	0.0295	-0.5630	0.1680
	(0.023)***	(0.2624)	(0.1497)	(0.054)**	(0.098)*	(0.2561)	(0.051)**	(0.057)**	(0.1790)
LEV	0.3020	-0.0146	0.1340	0.2310	0.0018	0.0632	0.0231	0.0024	0.1320
	(0.3185)	(0.0897)*	(0.2931)	(0.3215)	(0.2163)	(0.2763)	(0.053)**	(0.1213)	(0.2459)
LIQ	0.0144	-0.0346	-0.0022	0.0772	-0.1555	0.0233	0.0169	-0.0054	-0.0022
	(0.050)**	(0.058)**	(0.3924)	(0.051)**	(0.6145)	(0.2340)	(0.5610)	(0.1940)	(0.1352)
R2	24.63%	13.97%	17.30%	27.35%	35.12%	14.17%	15.62%	26.30%	27.31%
F-STAT	4.4170	2.8160	3.4210	4.8650	3.7690	2.6250	3.4230	2.3150	4.4360
CHOW		10.0168***			7.963***			7.134***	

P-values are clustered in parenthesis,** and*** indicates values at 10%, 5% and 1% significance level.
F, P & N in the second row of column are the Full, Positive and Negative CAR respectively.*

Results of Multivariate Cross-Sectional Regressions for CAR 1, 2, & 4

The results reported in table 4.1 shows that the variable earning volatility ENVOL is negative and statistically significant at 5% percent level for CAR1 F only which indicates that the firm whose earnings volatility are less convey maximum information to investor about the future earnings and dividends of firms which as a result increase the stock prices and the returns. For rest of regression we found no significant relationship between the earning volatility and cumulative abnormal returns. The results reported in table 4.1, the coefficients of size variable SZE in all cases are statistically insignificant. Whatever the sign we cannot infer from such results in case for size variable. The statistically significant and positive coefficient of the dividend yield DY for CAR2 F, at 5% level, we can infer that the after the divined announcement the investor has good new as a better event to respond, and stock prices has increased as a result the investors are taking high returns. Where in case CAR2 P and CAR4 P the coefficient is negative and significant at 5% level. It can deduced that that investor feels a bad news about the dividends and predicts future dividends to be lower as a result the stock prices declines and hence effect the returns adversely these results are consistent with (Wansley et al., 1991; Lee & Yan, 2003; Gurgul et al., 2006; Dasilas & Leventias, 2011)

However the Leverage variable LV have a Positive and significant coefficient for CAR2 P and CAR4, F at 5% level meaning that higher the debt ratio more the firm is willing to give healthy dividends, it could be interpreted in the signalling theory perspective that firm being highly levered signals its value increasing which would obviously in return increase the firms profitability leading to healthy dividends . The liquidity ratio variable LIQ has positive and significant coefficients for CAR1 F and CAR2 F at 5% level which indicates that if the firm has sufficient liquid assets it would contribute to higher investors wealth, as for CAR1, P is negative and significant at 5 % level means the firms having liquidity problems are less capable to pay dividends minimizing the shareholders wealth, so it could be inferred that the more liquid the firm is the more finely it is positioned to announce dividends the shareholders can pressurize the management to do so in case the firm has free cash after investing in any project and vice versa in the case of low liquidity. The chow test reported in the bottom of table 4.1 and table 4.2 which are reported to check the difference of the two groups whose CAR are negative and positive, the results reject the null hypothesis (two groups are similar) which indicates that the information content of dividend is validated. In literature we find such evidence when the response of negative or positive CAR are not due to the firm specific factors but due to the information content of dividend (Jin, 2000).

Table 4.2 Results of Multivariate Cross Sectional Regressions for CAR 6,8 & 10.

Variable	CAR 6			CAR 8			CAR 10		
	F	**P**	**N**	**F**	**P**	**N**	**F**	**P**	**N**
SIZE	-0.0020	0.0079	-0.0246	-0.0751	0.0056	-0.0363	-0.0914	0.0007	-0.0086
	(0.1940	(0.6123)	(0.2473)	(0.3215)	(0.4891)	(0.2931)	(0.5610)	(0.2579)	(0.2340)
ENVOL	-0.0023	-0.0040	0.0077	-0.0039	-0.0027	0.0037	-0.0017	-0.0073	0.0016
	(0.0311)***	(0.5610)	(0.1940)	(0.1352)	(0.2218)	(0.3215)	(0.1314)	(0.2163)	(0.2931)
DY	0.0247	-0.6320	0.1820	0.0361	-0.4310	0.0316	0.0614	-0.4220	0.0763
	(0.5012)	(0.0583)**	(0.3924)	(0.0517)**	(0.6145)	(0.2340)	(0.5610)	(0.1940)	(0.1352)
LEV	0.0222	0.0436	-0.0412	0.0351	0.0539	0.0378	0.0637	0.0096	0.0516
	(0.1621)	(0.3456)	(0.4481)	(0.1863)	(0.2371)	(0.2712)	(0.4618)	(0.1523)	(0.1455)
LIQ	0.0138	-0.0440	0.0101	0.0284	-0.0036	0.0248	0.0489	-0.0084	0.0230
	(0.6126)	(0.3694)	(0.4891)	(0.2931)	(0.1231)	(0.1352)	(0.1314)	(0.2163)	(0.2473)
R2	37.88%	8.23%	33.71%	41.21%	9.23%	36.45%	38.26%	6.13%	23.43%
F-STAT	7.681	1.926	4.291	5.274	1.642	3.218	4.139	1.637	3.161
CHOW		8.236***			9.2163***			7.856***	

P-values are clustered in parenthesis,** and*** indicates values at 10%, 5% and 1% significance level.*
F, P & N in the second row of column are the Full, Positive and Negative CAR respectively.

Results of Multivariate Cross-Sectional Regressions for CAR 6, 8 & 10

The results reported in table 4.2 shows that the variable earning volatility ENVOL is negative and statistically significant at 5% percent level for CAR6 F only which indicates that the firm whose earnings volatility is less conveys maximum information to investors about the future earnings and dividends of firms which as a result increase the stock prices and the returns. For rest of regression we found no significant relationship between the earning volatility and cumulative abnormal returns. The statistically significant and positive coefficient of the dividend yield DY for CAR8, F at 5% level, we can infer that the after the divined announcement the investor has good new as better event to respond, and stock prices has increased as a result the investor are taking the high returns. Where in case CAR6, P and CAR4 P the coefficient is negative and significant at 5% level. It can deduced that that investor perceives a negative information about the dividends and predicts future dividends to be lower as a result the stock prices declines and hence effect the returns adversely.

Conclusion

This paper investigates the information content of dividend by employing event study methodology to check the effect of dividend announcement on stock returns. Furthermore, to check the relationship CAR with firm specific factors, we employed the multivariate cross-sectional regression keeping the CAR as dependent variable. The three separate equations for categories of CAR for whole sample, positive CAR and negative CAR are estimated. We report mix result of event study, the positive and significant effect of dividend information on some companies return which seem to that the investor take this event as good news and we found the increasing trend of dividends. However, the certain companies CAR is statistically negative seems that the dividend announcement has negative impact on stock prices. The result of multivariate cross sectional regression as mixed however, the result of the chow test confirms that the information content of dividend holds for the sample companies for the given sample period of analysis and Pakistani companies respond positively to the dividend announcement as a whole. The results are in accordance with the studies conducted by several authors such as (Wansley et al., 1991; Lee & Yan, 2003; Gurgul et al., 2006; Dasilas & Leventias, 2011).

So far the results we reported clearly indicate the importance of dividend announcements on stock prices but still there are a lot of reasons which might affect these announcements in the form of stock splits, stock repurchases etc these factors can be used as a future directions of research heading this way.

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