

## The Effect of Dividend Policy on Determining the Working Capital Requirement

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**Abstract:** The effect of dividend policy on value of the firm is the most debated issue in the field of finance because the dividend decision is correlated with investment decision and financing decision of a listed firm. The most important factor that is considered in working capital financing decision is the dividend policy of a firm because working capital requirement can be financed by the retained earnings. A large number of literatures that support and do not support this wisdom have been found. So, the current study has been undertaken aiming at evaluating the effect of dividend policy on working capital requirement of listed Pharmaceutical companies. The study has covered secondary data and analyzed the data by employing descriptive statistics, correlation and multiple regression models. Different tests of hypotheses are employed to test the coefficient, constant and fitness of the model. The study has found that there is positive effect of dividend policy on the determination of working capital requirements of a firm.

**Key words:** Dividend payout ratio, Retention Ratio, current ratio and working capital.

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Date of Submission: 29-05-2018

Date of acceptance: 18-06-2018

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### I. Introduction

Dividend decision is one of the unresolved issues in finance theory. There are a huge literatures, theories and models for facilitating the dividend decision of a firm. After the irrelevance theory of dividend policy developed by Modigliani and Miller(1961), there have been considerable debates on the effect of dividend policy on the value of the firm. Debates have been concentrated on whether the full amount of EPS is to be distributed as dividend or not. Indeed there exists no definite explanation on how firms determine their dividend policy. dividend policy is one of the three decisions of financial management because it affects the financial structure, flow of funds, corporate liquidity and investors' attitude as well as working capital (Bijendra, 2009). Managers have to decide whether to pay dividend or not and if they decide to pay dividend, they will face a further question of how much they should pay. Therefore dividend policy is intended to regulate and guide a firm's management when issuing dividend to shareholders (Wanjiku,2013). On other side, Working capital is very important for the success of the business because of its effect on firms' profitability as well on liquidity (Kesimly and Gunay, 2011).

The capital market in Bangladesh is liberalized and Bangladeshi economy consists of different kinds of industry. The size, ownership structure and capital structure of the firms are different. The listed companies belong to a specific industry have to compete among themselves. They need to adjust the different financial decisions in order to ensure the profitability, liquidity, increasing value of the firm and increasing share price. The Pharmaceutical Industry is one of the most prospect able industries in Bangladesh. They need huge working capital like other manufacturing industries. Again as a listed company the pharmaceutical company has to make dividend decision that attracts the investors and ensures the value of the firm. So, the current study aims at evaluating the effect of the dividend policy on the determination of working capital requirements.

### II. Literature review

Dividend policy has long been an issue of interest in the financial Literature and, despite the vast research on the topic, it remains an open subject. Ever Since the work of **John Linter (1956)**, followed by the work of **Miller and Modigliani (1961)**, dividend policy remains a controversial issue. One of the most critical arguments of financial literature has been dividend Policy Dividend has two important aspects. First, it is an effective element of corporations' investment. On the one hand, the higher the dividend paid out, the lower will be corporations' internal resources for performing investment projects, while outsourcing requirement will increase. On the other hand, many corporate shareholders demand cash dividends (**Salehi and Biglar, 2009**). Thus, managers should always equilibrate between different interests of shareholders so that they could utilize

investment profitable opportunities and would pay required cash dividends for some shareholders (Salehi and Rostami, 2009).

**Lintner (1956)** suggests that dividend depends on the firm's current earnings and on the dividend for the previous year. He finds that major changes in earnings with existing dividend rates are the most important determinants of the firm's working capital requirement. He also finds that firms tend to make periodic partial adjustments toward a target payout ratio rather than dramatic changes in payout.

**Fama and Babiak (1968)** support Lintner's argument that managers increase dividends only after they are reasonably sure that they can permanently maintain them at the new level. Miller and Modigliani (MM, 1961) suggest that, in a world without taxes, transaction costs, or other market imperfections, dividend policy is irrelevant to the value of the firm. They also suggest that dividends are paid from the money left after investing in positive NPV project.

So far, a lot of research has been done on dividends.

**RoJeff (1982)** investigated the dividend policies and their relation with variables such as beta rate, growth rate, and management ownership to determine working capital requirement. By collecting the data from 1000 firms in 64 different industries he found that dividend payment is a reverse function of future growth in sales, beta rate, and corporations' management ownership ratio. On other side, dividend payment has a direct relationship with the number of shareholders.

In 1992, **Jensen et.al U.S corporations** concluded that debt ratio has a reverse relationship with the dividend payment ratio, so that the higher the debt ratio, the higher is the financial risk and lower the dividend distribution. After 1978, the dividend percentage reduced dramatically because of higher dividend payment by large firm.

**Pandy (2001)** investigated the dividend payment behavior where Results showed that dividend payment ratios among different industries are different. The results also suggested that larger and more profitable companies pay higher dividends and firms with profitable opportunities pay fewer dividends.

**Arnort and Ashess (2002)** investigated the relationship between the growth in dividends and revenues. They explored why the dividend payment ratio has reduced but price/earnings per share ratio continued to increase from 1995.

**Adelegan (2003)** concluded that dividend yield and dividend payment ratio is higher And this higher levels of dividends increase the levels of leverage.

**Goergen et al, (2004)** examined the dividend determination behavior in German firms. By measuring 221 corporations they found that German corporations paid fewer dividends than English corporation's. and sometimes they did not pay any dividend because the dividend payments are based on cash flows which reduced profitability and earnings.

**Beabczuk (2004)** investigated deterministic elements in dividend policies of listed corporations in the Argentina Exchange during 1996-2002 and results indicated that larger and more profitable firms without good investment opportunities paid more dividends. Meanwhile, corporations with higher risk and borrowing paid fewer dividends.

**Raablle and Hedensted (2008)** concluded that Danish corporations pay Dividend and results high return on owner's equity and accumulated dividend, low market, book value ratio, large firm size and dividend distribution in the previous year.

**Al-Kuwari (2009)** investigates the determinants of dividend policies for firms listed on Gulf Cooperation Council (GCC) country stock exchanges where the determinants of dividend policy have received little attention. This study use a series of model that considered impact of govt. ownership, cash flow, firm size, growth rate etc. where the results suggested that dividend payment strongly and directly related to government ownership, firm size and firm profitability, but negatively to the leverage ratio

In addition to this, **Shin and Soenen (1998)** intended to come up with the determinants of working capital, and found that its management is correlated in a positive way to firm size

**Lazaridis and Tryfonidis (2006)** conducted a statistical analysis of 131 firms in Athens for the period 2001- 2004 at an adequate level of CCC and found a negative relationship between the company's working capital and its profitability.

**Black (1976)** epitomizes the lack of consensus by stating that "The harder we look at the dividend picture, the more it seems like a puzzle, with pieces that don't fit together

#### **Objectives of the study:**

The principal objective of the study is to evaluate the effect of dividend policy on working capital. To accomplish this objective following specific objectives have covered:

- To examine the dividend policy of the pharmaceutical Industry
- To assess the relationship between dividend policy and working capital
- To evaluate the impact of dividend payout policy on working capital

**Hypothesis of the study:**

Hypothesis is the statement which represents inferred relationship among different variables. The conjectured relationships between the variables are drawn based on the literature review. These relationships can be verified by using certain tests and statistical techniques. These hypotheses depend upon the results derived from statistical analysis. As per the objectives of the study the following hypothesis is developed for testing:

H1: Dividend policy has significant effect on working capital.

So the hypothesis is

H0: There is no significant effect of dividend policy on working capital.

H1: There is significant effect of dividend policy on working capital.

**III. Methodology of the Study:**

**Data collection technique:**

This study is based on secondary data. This study covers the pharmaceutical industry of Bangladesh. A sample of 5 companies was selected among the pharmaceutical companies in Bangladesh covering the years 2007-2016. Published annual reports of each company were collected as a source of secondary data.

**Data processing and analyzing technique:**

SPSS 23 and excel have been used to process and analyze the data. Dependent and independent variables are analyzed by using correlation and linear regression. Statistical tools like regression analysis, F-test have been used to assess and interpret the data. Regression analysis has been used to highlight the relationship between dividend policy and working capital. F-test has been performed to test the statistical significance of the parameters at 1 % level of significance.

**Specification of the Models:**

The sample of the study is clipped applying a methodology to test the effect of dividend policy on working capital by multiple regression analysis using least square estimation method. Assumption on which least square estimation method is based include

- (a) Relationship between dependent and independent variables is linear, (b) residual term to be normally distributed with zero expectation, not correlated with independent variables and have constant variance.

According to this empirical model, working capital is affected by the variables shown in the following equation:

$$Y = \beta_0 + \beta_1\chi_1 + \beta_2\chi_2 + \beta_3\chi_3 + \beta_4\chi_4 + E$$

Or,  $CR = \beta_0 + \beta_1DPR + \beta_2EPS + \beta_3RR + E + \dots \dots \dots (1)$

Where, CR=Current ratio

$\beta =$  Is a constant, the value of Y when all X values are Zero.

DPR=Dividend Payout Ratio

EPS= Earnings Per Share

RR= Retention Ratio

$\beta_1, \beta_3, \beta_2, \beta_4,$  – are regression coefficients or change induced in Y by each X variable  $E$  – Error term.

Here, **Dependent Variable:** Current Ratio (CR)

**Independent Variable:**

- I. Dividend payout Ratio(DPR)
- II. Earnings Per Share(EPS)
- III. Retention Ratio(RR)

**Table 1:** Descriptive features of variables

|                | CR     | EPS     | DPR     | RR     |
|----------------|--------|---------|---------|--------|
| Range          | 2.20   | 3.53    | 2.30    | 1.35   |
| Minimum        | -.31   | 1.03    | -2.30   | -1.35  |
| Maximum        | 1.89   | 4.56    | 0.00    | 0.00   |
| Sum            | 17.02  | 139.49  | -51.82  | -19.45 |
| Mean           | .3403  | 2.7898  | -1.0364 | -.3889 |
| Std. Deviation | .44943 | 1.10168 | .57922  | .27444 |
| Variance       | .202   | 1.214   | .335    | .075   |

**Source:** Annual Report

**Note:** Data has been compiled by the researcher

In addition to these three regression analyses, the coefficient of determination ( $R^2$ ) also used to analysis the variance and to justify the accuracy of the model developed in this study. The study has also used Adjusted coefficient of determination ( $AR^2$ ) to justify whether the value of  $R^2$  is increased for using the three independent variables. The study has tested individual coefficient by using t-test at the 5% and 10% level of significance. The way the alternate hypothesis is stated indicates that the test is one tailed.

Although, the least square method has the ability to draw the inferences about the relationship for an entire population, the study has tested the ability of the independent variables to explain the behavior of the dependent variable by using a global test that is called F-test.

Average, Standard deviation, variance, range, correlation, beta regression analysis, coefficient of determination, t-test and F-test have been calculated by using SPSS 23 for windows.

#### IV. Findings and Analysis:

##### Analysis of Zero-Order Correlation of variables related to Dividend policy and Working capital:

The study has employed Karl Pearson's coefficient of correlation for tracing the correlation between Dividend policy and Working capital. In this case, the study examined relationship between Dividend policy and Working capital variables of sample commercial banks. This relationship is exhibited in Table: 2

**Table 2:** Zero-order correlation between Dividend policy and Working capital

|     | CR    | EPS    | DPR     | RR     |
|-----|-------|--------|---------|--------|
| CR  | 1.000 | -.335* | .212*** | .304** |
| EPS |       | 1.000  | -.126   | -.222  |
| DPR |       |        | 1.000   | -.228  |
| RR  |       |        |         | 1.000  |

Source: Annual Report

Note: Data has been compiled by the researcher

\*Significant at the 0.01 level (1-tailed)

\*\* Significant at the 0.05 level (1-tailed)

\*\*\* Significant at the 0.10 level (1-tailed)

From the analysis of zero-order correlation matrix (Table:2), it has been found that Current Ratio (CR) is significantly and negatively associated with Earning Per Share(EPS) at 1% level of significance. It indicates that the EPS has pervasive influence on the CR this means if EPS increases then CR will decrease. The study has also found that Current Ratio (CR) is significantly and positively associated with Retention Ratio (RR) at 5% level of significance this indicates that CR will increase with the increase in RR.

Again, from the analysis it has been found that Current Ratio (CR) is significantly and positively associated with Dividend Payout Ratio (DPR) at 10% level of significance that means DPR increases then CR will also be increased.

##### Assessment of effect of dividend policy on determining working capital requirement:

The results of the regression analysis related to hypothesis drawn on working capital are presented by table-3.

**Table 3:** Effect of dividend policy on determining working capital requirement

|                   | $\beta$ | Std. Error | t      | Sig.          | VIF   |
|-------------------|---------|------------|--------|---------------|-------|
| (Constant)        | 1.007   | .196       | 5.132  | .000          |       |
| EPS               | -.095   | .055       | -1.729 | .091**        | 1.089 |
| DPR               | .196    | .105       | 1.863  | .069**        | 1.092 |
| RR                | .506    | .226       | 2.241  | .030*         | 1.131 |
| R                 |         |            | 0.475  |               |       |
| R Square          |         |            | 23%    |               |       |
| Adjusted R Square |         |            | 18%    |               |       |
| F Change          |         |            | 4.469  | Sig. F Change | .008  |

Source: Annual Report

Note: Data has been compiled by the researcher

\*Significant at the 0.05 level (1-tailed)

\*\* Significant at the 0.10 level (1-tailed)

The R –value is .475 as shown in the table above. This means that there is a weak positive relationship between working capital and dividend policy ( $r < 0.5$ ). The coefficient of determination ( $R^2$ ) shows that CR is influenced 22.6% of the variations by dividend payout ratio and others by 77.4 %. The value of adjusted R – square is =.175 which means the percent of S.D is roughly one half percent of variance explained.

According to table 3, the overall significance of the model was 0.008 with an F value of 4.469. This means there is a positive and significant relationship between CR and dividend payout ratio. Therefore the study rejects the null hypothesis and accepts that there is a statistically significant relationship between CR and dividend payout ratio i.e., dividend policy has a significant effect on working capital.

From the analysis of the effect of dividend policy on working capital the study has found that when the companies pay the dividend then the CR is increased by 0.196 because slope ( $\beta_1$ ) = .196 and when the companies retain the earnings then the CR is decreased by .095 because slope ( $\beta_2$ ) = -.095. Both the constant and the coefficients RR are significant at less than 5% level of significance. DPR and EPS is higher than 5% level of significance. The multi-co linearity has been checked. The independent variables are not strongly correlated with each other because the value of variance inflation factor (VIF) is less than the upper limit of 10.

## **V. Conclusion:**

This study aims at investigating the relationship between dividend policy and working capital. (Current Ratio)CR, (Dividend Payout Ratio) DPR, (Earnings per Share) EPS and (Retention Ratio) RR are examined. The hypothesis of the study is that there is a significant effect of dividend policy on Working capital. The regression model has shown that DPR and RR is weakly positively correlated with CR and EPS is negatively correlated with CR. The study has found that there is a significant effect of dividend policy on CR which supports the relevance theory of the dividend policy.

## **VI. Limitation of the Study:**

A similar study should be conducted using other measures of working capital like efficiency indices, on measures of dividend policy like price earnings ratio and dividend yield. The study limited itself to the manufacturing sector in Bangladesh, future research can be carried out and include other industrial sectors in the study and other countries. Furthermore a comparative study with a longer period should be undertaken to determine the nature of the relationship and lastly a similar study should also focus on non listed companies.

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Farhana Nasrin, "The Effect of Dividend Policy on Determining the Working Capital Requirement." IOSR Journal of Economics and Finance (IOSR-JEF), vol. 9, no. 3, 2018, pp. 08-12.