

Effect of Dividend and Earnings Announcements on Share Prices: Nepalese Evidence

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Abstract:

The paper investigates the effect of dividend and earnings announcements on share prices in Nepal between 2000 and 2011. The study finds, dividend increased (decreased) announcement effect positively (negatively) during the dividend announcement period. Similarly, the announcement of Dividend increased-Earnings increased (Dividend decreased-Earnings decreased) shows positive (negative) influence on the share prices. The study also finds the significant effect of constant dividend announcement on share price. The reason behind this phenomenon could be that the investors perceive 'no change in the dividend' positively. This result suggests that the both dividend increase and decrease convey useful information to the market. The results accept the dividend signalling hypothesis but reject the semi-strong form of market efficiency.

Keywords: Dividend, Earnings, Market efficiency, Signalling effect

I. INTRODUCTION

The theory of efficient markets is concerned with stock prices at any point in time *fully reflect* available information (Fama, 1970, 1991). The market is efficient in a semi-strong form if the security prices reflect not only the information that contains the past time series of stock prices but also all publicly available information. It means that the stock price is adjusted rapidly and in an unbiased way to all-important public announcements quickly and correctly.

This study is concerned with the information asymmetry and the dividend policy. The signalling theory, associated to the dividend content information hypothesis, holds that dividend policy acts as a vehicle for transmitting information from firm's authority to the market. The second, the dividends work as a vehicle to drain excess cash-flows. Bhattacharya (1979), John and Williams (1985) and Miller and Rock (1985) developed the signalling models based on the information asymmetry hypothesis. On the other hand, Jensen

(1986) proposed a theory which is widely known as the free cash flow hypothesis. The theory predicts that the stock prices will increase (decrease) if there is increase (decrease) in unexpected dividend payments.

Similar predictions could also be inferred from agency cost theory forwarded by Easterbrook (1984). According to Easterbrook (1984), the separation of ownership from control would encourage managers to misuse the company's resources for their personal gain. A regular cash dividend payment ensures that managers are alert with their actions. If there was a reduction in dividend, this would increase access to internally generated funds where the management might allocate a greater proportion of the company's resources into perquisites. In such a case, the agency cost theory associates cash dividend decrease with a reduction in a company's equity value, hence a negative price effect is expected out of the announcement.

II. LITERATURE REVIEW

A large number of empirical tests (Pettit, 1972, 1976, Aharony & Swary, 1980, Asquith & Mullins, 1983, Dhillon & Johnson, 1994, Gurgul, Majdosz & Mestel, 2006, McClusky, Burton, Power & Sinclair, 2006, Dasilas, Lyroudi & Ginoglou, 2009, and Dasilas & Leventis, 2011) have shown that dividend changes announcements are positively associated with share returns in the days surrounding the dividend change announcements. Their conclusions emphasise on existence of dividend information content, or signalling effect. Nevertheless, several studies including Benartzi, Michaely and Thaler (1997), Chen, Firth and Gao (2002) and Abeyratna and Power (2002) have not supported the existence of a positive relationship between dividend changes and the market reaction.

Few studies reported that the interaction effects of dividend and earning announcements in the share price (Kane et al., 1984, Easton, 1991, Lonie et al., 1996, Chen et al., 2002, Gunasekarage & Power, 2006, Cheng & Leung, 2006, Dasilas et al., 2008). This paper deals with investigating the semi-strong form of market efficiency including dividend signalling

hypothesis using dividend announcements and earnings as a proxy variable.

III. RESEARCH METHODS

A. Population and Sample Selection

The study has considered the dividend announcements between 2000/01 and 2010/11. During the period, in total 92 dividend announcements were considered for data analysis with 55 dividend-increased and 37 dividend-decreased sub-samples.

B. Methodology

Event methodology, such as, Market model was employed to test dividend announcements effect to stock price as under:

$$R_{it} = \alpha_i + \beta_i R_{mt} + e_{it} \dots\dots\dots(1)$$

The study applies a correction to the observed overall index by using a methodology proposed by Miller et al. (1994). Thus, the proposed model to investigate about abnormal returns on stock due to dividend announcements is as under:

$$R_{it} = \alpha_i + \beta_i R_{mt}^{adj} + e_{it} \dots\dots\dots(2)$$

The market model is estimated for each company in the sample using 180 daily returns. The estimated period starts 200 days before the announcement date and ends of 21 days before the announcement date (or day $t = -200$ to day $t = -21$). The length of the estimation period used in this study is consistent with prior studies of capital market responses such as Bosch and Hirschey (1989) and Dasilas and Leventis (2011).

McWilliams and Siegel (1997) argued that the assumption of market efficiency is difficult to reconcile with the use of a long event window. So, the coefficient estimates from regression equation were used to predict normal returns for the event period (-1, +1). Prediction errors during the event periods, *i.e.*, deviations of realisation returns from normal returns, are estimates of abnormal returns (AR). Thus, the market model is used to calculate an abnormal return for the common stock of a firm *i* on event day *t*, as under:

$$AR_{it} = R_{it} - (\hat{\alpha}_i + \hat{\beta}_i R_{mt}^{adj}) \dots\dots\dots(3)$$

The mean abnormal returns on any given day *t* is:

$$\overline{AR}_t = \frac{1}{N} \sum_{i=1}^N AR_{it} \dots\dots\dots(4)$$

To measure abnormal returns over a specific time interval or holding period, the sample mean abnormal returns are summed to derive the sample mean cumulative abnormal returns as under:

$$\overline{CAR}_t = \sum_{t=T_1}^{T_2} \overline{AR}_t \dots\dots\dots(5)$$

C. Relationship between Dividend Announcements and the Market Reaction

Average cumulative abnormal returns are tested during the dividend announcement period to dividend-increases (good-news) and dividend-decreases (bad-news) sub-samples. Similarly, to explore the relations between the wealth effect and dividend changes, the market’s reaction to dividend change announcements (abnormal returns) is regressed against dividend changes. The following regression model is estimated:

$$CAR_{i,-1+1} = \alpha + \beta_1 DI \times \Delta D_i + \beta_2 DD \times \Delta D_i + e_{it} \dots\dots(6)$$

Where,

- $CAR_{i,-1+1}$ = Cumulative abnormal return for share *i*, during announcement period (-1,+1)
- DI = Dummy variable that takes value 1 if dividend increases and zero otherwise
- DD = Dummy variable that takes value 1 if dividend decreases and zero otherwise

If dividend changes convey information about a firm’s future prospects, as suggested by the dividend information content hypothesis, it is expected that the coefficients β_1 and β_2 to be positive and statistically significant. It implies a significant positive relationship between dividend change announcements and the magnitude of share price reactions to those announcements. The constant term of regression equation address the effect of no-change-dividend on the cumulative abnormal returns.

D. Market Reaction to Dividend Announcements during Increase and Decrease Earnings

The impact of earning-announcements is examined by dividing the total sample into six categories as: (i) dividend increase-earnings increase (DIEI), (ii) dividend increases-earnings decrease (DIED), (iii) dividend decrease-earnings increase (DDEI), (iv) dividend decreases-earnings decrease (DDED), (v) dividend no change-earnings increase (DNCEI), and (vi) dividend no change-earnings decrease (DNCED).

In order to capture the influence of dividend and earning signals on cumulative abnormal return of the sample events, the following regression equation is adapted:

$$CAR_{i,-1+1} = \alpha + \beta_1 DIEI \times \Delta D_i + \beta_2 DIED \times \Delta D_i + \beta_3 DDEI \times \Delta D_i + \beta_4 DDED \times \Delta D_i + e_{it} \dots\dots(7)$$

In the regression, variables DIEI, DIED, DDEI and DDED are dummy variables which take the value of 1 if the situation expressed by the letters is true and zero otherwise. For example, the DIEI is a dummy variable that takes the value of 1 if both dividend and earnings have increased, and otherwise it would figure zero. The dummy variable referring to dividend no change is excluded from the model to prevent the problem of over specification. The intercept term may be interpreted as the scenario where dividends are constant, conveying no significant news to the market. The coefficients β_1 to β_4 represent the influence of the dividend changes on the earnings behaviour.

IV. RESULTS

A. Frequency Distribution of 3-day Abnormal Returns during Dividend Announcement Period

Table 1 reports cross-sectional frequency distribution of 3-day abnormal returns during the announcement period (day $t = -1$ to day $t = +1$) for dividend announcements. Results show that for the case of dividend increases, the results show that 30.91 per cent of the cases have negative abnormal returns. It indicates that Nepalese market has a positive relationship between dividend increase announcement and stock-prices reaction as per prior expectation. Dhillon et al. (2003) found that about 43 per cent of the dividend increase announcement sample presented an adverse market reaction.

For the case of dividend decreases, the results show that 64.86 per cent of the firms examined that there is a negative market reaction to the announcements of dividend-decreases. It shows that investors positively perceive dividend-decrease announcements of almost one-third of the firms. Overall, the results for market reaction to dividend announcements are consistent with the view that dividends convey unique, valuable information to investors.

Table 1: Cross-sectional frequency distribution of three day abnormal returns during the announcement period (day $t = -1$ to day $t = +1$) for dividend announcements

The table reports cross-sectional frequency distribution of 3 day abnormal returns during the announcement period (day $t = -1$ to day $t = +1$) for dividend announcements, based on the market model results. Number of events, percentage of events and cumulative percentages of events have been reported for dividend increase and decrease sub-samples.

Size of 3-day abnormal returns	Dividend increases		
	Number of events	% of events	Cum. % of events
AR < -0.12	0	0.00	0.00
-0.12 ≤ AR > -0.08	1	1.82	1.82

-0.08 ≤ AR > -0.06	1	1.82	3.64
-0.06 ≤ AR > -0.04	0	0.00	3.64
-0.04 ≤ AR > -0.02	5	9.09	12.73
-0.02 ≤ AR > 0.00	10	18.18	30.91
0.00 ≤ AR > 0.02	11	20.00	50.91
0.02 ≤ AR > 0.04	5	9.09	60.00
0.04 ≤ AR > 0.06	10	18.18	78.18
0.06 ≤ AR > 0.08	3	5.45	83.64
0.08 ≤ AR > 0.12	5	9.09	92.73
0.12 ≤ AR	4	7.27	100.00
Total	55	100.00	
Size of 3-day abnormal returns	Dividend decreases		
	Number of events	% of events	Cum. % of events
AR < -0.12	2	5.41	5.41
-0.12 ≤ AR > -0.08	1	2.70	8.11
-0.08 ≤ AR > -0.06	1	2.70	10.81
-0.06 ≤ AR > -0.04	1	2.70	13.51
-0.04 ≤ AR > -0.02	8	21.62	35.14
-0.02 ≤ AR > 0.00	11	29.73	64.86
0.00 ≤ AR > 0.02	2	5.41	70.27
0.02 ≤ AR > 0.04	3	8.11	78.38
0.04 ≤ AR > 0.06	2	5.41	83.78
0.06 ≤ AR > 0.08	1	2.70	86.49
0.08 ≤ AR > 0.12	4	10.81	97.30
0.12 ≤ AR	1	2.70	100.00
Total	37	100.00	

B. Relations between Dividend-Change and Abnormal Returns

The results from the regression are reported in Table 2. The constant term is statistically significant at 10 per cent level, showing a significant impact of dividend no-change announcements on market reaction, which is not predicted by the dividend-signalling hypothesis. The reason behind this phenomenon could be that the investors could perceive ‘no change in the dividend’ positively. It indicates that the zero change in dividends by itself holds useful information to the market. The coefficients for dividend changes are positive, suggesting that the magnitude of the positive (negative) share price reaction increases with the intensity of the positive (negative) information being conveyed. The coefficients of both dividend increase and dividend decrease are statistically significant at 5 per cent level as per the expected signs. This result suggests that the both dividend increase and decrease convey useful information to the market. It supports the dividend signalling hypothesis for the both dividend increase and decrease announcement events. In cases of the dividend increase and decrease, the null hypothesis is rejected and thus the results support the alternate

hypothesis. It indicates that the market understands the signal given by the firms through their dividend change announcements.

Table 2: Regression of market reaction on dividend changes

The table reports the regression of dividend changes on the market reaction considering the dependent variable as $CAR_{i,t+1}$. The $CAR_{i,t+1}$ is the cumulative abnormal returns on the 3 day period, i.e., 1 day before and 1 day after the dividend announcement day. ΔD_i is the dividend per share changes for the year t . DI is a dummy variable that takes value 1 if dividend increases and otherwise remains at zero. Similarly, DD is a dummy variable that takes value 1 if dividend decreases and otherwise remains at zero. The numbers in parentheses are the p-values.

Dependable variable – $CAR_{i,t+1}$	
$CAR_{i,t+1} = \alpha + \beta_1 DI \times \Delta D_i + \beta_2 DD \times \Delta D_i + e_{it}$	
Coefficient	Pooled OLS
Constant	0.019*** (.052)
DI	0.029** (.033)
DD	0.072** (.040)
F	7.731* (.001)
Adjusted R ²	0.13
Durbin-Waston (D-W)	2.000
N	92

* Significantly different from zero at the 1% level

** Significantly different from zero at the 5% level

*** Significantly different from zero at the 10% level

C. Market Reaction to Dividend Announcements during the Earning Increase and Decrease

In order to analyse the market reaction to the earnings and dividend changes, the results obtained from the regression equation are reported in Table 3.

The constant term is statistically significant at 10 per cent level; it shows a significant impact of dividend no-change announcements on the market reaction, which is not predicted by the dividend-signalling hypothesis. It indicates that the zero change in dividends by itself holds useful information to the market. All the coefficients are positive but the DIEI and DDED are statistically significant at 5 per cent level. First, the DIEI is statistically significant with positive sign; it means that the market considers it in a positive way, because the increases in both dividend and earnings are good-news to the market. Secondly, the DDED is statistically significant with the positive sign; it states that the market considers it in a negative way, because the decreases in both dividend and earnings are bad-news to the market. It may be said, then, that the dividend changes constitute the dominant signal to the capital market, as also reported by Pettit (1972), and Aharony and Swary (1980). On the

contrary, the results are in contrast with Lonie et al. (1996) and, Conroy, Eades and Harris (2000) who found that the current earnings constitute the dominant signal to markets, while dividends constitute only a partial signal.

Table 3: Regression of market reaction on dividend and earnings changes

The table reports the regression of dividend and earnings changes on the market reaction considering the dependent variable as $CAR_{i,t+1}$. The $CAR_{i,t+1}$ is the cumulative abnormal returns on the 3 day period, i.e., 1 day before and 1 day after the dividend announcement day. ΔD_i is the dividend per share changes for the year t . DIEI is a dummy variable that takes value 1 if dividend increase-earnings increase and otherwise remains at zero. DIED is a dummy variable that takes value 1 if dividend increase-earnings decrease and otherwise remains at zero. DDEI is a dummy variable that takes value 1 if dividend decrease-earnings increase and otherwise remains at zero. DDED is a dummy variable that takes value 1 if dividend decrease-earnings decrease and otherwise remains at zero. The numbers in parentheses are the p-values.

Dependable variable – $CAR_{i,t+1}$	
$CAR_{i,t+1} = \alpha + \beta_1 DIEI \times \Delta D_i + \beta_2 DIED \times \Delta D_i + \beta_3 DDEI \times \Delta D_i + \beta_4 DDED \times \Delta D_i + e_{it}$	
Coefficient	Pooled OLS
Constant	0.019*** (.058)
DIEI	0.028** (.037)
DIED	0.047 (.370)
DDEI	0.058 (.301)
DDED	0.076** (.050)
F	3.912* (.006)
Adjusted R ²	0.113
Durbin-Waston (D-W)	2.031
N	92

* Significantly different from zero at the 1% level

** Significantly different from zero at the 5% level

*** Significantly different from zero at the 10% level

However, the coefficients for DIED and DDEI are statistically insignificant to stress that the earning-changes cannot influence the market. Nevertheless, both coefficients have positive signs; it indicates that the results are compliant with the information content hypothesis.

Finally, the null hypothesis is rejected, because the market perceived simultaneous increases (decreases) in both dividends and earnings as good-news (bad-news).

V. CONCLUSIONS

The study results are in consonance with the dividend information content hypothesis as well as with the semi-strong form of efficient capital market

hypothesis. On an average; the Nepalese stock market adjusts in an efficient manner to new dividend information according to the dividend changes. Almost all of the price adjustments have occurred within the dividend announcement period. As per the pre-set expectation, the dividend-increase (dividend-decrease) is perceived as good-news (bad-news) with only significant abnormal returns on the dividend announcement day.

With supporting the dividend signalling hypothesis, the coefficients of both dividend increases and dividend decreases are statistically significant at 5 per cent level as per the expected signs. This result suggests that the both dividend increases and decreases convey useful information to the market. But the constant term was found statistically significant, showing a significant impact of dividend no-change announcements on market reaction, which is not predicted by the dividend-signalling hypothesis. Market reaction was statistically and significantly positive (negative) to increase (decrease) in both dividend and earnings.

The dividend changes announcement constituted the dominate signal to the Nepalese capital market. But, the results reject the notion of semi-strong form of market efficiency, which advocates that the fundamental analysis is inadequate to earn excess returns from the market, and security prices reflect all publicly available information.

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