Effect of Liquidity, Profitability and Financial Leverage on Dividend Policy: Comparison between Manufacturing and Non-Manufacturing Firms in Bangladesh

Dr. Syed Muhammad Khaled Rahman
Anindita Dey

Abstract

This study aims to explore the effect of liquidity, profitability and financial leverage on cash dividend policy for a sample of 14 manufacturing and non-manufacturing firms enlisted in Dhaka Stock Exchange(DSE) in Bangladesh during 2011-2017. By using SPSS 25 the paper builds up a multi linear regression model with an assumption that each coefficient for each independent variable is different while others remains constant and across firms the common intercept will be fixed. It is found that profitability always positively influences the payment of dividend policy whereas leverage did the opposite one. Liquidity, measured by cash flow from operation, has a negligible influence on determining dividend rate. Effect of liquidity varied from manufacturing and non-manufacturing firms as the analysis depicted two different figures with opposite sign.It can also be mentioned that degree of influence of liquidity, profitability and leverage is higher in case of manufacturing firms in Bangladesh. The hypothesis test rejected all null hypotheses except one which says there is no significant influence of leverage on dividend payment in case of manufacturing firms. Thus investors can always rely on a firm's profitability and leverage while making any investment decision with a view to having some cash dividends since those are functioning as the key determinants.

Keywords: *Liquidity, Profitability, Financial Leverage, Dividend*

1. Introduction

When shareholders are investing in any company that means they are expecting a minimum return based on their investment. Not always a company can make profit and distribute this profit among stockholders, some may disburse all of it while some may retain this earning for future company growth. The amount given to the investors by the company itself is known as dividend; generally classified in two broad groups, cash dividend and stock dividend (Gitman, 2008). Whether a firm will announce a dividend or not, if yes how much it should pay, is basically dependent on several factors including

industry structure, market capitalization, liquidity, profitability, tax effects etc. (Alam & Hossain, 2012). There may be some positive or negative relation among these three variables and any firm's dividend policy. For analyzing thoroughly this paper used some independent variables and one dependent variable, which has been discussed in the methodology part.

2. Problem Statement

In the light of conflict and contradiction, dividend decisions are related to the sense that investors should prefer if they wish to receive cash dividend or they want to sacrifice the earning for future company growth as well as maximizing shareholders wealth (Khan, 2004). Meanwhile, which factors actually cause cash dividends to be paid or not, are also creating concerns among shareholders. Investment decision depends on firm's value and firm value to some extent depends on firm's dividend payout policy, which creates a doubtable situation.

3. Literature Review

How much dividends should any shareholder get in any financial year, is considered one of the top debatable issues among the financial institutions. Many researchers worked on this theory but could not come to any single and specified decision. A decision must be made based on the amount of earnings retained on the business versus the amount to be received by stockholders in the form of dividends (Rose & Hudgins, 2007-08). Most firms have a set of policies with respect to the periodic dividend, but the payout ratio can be changed by the directorial body owing to change in various internal factors (Gitman, 2008).Some exemplary studies such as McCabe (1979), Dhrymes & Kurz (1967) signified impact of industry classification on determining corporate dividend policy though Rozeff (1982) concluded that a company's dividend policy is not being described by which industry it belongs. If there is any dispersion then the differences occurred primarily because of the utilities' responses relative to either manufacturing or wholesale/retail (Baker, Farrelly, & Edelman, 1985). Noticeably Karpavicius & Yu (2018) projects stock prices of dividend payers are greater by 12.5% or 17.4% on average (depending on methodology) compared to those of non-payers. However, Booth & Zhou (2017) says dividend policy is irrelevant to the firm's valuation, only the free cash flow matters.

According to Gupta & Banga (2010), ownership structure, leverage, liquidity, profitability and growth were the factor for determining dividend policy. Statistical regression had been applied for covering the overall analysis. In case of profitability, Ajanthan (2013) showed there is significant impact of dividend payout, revenue and total assets on net profit of listed hotels and restaurants companies in Sri Lanka. That means an increase in financial well-being can positively affect dividend payout policy. In the case of India, profitability is proportional to dividend payout whereas firm size, liquidity, growth and market value negatively signifies the trend of dividend payment (Gangil & Nathani, 2018).

It has been noticed that some work has been done in case of Bangladesh and its listed companies. "While other things remain constant, the influence of liquidity, leverage, profitability, growth and market capitalization on dividend is 0.097, 0.601, 0.044, 0.233, and 0.654 in the opposite, opposite, opposite, same and opposite direction respectively. Mechanically, the dividend is 70.808 in absences of liquidity, leverage, profitability, growth and market capitalization. 49.10 percent of the variation in dividend rate is explained by cash flows, leverage, profitability, growth and market capitalization" – said Alam & Hossain (2012). Meanwhile Hossain, Sheikh, & Akterujjaman analyzed 'firms that maintain high liquidity ratios tend to generate more retained earnings instead of paying more cash dividends to meet the costs of new investments or pay overdue liabilities.' Furthermore, Abu (2012) said higher revenue does not always determine dividend payout of banks, so does P/E ratio. There are no significant studies to differentiate between manufacturing and non-manufacturing firms listed in DSE in their dividend payout policy and their determinants. This paper is willing to explain the relationship among independent variables (liquidity, profitability and financial leverage) and how they become essential factors to define a firm's dividend payment and compare in between those two categories.

4. Research Questions

Research questions are as follows:

a. Is there any significant impact of liquidity, profitability and leverage on dividend payment?
b. How can independent variables explain the variability of dependent variables?
c. Does manufacturing firms differ from non-manufacturing firms in case of dividend decision and some firm specific factors?

5. Research Objectives

The main objective of the study was to measure the impact of firm specific factors on dividend decision. Specific objectives are as follows:

a. To identify the impact of liquidity, profitability and leverage on dividend payment of the firm.
b. To explore significant factors that affect dividend payment of the firm.
c. To evaluate whether factors from manufacturing firms act differently from service firms

6. Hypotheses of the Study

Following the debate in literature, hypothesis regarding possible influential factors on dividend payments are as follows:

Variable name	Null Hypotheses
Liquidity	-1 = There is no significant influence of liquidity on cash dividend payments.
Profitability	-2 = There is no significant influence of profitability on cash dividend payments.
Financial Leverage	-3 = There is no significant influence of financial leverage on cash dividend payments.

7. Limitations

a. There are time and resource constraints for conducting the research
b. The study is limited to some firms of selected industries rather than whole industrial sector

8. Theoretical Framework on Liquidity, Profitability, Financial Leverage and Dividend

A company's liquidity is its ability to meet its short-term financial obligations. This is done by comparing a company's most liquid assets, those that can be easily converted to cash, with its short-term liabilities. In general, the greater the level of liquid assets to meet short-term liabilities, the better. A company with a low coverage rate should raise a red flag for investors as it may be a sign that the company will have difficulty meeting its short-term financial obligations, and consequently in running its day-to-day operations.

During hard times for the business or the economy, a company with insufficient liquidity might be forced to make tough choices to meet their obligations. These could include liquidating productive assets, selling inventory or even a business unit. These moves could prove detrimental to both the company's short-term viability and their long-term financial health (Wohlner, 2017).

Profitability ratios are a class of financial metrics that are used to assess a business's ability to generate earnings relative to its revenue, operating costs, balance sheet assets, and shareholders' equity over time, using data from a specific point in time. For most profitability ratios, having a higher value relative to a competitor's ratio or relative to the same ratio from a previous period indicates that the company is doing well. Ratios are most informative and useful when used to compare a subject company to other, similar companies, the company's own history, or average ratios for the company's industry as a whole. Profitability ratios are the most popular metrics used in financial analysis, and they generally fall into two categories: margin ratios and return ratios. Margin ratios give insight, from several different angles; on a company's ability to turn sales into profit. Return ratios offer several different ways to examine how well a company generates a return for its shareholders. Some examples of profitability ratios are profit margin, return on assets (ROA), return on investment (ROI) and return on equity (ROE) (Kenton, 2019).

Financial leverage is the degree to which a company uses fixed-income securities such as debt and preferred equity. The more debt financing a company uses, the higher its financial leverage. A high degree of financial leverage means high interest payments, which negatively affect the company's bottom-line earnings per share. Financial risk is the risk to the stockholders that is caused by an increase in debt and preferred equities in a company's capital structure. As a company increases debt and preferred equities, interest payments increase, reducing EPS. As a result, risk to stockholder return is increased. A company should keep its optimal capital structure in mind when making financing decisions to ensure any increases in debt and preferred equity increase the value of the company (Investopedia).

Gordon's theory(1959) on dividend policy is one of the theories believing in the 'relevance of dividends' concept. It is also called a 'Bird-in-the-hand' theory that states that the current dividends are important in determining the value of the firm. Gordon's model is one of the most popular mathematical models to calculate the market value of the company using its dividend policy (Borad, Gordon's Theory on Dividend Policy, 2018). However, the dividend irrelevance theory,by Modigliani and Miller (1961), indicated that a company's declaration and payment of dividends should have little to no

impact on stock price. If this theory holds true, it would mean that dividends do not add value to a company's stock price (Chen, Dividend Irrelevance Theory, 2019). There are also some theories, which describe some important determinants of dividend policy. Agency Theory given by Jensen and Meckling (1976) stated that management is not always concerned about fulfilling shareholders interest more specifically maintaining the growth of shareholders wealth and giving dividends to investors. Hence, managers will adopt an opportunistic behavior for their own benefit, not for the interest of shareholders thus agency problems will be created inside any organization. If the ownership structure allows any company to give part of its ownership to stockholders, then the managerial body and its employee will work in favor, which may affect dividend decision policies (Hossain, Sheikh, & Akterujjaman).

Dividend signaling is a theory that suggests that when a company announcement of an increase in dividend payouts is an indication of positive future prospects. The theory is directly tied to game theory; managers with good investment potential are more likely to signal. While the concept of dividend signaling has been widely contested, the theory is still a concept used by proponents of inefficient markets. Because the dividend signaling theory has been treated skeptically by analysts and investors, there has been regular testing of the theory. Overall, studies indicate that dividend signaling does occur. Increases in a company's dividend payout generally forecast positive future performance of the company's stock while, conversely, decreases in dividend payouts tend to accurately portray negative future performance by the company.(Chen, 2018).Pecking order theory is a theory related to capital structure. It was initially suggested by Donaldson. In 1984, Myers and Majluf modified the theory and made it popular. According to this theory, managers follow a hierarchy to choose sources of finance. The hierarchy gives first preference to internal financing. If internal financing is not enough, then managers would have to shift to external sources. They will issue debt to generate funds. After a point when it is no longer practical to issue more debt, equity is issued as a last option. (Borad, 2018).

9. Methodology

9.1 Sample and Sampling

Data have been collected from the annual reports of selected firms, which were randomly selected by using stratified random sampling from the year of 2011 to 2017. Industrial sector was considered a stratification factor in this seven years period of study, 7

manufacturing and 7 non-manufacturing firms have been taken into account. Industrial sectors from which samples were drawn are given below with the name of sample firms:

Table 1: Name of Industrial Sector and Sample Firms

Manufacturing Firms		**Non-manufacturing Firms**	
Company	**Sector**	**Company**	**Sector**
Confidence Cement Ltd.	Cement	Aamra technologies Ltd.	IT
Apex Spinning & Knitting Mills Limited	Textile	NCC Bank	Bank
Square Pharmaceuticals Ltd	Pharmaceutical	Prime finance	NBFIs
Bata Shoe Company (Bangladesh) Limited	Tannery	Samorita Hospital	Services & Real Estate
GPH Ispat Ltd.	Engineering	Grameenphone	Telecommunication
Linde Bangladesh Ltd	Fuel & Power	BRAC Bank	Bank
Beach Hatchery Ltd	Food & Allied	Summit Alliance Port Limited	Services & Real Estate
Northern Jute ltd	Jute	IPDC	NBFIs

9.2 Specifications of Variables

9.2.1 Dependent Variable

Dividend rate: Percentage of cash dividend per share (DIV) paid to shareholders in any single financial year.Only cash dividends paid by the companies are considered in dependent variable while stock dividend and repurchases of stocks have been ignored.

9.2.2 Independent Variables

Liquidity: Net cash generated from operating activities (CFO), taken from a cash flow statement that is net profit before taxes and extraordinary income adjusted to non-cash charges and receipts.

Profitability: Return on investment (ROI) which relates net profit with total investment.

Financial leverage: Debt-equity ratio(DER) which is the ratio of total debt to total equity.

9.3 Specification of the Econometric Model

Following multivariate linear econometrics model has been formed to analyze and compare the effect of liquidity, profitability and financial leverage on cash dividend policy of selected manufacturing and non-manufacturing firms:

= + + + +

= = = = =

Where, Common intercepts Coefficient of CFO, Coefficient of ROI, Coefficient of DER, and Error term

ANOVA test has been performed as a model diagnostics test to check the fitness of the model where p value = 0.05.

10. Results and Discussion

10.1 Normality Test: To perform the normality test of regression residuals, we consider Shapiro-Wilk test as it works well when residuals are unique.

Table 2: Tests of Normality, Manufacturing Firms and Non-manufacturing Firms

	Shapiro-Wilk			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Unstandardized Residual	.937	56	.473	.866	56	.204
Standardized Residual	.937	56	.479	.609	56	.215

Source: Data compiled by researchers and processed on SPSS

Results obtained from the normality test depict residuals are normally distributed (p value>.05).

10.2 Model Fitness: To evaluate if the linear regression model is a better fit to the data than a model that contains no independent variables, F test is performed for overall significance and we are assuming two hypotheses for both manufacturing and non-manufacturing firms' linear model.

(Null hypothesis) = The model with no independent variables fits the data as well as the given model.

(Alternative hypothesis) = Given model fits the data better than the intercept-only model.

Table 3 : ANOVA (Manufacturing Firms)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	289253.483	3	96417.828	**21.573**	**.000**[b]
	Residual	232411.071	52	4469.444		
	Total	521664.554	55			

a. Dependent Variable: Dividend

b. Predictors: (Constant), Return on Investment, Debt/equity ratio, Cash Flow from operation

Table 4 : ANOVA(Non-manufacturing Firms)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	141715.804	3	47238.601	**155.993**	**.000**[b]
	Residual	15746.936	52	302.826		
	Total	157462.740	55			

a. Dependent Variable: DIV(%)

b. Predictors: (Constant), ROI (%), DER, CFO (million)

Table 3 and 4 shows the analysis of variance (ANOVA) for two different dataset where level of significance p=0.05. The F-test of overall significance is the hypothesis test for this relationship. For both cases it is found that our assumption for the model, data and variables, are statistically significant. For manufacturing firms, F(3, 52) =21.573 and p=.000<.05 whereas ANOVA test for non-manufacturing firms donates F(3, 52) = 155.993 and p=.000<.05. For both cases p value is less than level of significance thus we can reject null hypothesis and accept alternative hypothesis that is why given model fits the data better than intercept only model. Thus F test and related p value measures our sample data provides sufficient evidence to conclude that the regression model fits the data than the model with no independent variable.

10.3 Descriptive Statistics: Analysis of this study starts with descriptive statistics by using SPSS 25 for both manufacturing and non-manufacturing firms in table 5 and table 6 respectively. In case of manufacturing firms, the average dividend paid by the companies is 53.161 tk ranges minimum 0 tk to maximum 310 tk per share. CFO stands at 1196.79 million tk per financial year for every firm meanwhile companies total debt is .6195 times its total equity with a standard deviation of 2.91. Net profit is 9.585 times more in proportion to its total investment, which derives a minimum negative value in return to highest 32%.

Table 5: Descriptive Statistics of Manufacturing Firms

	N	Minimum	Maximum	Mean	Std. Deviation
DIV(%)	56	.0	340.0	53.16	97.3900
CFO(million)	56	-545.57	10009.37	1196.79	2543.37
DER	56	-16.64	9.40	.619	2.91
ROI(%)	56	-14.29	32.00	9.58	10.20

Note: Data compiled by researchers and processed on SPSS

In Case of non-manufacturing firms table 6 describes mean, maximum, minimum and standard deviation for all these four variables. Average cash dividend paid by the

companies in the selected period is 29.63% where the minimum starts to 0 and maximum goes for 205% per share. 6462.27 million tk has been generated from operating activities however the standard deviation is high where data shows a highly negative cash outflow in the minimum range. Total is 3.29 times higher than total equity where the ROI reveals 6.05% net income has been earned in proportion to total investment.

Table 6: Descriptive Statistics of Non-manufacturing Firms

	N	Minimum	Maximum	Mean	Std. Deviation
DIV(%)	56	.00	205.00	29.63	53.50
CFO(million)	56	-5679.86	57783.34	6462.27	13934.55
DER	56	.0030	16.10	3.29	4.51
ROI(%)	56	-5.72	21.00	6.05	5.19

Note: Data compiled by researchers and processed on SPSS

Average dividends paid by companies are higher in amount in case of manufacturing firms; also their return on investment is higher too. But in the other two cases the service industry performs better.

10.4 Multicollinearity: Table 7 shows variance inflation factor(VIF) which defines the correlation between independent variables and the strength of this correlation. Multicollinearity occurs when there is correlation among IVs and this can be a problem. Table 7denotes the VIF value of each independent variable from where we can find every VIF value<10 that means correlations are limited enough among IVs, which does not require any correction.

Table 7 : Test of Multicollinearity

Model		Manufacturing		Non-manufacturing	
		Collinearity Statistics		Collinearity Statistics	
		Tolerance	VIF	Tolerance	VIF
1	Cash Flow from operation	.868	1.152	.363	2.757
	Debt/equity ratio	.984	1.017	.874	1.144
	Return on Investment	.858	1.165	.352	2.844

Note: Data compiled by researchers and processed on SPSS

10.5 Regression Line: Table 8 shows the following regression line for manufacturing firms:

$$= -4.182 - .011 \quad - 5.224 \quad + 7.641$$

A value of .011 is the partial regression coefficient of cash flow from operation, which indicates when other variables remain constant if CFO changes by one percent, dividend rate will change by .011 in opposite direction. In case of debt-equity ratio dividend will change 5.224 percent in the opposite direction. A value of 7.641 is the partial regression coefficient of return on investment, if it changes by one percent the dividend rate will change accordingly in the same way by 7.641%. Common intercept -4.182 represents if all the independent variables held zero then for a certain period of time the dividend rate will be -4.182.

Table 8: Coefficients (Manufacturing Firms)

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	-4.182	12.425		-.337	.738
	CFO(million)	-.011	.004	-.276	-2.780	.008
	DER	-5.224	3.114	-.157	-1.678	.099
	ROI	7.641	.953	.801	8.015	.000

Dependent Variable: Dividend (%) Note: Data compiled by researchers and processed on SPSS

Table 9: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	$.745_a$	.554	.529	66.8539

a. Predictors: (Constant), Return on Investment, Debt/equity ratio, Cash Flow from operation

R square .554 depicts 55.4% variation in dividend rate can be explained by cash flow from operation, debt/equity ratio and return on investment.Table 10 interprets the regression line for non-manufacturing firms,

$$= 9.235 + .003 \quad - 3.015 \quad + 1.885$$

Value of .003 is the partial regression coefficient of cash flow from operation, means if CFO changes by one percent, dividend rate will change by .003% in the same direction. Changing in one percent of DER will cause 3.015 percent change in dividend rate in the opposite direction. 1.885% dividend will change if ROI changes by one percent.

Common intercept 9.235 means if CFO, DER and ROI held zero, then the final dividend will be 9.235% per share.

Table 10: Coefficients (Non-manufacturing Firms)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	9.235	4.016		2.299	.026
	CFO(million)	.003	.000	.763	10.480	.000
	DER	-3.015	.556	-.254	-5.418	.000
	ROI(%)	1.885	.762	.183	2.473	.017

Dependent Variable: DIV (%) Note: Data compiled by researchers and processed on SPSS

Table 11: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.949[a]	.900	.894	17.40189

a. Predictors: (Constant), ROI(%), DER, CFO(million)

R square value of .90 denotes that 90.0% variance in dividend payment can be explained by the selected independent variables (CFO, DER, ROI).Value of R square in service industry is around 35% higher than manufacturing firms which means that service companies' dividend policy depends on CFO, DER and ROI to a large extent while that of manufacturing company depends on other extraneous factors. It can also be mentioned that the degree of influence of liquidity, profitability and leverage is higher in case of manufacturing firms in Bangladesh. In case of manufacturing firms, partial regression coefficients of liquidity, profitability and financial leverage are -.011, -5.224 and 7.641 respectively meanwhile in case of non-manufacturing firms coefficients are .003, 1.885 and -3.015 in the same order.Dividend policy has significantly related with profitably in a positive way as both of regression lines provide a positive value, which concludes if ROI increases payment of cash dividend will increases accordingly. However, the partial coefficient of leverage ratio, DER, denotes there will be an inverse relation which is why, if DER rises up, cash dividend goes down and vice versa. Liquidity, measured by cash flow from operation, has a negligible influence on determining dividend rate. In case manufacturing firms it shows -.011 percent change whereas .003 percent can be seen in case of non-manufacturing firms.

10.6 Test of hypothesis: After considering the t test and p value we draw following result from assumed hypothesis**:**

Table 12: Test of Hypothesis

For Manufacturing Firms			
Variable	**T stat**	**P value**	**Decision**
Cash flow from operation	-2.780	.008	=
Debt/equity ratio	-1.678	.099	=
Return on Investment	8.015	.000	=
For Non-manufacturing Firms			
Variable	**T stat**	**P value**	**Decision**
Cash flow from operation	10.480	.000	=
Debt/equity ratio	-5.418	.000	=
Return on Investment	2.473	.017	=

Note: Data compiled by the researchers and processed in SPSS

Thus, in conclusion, it can be said that all variables have significant influences on determining cash dividend policy regardless of its industry structure whereas leverage has no influence on cash dividend payment in case of manufacturing firms.

11. Recommendations

Both manufacturing and non-manufacturing firms should try to boost up their operating cash flow and investment yield as these are the significant determinants of dividend payment. Investment projects should be chosen carefully so that highest value creating projects are undertaken with least cost of capital. Firms should also devote most of their resources to high yielding financial assets. Besides cash flow and ROI, non-manufacturing firms should also be concerned about their capital structure. Proportion of debt financing should be reduced with a view to increase payment of dividend to shareholders.

12. Conclusion

This study examines the effect of liquidity, profitability and financial leverage on dividend policy and draws a comparison between manufacturing and non-manufacturing firms in Bangladesh. Some previous studies about relationships among those independent variables and dependent variables prove some identical results though none of them especially from Bangladesh aspects shows any comparisons between manufacturing and service firms. It has been found from the study that cash flow generation, leverage, and ROI have significant impact on dividend payment of non-manufacturing firms while only leverage has no significant impact on dividend payment of manufacturing firms. When investing money in any organization, lenders can look for the information such as the firm's profitability, liquidity,leverage, ownership or market value of firms to determine whether they could make a better investment decision. (Rizqia, Siti, & Sumiati, 2013). Further research could be done in a broader industry segment and each kind of segment can be appraised in this specific aspect of impact.

References

Abu, S. T. (2012). Determinants of dividend payout policy: Evidence from Bangladesh. *International Journal of Economic Practices and Theories*.

Ahmed, H., & Jabid, A. Y. (2008). *MPRA*. Retrieved 3 6, 2019, from MPRA: https://mpra.ub.uni-muenchen.de/

Ajanthan, A. (2013). The Relationship between Dividend Payout and Firm Profitability: A Study of Listed Hotels and Restaurant Companies in Sri Lanka. *International Journal of Scientific and Research Publications*.

Alam, M. Z., & Hossain, M. E. (2012). Dividend Policy: A Comparative Study of UK and Bangladesh. *Journal of Business and Management*.

Baker , H. K., Farrelly, G. E., & Edelman, R. B. (1985, Autumn). A survey of Management views on Dividend Policy. *Financial Management, 14(3)*, 78-84. Willey.

Booth, L., & Zhou, J. (2017, November). Dividend policy: A selective review of results from around the world. *Global Finance Journal, 34*, 1-15.

Borad, S. B. (2018, june 18). Gordon's Theory on Dividend Policy. Retrieved March 16, 2019, from efinancemanagement.com: https://efinancemanagement.com/dividend-decisions/gordons-theory-on-dividend-policy

Borad, S. B. (2018, December 29). Pecking order theory. Retrieved March 16, 2019, from efinancemanagement.com: https://efinancemanagement.com/financial-leverage/pecking-order-theory

Chen, J. (2018, May 22). *Dividend signaling*. Retrieved March 16, 2019, from www.investopedia.com: https://www.investopedia.com/terms/d/dividendsignaling.asp

Chen, J. (2019, January 31). Dividend Irrelevance Theory. Retrieved March 16, 2019, from www.investopedia.com: https://www.investopedia.com/terms/d/dividendirrelevance.asp

Dhrymes, P. J., & Kurz, M. (1967). Investment Dividend and External finance behaviour of firms. In Determinants of Investment behaviour (pp. 427-467). *New York: Columbia University Press.*

Gangil, R., & Nathani, N. (2018, February). Determinants of dividend policy: A study of FMCG sector in India. *Journal of Business and Management, 20*(2), 40-46.

Gitman, L. G. (2008). Principles of Managerial Finance. Singapore: *Pearson Education Limited.*

Gupta, A., & Banga, C. (2010). The Determinants of Dividend policy. *IIMC*, 63-77.

Hossain, M. F., Sheikh, R., & Akterujjaman, S. M. (n.d.). Impact of Firm Specific Factors on Cash Dividend Payment Decisions: Evidence from Bangladesh. *International Review of Business Research Papers*.

Investopedia. (n.d.). *Financial Leverage.* Retrieved March 14, 2019, from www.investopedia.com: https://www.investopedia.com/walkthrough/corporate-finance/5/capital-structure/financial-leverage.aspx

Karpavicius, S., & Yu, F. (2018, March). Dividend premium: Are dividend-paying stocks worth more? *International Review of Financial Analysis, 56*, 112-126.

Kenton, W. (2019,). Profitability Ratios Definition. Retrieved March 14, 2019, from www.investopedia.com: https://www.investopedia.com/terms/p/profitabilityratios.asp

Khan, M. Y. (2004). *Financial Management: Text, Problems And Cases* (4th ed.). New Delhi, India: Tata McGraw-Hill Education .

McCabe, M. (1979). The Empirical relationship between Investment and Financing: A New Look. *Journal of Financial and Quantitative Analysis*.

Rizqia, D. A., S. A., & Sumiati. (2013). Effect of Managerial Ownership, Financial Leverage, Profitability,Firm Size, and Investment Opportunity on Dividend Policy and Firm Value. *Research Journal of Finance and Accounting*.

Rose, P. S., & Hudgins, S. C. (2007-08). Bank management & Financial Services. New York: McGraw Hill.

Rozeff, M. S. (1982). Growth, beta and agency cost as determinants of Dividend Payout Ratio. *Journal of Financial Research*, 249-259.

Wohlner, R. (2017, May 4). Liquidity Measurement Ratios. Retrieved March 14, 2019, from www.investopedia.com: https://www.investopedia.com/university/ratios/liquidity-measurement/

Appendices

Table A-1: Dataset (Manufacturing Firms) for the Period of 2011-2017

Company name	Year	DIV(%)	CFO (million)	DER	ROI (%)
Confidence Cement	2011	20	84.44	0.02	9.07
	2012	20	-54.4	0.03	13.63
	2013	27.5	377.65	0.60	15.12
	2014	25	-95.45	0.76	10.88
	2015	27.5	569.52	0.79	10.88
	2016	10	353.13	0.88	21.53
	2017	15	420.71	1.04	13.59
Apex Spinning	2011	18	54.58	1.64	1.6
	2012	18	151.92	1.85	1.56
	2013	20	21.01	1.72	1.65
	2014	20	-15.07	2.27	1.69
	2015	22	211.68	2.36	1.97
	2016	20	119.52	1.98	1.74
	2017	20	-88.62	2.17	1.67
Square Pharma	2011	25	3645.01	0.31	13.39
	2012	25	5299.64	0.27	14.41
	2013	30	6416.14	0.21	15
	2014	30	6996.22	0.13	17.02
	2015	40	10009.37	0.12	19.17
	2016	35	9542.48	0.71	20.8
	2017	36	10007.01	0.60	15.18
Bata shoe	2011	25	678.74	1.27	14
	2012	27.5	482.19	1.14	15
	2013	30	563.48	1.04	16
	2014	28	644.06	0.81	15
	2015	32	591.88	0.76	17

	2016	33	1076.48	0.84	16
	2017	33.5	839.29	0.83	16
GPH Ispat	2011	10	14.68	2.14	4.89
	2012	15	1103.06	1.68	5.09
	2013	15	329.02	2.02	4.77
	2014	17	-77.48	1.93	4.87
	2015	12	-545.57	1.13	2.81
	2016	5	1193.04	1.56	4.44
	2017	0	365.48	3.10	2.84
Linde Bangladesh Ltd	2011	250	526.09	0.00	32
	2012	310	483.59	0.00	22
	2013	310	835.71	0.00	30
	2014	310	748.72	0.00	24
	2015	310	1021.62	0.00	24
	2016	310	1113.59	0.00	28
	2017	340	1158.45	0.00	26
Beach Hatchery Limited	2011	0	12.19	0.10	7.45
	2012	0	12.99	0.02	8.18
	2013	0	14.63	0.02	7.91
	2014	0	29.96	0.11	7.81
	2015	0	0.87	0.12	-4.17
	2016	0	0.87	0.13	-4.69
	2017	0	-0.29	0.14	-3.1
Northern Jute	2011	0	-6.4	9.40	-9.07
	2012	0	-38.78	-16.64	-14.29
	2013	0	-0.25	-6.55	-9.87
	2014	5	-20.75	1.40	0.91
	2015	20	8.68	1.21	1.59
	2016	5	-103.68	1.89	0.29
	2017	20	-61.94	2.63	1.55

Source: Annual Reports of Sample Firms

Table A-2: Dataset (Non-manufacturing Firms) for the Period of 2011-2017

Company name	**Year**	**DIV(%)**	**CFO (million)**	**DER**	**ROI (%)**
Aamra Technologies Limited	2011-12	10	164.01	1.21	4.18
	2012-13	0	195.47	1.11	2.7
	2013-14	5	34.25	0.48	4.5
	2014-15	10	32.61	0.52	4.76
	2015-16	10	-52.01	0.64	4.67
	2016-17	10	289.81	0.57	4.27
	2017-18	10	118.07	0.56	4.28
NCC Bank	2011-12	10	1317.27	7.92	13.99
	2012-13	0	3809.83	9.36	9.05
	2013-14	6	3101.37	8.35	11.04
	2014-15	0	1738.73	8.54	11.5
	2015-16	12.75	2506.76	8.41	11.25
	2016-17	16	4311.7	9.5	8.67
	2017-18	13	1639.48	10.85	6
Prime Finance	2011-12	0	15.14	2.22	7.81
	2012-13	0	126.77	2.13	3.1
	2013-14	15	-97.53	2.3	3.13
	2014-15	12.5	27.22	2.47	3.2
	2015-16	0	160.59	4.24	-2.59
	2016-17	0	-1093.13	4.26	-5.72
	2017-18	0	511.93	4.47	2.94
Samorita Hospital	2011-12	0	54.55	0.59	8.39
	2012-13	0	58.48	0.11	3.94
	2013-14	20	64.07	0.12	3.95
	2014-15	20	62.72	0.19	3.86
	2015-16	10	58.17	0.18	3.42
	2016-17	10	58.18	0.18	3.42
	2017-18	12	72.66	0.18	3.77
Grameenphone	2011-12	205	40192.76	0.13	17

	2012-13	140	30022.59	0.16	15
	2013-14	140	37081.1	0.55	12
	2014-15	160	31255.47	0.95	15
	2015-16	140	38791.15	0.8	15
	2016-17	175	46151.5	0.56	17
	2017-18	205	57783.34	0.4	21
BRAC Bank	2011-12	0	5860.86	12.87	11.41
	2012-13	0	19855.24	16.1	3.44
	2013-14	10	-5679.86	14.12	5.7
	2014-15	20	9678.08	10.52	7.15
	2015-16	25	-2915.73	10.93	6.13
	2016-17	10	9767.25	10.59	9.2
	2017-18	0	21374.36	10.14	9.14
Summit Alliance Port Limited	2011-12	20	216.67	0.003	3.21
	2012-13	20	126.76	0.003	3.15
	2013-14	15	213.57	0.06	2.68
	2014-15	15	312	0.07	1.63
	2015-16	10	107.11	0.54	2.01
	2016-17	15	381.68	0.4	3.15
	2017-18	12.5	238.32	0.44	1.72
IPDC	2011-12	10	260.86	0.26	1.72
	2012-13	10	-466.72	0.23	1.85
	2013-14	15	342.53	0.2	1.91
	2014-15	15	-15.66	0.17	2.14
	2015-16	20	122.24	0.09	3.01
	2016-17	20	1133.21	0.41	2
	2017-18	20	409.65	1.35	1.1

Source: Annual Reports of Sample Firms

Table A-3: Nomenclature

Symbol	Description
DIV	Dividend per share (%)
CFO	Cash flow from operation
DER	Debt/Equity ratio
ROI	Return on Investment

Authors: 1. Dr. Syed Muhammad Khaled Rahman is the corresponding author of this article. He is an Associate Professor of Department of Business Administration at Shahjalal University of Science and Technology, Sylhet.
2. Anindita Dey is an undergraduate student of Department of Business Administration, Shahjalal University of Science and Technology, Sylhet.