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IMPACT OF DIVIDEND POLICY ON SHARE PRICES: A STUDY ON PHARMACEUTICAL COMPANIES LISTED IN DHAKA STOCK EXCHANGE

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ABSTRACT

The purpose of this paper is to investigate the impact of dividend policy on share prices with a focus on pharmaceutical companies listed in Dhaka Stock Exchange (DSE) Limited. We have tried to analyze the ever debating subject on investors' trade-off between dividend and capital gain with a concentration on pharmaceutical industries. We have taken secondary data of three pharmaceutical companies from year 2011 to 2020 as sample of this study. A cross sectional regression analysis has been applied to explore the statistical association between fluctuation of share price and the dividend per share (DPS). The empirical test of this study reveals that there is no significant impact of dividend per share (DPS) on stock price movement as we find the p value 0.298 which is greater than 0.05.

Key words: Dividend policy, DPS, capital gain tax, bonus share

INTRODUCTION

Investment in stock is always been an attractive one among all other investment areas. Through buying and selling ownership of a company in the capital market, investors make tremendous return for themselves. Among all the investment avenues the stock investment is a lucrative one. Stock market is one of the most important financial institutions in any economy. There is a saying that the stock market is the pulse of the economy. Investors participate voluntarily to buy and sell ownership of a company in the capital market. They take this decision considering many factors like, the company's earnings, cash flows, future investment opportunities, asset size, dividends, etc. Any change in these elements is coupled with changes in share price of a particular company. Among these factors declaration of a particular dividend policy is very crucial for the company. If a company is in a growth mode, it may decide that it will not pay dividends, rather re-invest its profits (retained earnings) in the business. In 1996, the market was crashed because of speculative bubble whereas; it was an asset bubble in the year 2011. Price was inflated about 500-700 percent compared to the face value. DGEN Index climbed at point 8918.51 on December 05, 2010 which signaled a steeper bubble. The volatility in the market

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resulted from the volatility in the stock prices. Dividend Policy, which is a financial decision to distribute the firm's earnings to the shareholders, has a contribution in share price volatility. Whether dividend per share is responsible for variability in share prices of the firm, is controversial matter. Issues of dividend policy range from its puzzle by Black (1976) to its irrelevance by Miller and Modigliani (1961) then to its relevance by DeAngelo, and Skinner (1996). The information asymmetry between managers and shareholders, along with the separation of ownership and control, formed the base for explanation for why dividend policy has been most popular. There is a lot of track of research on dividend related issues in recent times. Masum (2014) analyzed to identify whether dividend policy affects the shares market price of listed commercial banks in Dhaka Stock Exchange and found that there was a significant negative relation between dividend yield and stock price while retention ratio has a negative but statistically insignificant relationship with Stock Market Prices. He further showed that return on equity and earnings per share have statistically significant positive impact on stock price and profit after tax has a significant negative impact on Stock Market Prices of the commercial banks of Bangladesh. Islam & Hossain (2015) applied structural equation modeling and found that the DPS, EPS, and PE have impact on the market price of share. Their findings supported the relevancy theory of dividend policy. Ali & Chowdhury (2010) examined stock price reactions of listed Private Commercial Banks (PCBs) in Dhaka Stock Exchange (DSE) surrounding 44 days of the dividend announcement dates. The empirical part of this study employs a standard event study methodology to analyze the stock price reaction for dividend announcement. Out of 25 listed sample banks in the observation period, market adjusted stock price declines for 11 banks, rises for 6 banks and no changes for 8 banks and statistical pooled t-test also reveals that stock price reaction to dividend announcement are not statistically significant. Uddin (2009) found a significant linear relationship between market price of stock and net asset value per share; dividend percentage; earning per share. The markets are relatively new and are still growing and have experienced a lot of ups and downs. The stock markets of Bangladesh are still characterized by semi strong form of efficiency and markets of asymmetrical information. But the situation is improving gradually. The investors and their knowledge play the most important role in any stock market. But a huge chunk of the general investors in the stock market are still unaware of the fundamental and financial factors. And for these reasons the studies have been made to seek the relationship between dividend policy and share price movement. Therefore main objective of this study is to investigate the impact of dividend per share on the share price of the pharmaceutical firms listed at the Dhaka Stock Exchange by establishing a relationship between dividend policy and stock price volatility. To investigate the impact of dividend per share on the share price for companies listed at the Dhaka Stock Exchange; this study proposed the following hypotheses:

H_0: There is no significant impact of dividend per share (DPS) on share price (SP) at the Dhaka Stock Exchange (DSE).

H_1: There is significant impact of dividend per share (DPS) on share price (SP) at the Dhaka Stock Exchange (DSE).

REVIEW OF LITERATURE

There are different opinions about the effect of dividend on share price. One group argued that dividend has impact on share price volatility while others showed that dividend does not affect

the share price. Modigliani and Miller (1961) formulated a model which is popularly known as MM model. According to this model there is no change in the value of equity by dividing profit between retain earnings for investment and dividend payout. Weather the firm declares a dividend or not, it does not bear impact on shareholders' wealth. The MM hypothesis holds good under the assumption of perfect markets, rational behavior and perfect certainty. External finance like debt and equity add value to the firm. Firm can collect external finance without incurring transaction cost under perfect capital market. This makes dividend payment independent of firm's financing decision. Lintner (1956) presented first the signaling theory of dividend where he revealed that the price of firm's stock usually changes when the payout of dividend changes. Bhattacharya (1979) states in the signaling theory that dividend may work as a signal of expected future cash flows. An increase in the dividend indicates that managers expect higher cash flow in future. Author assumed that there is imperfect information regarding future cash flows and capital gain to the outside investors. Author argued that although there is a tax disadvantage for dividends, companies would choose to pay dividends in order to send positive signals to shareholders and outside investor. Asquith & Mullins (1983) provided empirical evidence in favor of the signaling theory. They argue that an increase of dividend payments tends to increase the shareholders wealth. Lintner (1956) represented the bird in hand theory and the theory supported by many researchers including Gordon (1963). But it is easier to predict the current dividend rather than capital gain, as the stock price is determined by the market forces and not by managers (Keown and *et al.* 1963). The assumption is that company first invests their equity and they do not use external capital for investment. This means that company invest their retained earnings. Second internal rate of return, cost of capital and retention ratio is same or constant and the company has an eternal life. Gordon (1963) assumes that uncertainty arises due to the time factor of the capital gain and dividend payment. There is logic that if the time period of dividend is for away, there arise more uncertainty of capital gain and future dividend. It is difficult to forecast what will be the amount of dividend and capital gain in future. Considering the length of time period and level of risk, investor is willing to pay more prices to their stock. In this case, investor pays more price of that stock which will pay current dividend in near future. Linter (1956) argued that most companies are conservative for their financial policy and dividend payment are therefore based on optimal payout ratio. Myers and Bacon (2004) explained that the uncertainty regarding future profit has an effect on the company dividends. If the risk is higher than the current risk, the company may reduce the dividend payout ratio in order to hedge to decrease future profits. Harkavy (1953) rationalized that amount of retained earnings will affect the dividend payment and hence the share price. The preference for either dividend or capital gains will attract investors to invest in companies whose dividend policies meet their individual requirement. Many investors like pensioners prefer dividends over capital gains in their regular demand. Their preference is depended on tax treatment and transaction cost associated with the selling stock. The minimum tax and transaction cost attract the investors to the stock. Brennan and Thakor (1988) argued in their research that majority of the shareholders may support a cash dividend payout despite the preference on tax treatment of capital gains for the individual investor. A study on the extent of the effect of transaction costs and taxes on investor's protfolios in the USA was conducted by Pettit (1977). He studied 914 investor's protfolis. His findings supported the clientele theory. He reported that there was a positive relationship between investor age and their portfolios' dividend yield whiles the incomes of investor were negatively related to dividend yield.. But those who have portfolios with low un- diversifiable risk prefer dividend to capital gains. Thus they invest on those stocks which will pay higher dividends. His findings

supported the tax-induced clientele effect. Eckbo and Verma (1994) and Short *et al.* (2002) also obtained similar result in the study. Therefore companies tend to build up a clientele of shareholders who are satisfied with their dividends policies. This means that significant change in dividend policies will affect the share price of the companies. Dennis *et al.* (1994), Litzenberberand Ramaswamy (1982) and Bajaj andVijh (1990) showed that changes in dividend payment have a significant effect on share price.

METHODOLOGY

A cross sectional research design considering secondary data from Dhaka Stock Exchange (DSE) has been used. Regression model has been used to find the statistical significance of selected independent variable on share price. It is a causal research. There are lots of data regarding this research in the internet. In this research, the main focus is that the effect on share price with respect to dividend payments. Here share price is the dependent or responsive variable and dividend is the independent or explanatory variable of three company listed in the DSE. In this research 10 pharmaceutical companies which were listed in DSE (Dhaka Stock Exchange) by 2010 are considered as a target population. But author tried to use data of those companies which were listed near the same time in the DSE. We find the value of share price and dividend per share in annual report of the sample companies from year 2011 to 2020. Table 1 presents these collected data of 10 (ten) years. In the result section, we find that DPS do not result in SP. Therefore, in future, other variables can be considered as the further research.

Table 1. Explanatory variable

Company Name	Year	Response variables share price	Explanatory variables DPS
ACI Ltd.	2020	204.20	9.00
	2019	274.70	11.50
	2018	347.80	11.85
	2017	516.50	11.82
	2016	290.10	11.82
	2015	265.70	12.50
	2014	258.70	11.50
	2013	267.00	10.50
	2012	178.60	10.00
	2011	237.80	7.50
Square Pharma	2020	172.50	17.13
	2019	264.30	13.80
	2018	293.10	10.35
	2017	290.10	9.31
	2016	290.10	14.50
	2015	265.70	10.00
	2014	258.70	10.00
	2013	267.00	10.00
	2012	178.60	8.50
	2011	237.80	8.50
Renata Pharma	2020	1026.20	14.00
	2019	1158.40	11.00
	2018	1296.50	11.00
	2017	1157.10	14.50

2016	1,157.10	11.82
2015	1233.00	12.50
2014	984.00	11.50
2013	722.00	10.50
2012	739.50	10.00
2011	1205.00	10.00

Therefore a sample of 3 companies was randomly selected from the total population based on availability of data within same time frame (Year 2011 to 2020). Those companies are: ACI Ltd., Square Pharma Ltd., and Renata Pharma Ltd. All data is collected from the secondary sources. Information on dividend payment and share price is collected for the annual report of these companies from the year 2011 to 2020.

Model specification

The market price of share used in the study as the dependent variable and dividend per share (DPS) as the independent variable. Therefore, the regression equation shows the relationship between the dependent variable and independent variable in a linear form as follows:

$$y = a + bx$$

Where,

Y = Market price of share (dependent variable) in Dhaka Stock Exchange

X = Dividend per share (independent variable) in Dhaka Stock Exchange

a = the intercept

b = the coefficient of independent variable

The model for this study is:

The model can be more explicitly stated for analysis and estimation as follows:

MPS = a + b (DPS)

RESULTS AND DISCUSSION

In this study, we have applied several test procedure to examine the relationship between the share price and dividend payment. Considering "Goodness of fit" of the fitted regression line for a set of date, we will find out how well the simple regression line fits the data. "Goodness of fit is measured by the coefficient of determination. The coefficient of determination or R^2 (for one variable case) or (For simple regression) is the summary which tells how well the simple regression line fits the data. It is non-negative quantity and its limits are $0 \leq R^2 \geq 1$. An $R^2$of 1 mean is a perfect fit and an R^2 of zero means no relationship between the dependent variable and the explanatory variable. In this study, the R is 0.197, it means that the correlation coefficient of share price of ACI Ltd, Square Pharma Ltd and Renata Pharma Ltd with independent variable of dividends is slightly correlated. R-square (R^2) is the coefficient of determination which is used for assessing the fitness of the regression model. The table 2 show the value of R square and adjusted R square with standard error of estimate.

Table 2. Coefficient of determination

R	R square	Adjusted R square	Std. error of the estimate
0.197	0.039	0.004	404.999

There is a baseline model in R-square which is worst model. R-square does not use predictor (independent) variable to measure the responsive (dependent) variable. Instead it uses the mean of the observed responses of dependent variable Y (Share Price) and always predicts this mean as the value of Y. In this study, R-square is 0.197 or 19.7%. It means the 19.7% of the variation of share price can be explained by the dividend per share only. Mathematically representation of R-Square (R^2): R-square is given by

$$R^2 = 1 - \frac{SSE}{SST}$$

SSE is the sum of Square errors of our regression model:

$$SSE = \sum_{i=1}^{n} (Y_i - \hat{Y}_i)^2$$

SST is the sum of square errors of our baseline model:

$$SST = \sum_{i=1}^{n} (Y_i - \hat{Y}_i)^2$$

Adjusted R Square is the real effect of the dividend payout to the share price of the company. Investor may use some variable to find out the accurate result. Some independent (explanatory) variables may be more useful and some may be not. If they use more useful variable, they will receive more accuracy result in the measurement. On the other hand, they will receive low accuracy in the result. In this study, the adjusted R square is 0.03. This means that the real effect of the dividend to the share price is 3%. The formula of Adjusted R Square is given below

$$R^2_{adj} = 1 - \left[\frac{(1 - R^2)(n - 1)}{n - k - 1}\right]$$

n = the number of point of data sample.

k = number of variables excluding the constant.

The variation of the dividend payment to the share price is the R square and the real effect of the dividend payment to the share price is the adjusted R square. The adjusted R square is 0.03 or 3 %. Due the dividend payment, change occurs in the share price approximately 3%.

Table 3. ANOVA table

	df	SS	MS	F	Significance F
Regression	1	184834.74	184834.74	184834.74	0.298
Residual	28	4592682.98	164024.39	164024.39	
Total	29	4777517.72			

Table 3 shows that the column labeled significance, F has the associate p-value. Since .298>0.05. So it is not significant at 95% confidence level or 5% significant level.

Table 4. Statistic

Variables	Range	Max value	Min value	Median	Mean	Std. deviation	CV
DPS	9.63	17.13	7.50	11.00	11.23	2.066	18.39%
SP	1124.00	1296.50	172.50	290.10	535.93	405.88	75.73%

Table 4 provides us the specific information about the component. The first column shows the information what we input in the tool. Let a and b denote population coefficient of intercept, dividend per share payout. Y= 102.09+ .197X

Interpreting the intercept "a" can be interpreted as the value of Y intercept you would predict if X = 0. Here the value of "a" is constant. The value of "a" is the minimum line of the share price if the x or dividend per share equal to zero. In the table 4, the value of coefficient is 0.197 that means "b" equal to 0.197. If the value of dividend changes by one unit, the share price will be change by 0.197. We have found the P-value 0.298. As the P-value is greater than the 5% significant level, the null hypothesis is accepted in our study that indicate insignificant relationship exist between dividend per share and share price of companies listed in DSE.

CONCLUSION

There is an insignificant relationship between the share price and DPS in Dhaka stock Exchange. It also indicates a few dependency of the dependent variable on the independent variable. Our study supports the MM theory that represents no relationship between share price and DPS. The real effect of the DPS on share price is low but it is effective to change the price of the share in the market of the company in this case other variable may be associated in share price that needs to be further study and multiple regression model can be applied to show the multivariable effect on share price.

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