

## Trends of Dividend Payment Practices of Listed Corporate Firms in the Dhaka Stock Exchange

<sup>1</sup>Md. Monimul Haque

### Abstract

**Objective:** This paper examines the dividend payment practices of corporate firms in Bangladesh over the period 2000-2014 and attempts to explain the observed behavior by analyzing the trends and growth of dividend and to find the relationship between the trends and growth of the prices of the shares.

**Methodology:** This study uses Simple Growth Rate (SGR), Compound Growth Rate (CGR) and Trend Growth Rate (TGR) for measuring the growth of dividend and the price of the shares in the Dhaka Stock Exchange (DSE). To find the TGR we used time series data and to find the relationship between price and dividend by regression we used panel data. Our sample contains 92 listed non-financial companies from different sectors. In this study, we have observed the trend of price movement, industry-wise both for cash dividend paying and bonus dividend paying companies.

**Findings:** Results show that the companies which are paying cash dividend are able to maximize their share values to a greater extent than the companies which are paying bonus dividends.

**Key words:** Dividend, Cash Dividend, Bonus Dividend, Dividend Policy

### Introduction

Firms raise equity capital in order to invest in real assets that are expected to produce future cash flows. The shareholders have a claim on these cash flows. However, the firm's management has the power to determine whether these cash flows are paid directly to the shareholders as dividends or retained as a source of fund for further investment within the business. Hence, the dividend decision is of potentially great importance both to shareholders as well as the firm (Glen *et al.* 1995). The main objective of the financial management is to maximize shareholder's wealth (Horne and Wachowicz, 2001). The managers can maximize shareholders' wealth sometimes by paying dividends and sometimes by retaining earnings for further investment, depending on the growth prospects or available investment opportunities of the firm. If the firm has available investment opportunities with positive expected returns, then usually the firm retains the earnings for further investment because retained earnings is normally the cheaper and more dependable source of finance. On the contrary, if the firm has no suitable investment opportunities with positive expected returns then it is better to distribute the earnings to shareholders as dividends (Gordon, 1962, Walter, 1963). In practice, firms neither distribute all of their earnings to shareholders as dividends nor retain all of their earnings for further investment. Usually, the firms distribute a portion of earnings to the shareholders as dividends and retain the remainder for further investment or as a reserve to retire debt or to finance new investments. Generally, firms pay dividends once per year. Normally, dividend decision is taken on the basis of net operating income at the end of year. Dividend declaration always is given in percent on the face value.

Dividend policy determines how much of a company's earnings will be paid to shareholders and how much will be retained. The return on a shareholder's investment comprises the dividends received and the capital gain or loss over the period the shares are held. A dividend, therefore, is an important element of shareholders' returns. High dividends, however, imply low retained earnings which are an important source of funds for a company. Management must decide, therefore, what proportion of earnings to pay out as dividends and what proportion to retain.

Dividend policy constitutes a major financial decision for corporate business undertaking. It is obligatory for the firms to make a judgment as to whether they should distribute the profits to the shareholders or plough them back into the business. The choice would obviously hinge on the effect of the decision on shareholders' wealth. Regardless of conflicting options in extant literature on the impact of dividend on the valuation of firms' wealth of

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<sup>1</sup> Associate Professor, Department of Finance, Rajshahi University, Rajshahi-6205, E-mail : laxmi93@yahoo.com

shareholders, the broad consensus and evidence seems to be in the favor of relevance of dividends. In practice, dividends may matter, particularly in the context of differential tax treatment of dividends and capital gains. Very often dividends are taxed at a higher rate compared to capital gains. This implies that dividends may have negative consequences for investors<sup>2</sup>. Similarly, cost of raising funds is not insignificant and may well lead to lower payout, particularly when positive net present value projects are available. Apart from flotation costs, information asymmetry between managers and outside investors may also have implications for dividend policy. According to Myers and Majluf (1984), in the presence of information asymmetry and flotation costs, investment decisions made by managers are subject to the pecking order of financing choices available. Managers prefer retained earnings to debt and debt to equity flotation to finance the available projects.

To summarize, several theories have been proposed in explaining why companies pay dividends<sup>3</sup>. While many earlier studies point out the tax- preference theory, more recent studies emphasize signaling and agency cost rationale of dividend payments. However, the dividend puzzle remains unresolved and the words of Fischer Black (Black 1976, p. 5) may well apply in today's context: "The harder we look at the dividend picture, the more it seems like a puzzle, with pieces that just don't fit together".

One of the striking aspects that have been noticed in recent periods is the lower dividend paid by corporate firms in the US. Fama and French (2001) analyze the issue of lower dividends paid by corporate firms over the period 1973-1999 and the factors responsible for such a decline. They attribute the decline to changing firm characteristics e.g., size, earnings and growth.

However, it is to be seen whether the change towards lower dividends is a permanent feature or a reversal. A decline in dividends, according to Fama and French (2001), could be due to lower transaction costs, improved corporate governance mechanisms, and the increased preference towards capital gains.

In context of capital market in Bangladesh, it is still not clear as to what the dividend payment pattern of corporate firms in Bangladesh. This study attempts to identify the dividend policy practices by the corporate firms of Bangladesh by analyzing the trends and growth of the dividends and to find out whether there is any relationship between the trends of dividend and the share prices of the listed corporate firms of the DSE over the long run.

### **Objectives of the Study**

The general objective of the study is analyzing the trends of the dividend payment practices by the corporate firms of Bangladesh. However, the specific objectives are:

1. To review and analyze the growth trend in the dividend payment pattern of listed corporate firms of Bangladesh in the DSE.
2. To examine whether there exists any relationship between the dividend trends with the growth trends of share price over the last fifteen years in the DSE.

### **Data and Methodology**

**Sources and Nature of Data:** Dividend payment pattern of all companies that are listed for trading on the DSE during the period 2000-2014 are considered for analysis. For the purpose of this study, only final cash dividends and stock dividends are considered and right share and stock repurchases are not considered. Along with the dividend, this study also considered the average price of the dividend declared companies during the period 2000-2014 in an attempt to find the relationship between them.

In this study secondary data are used. The secondary data are collected from different Annual Reports of the companies, Bangladesh Securities and Exchange Commission's (BSEC) Annual Reports and the BSEC Quarterly Review, the DSE's Annual Reports and the DSE Monthly Review, closing quotation register and database archives

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<sup>2</sup>Black notes that in the presence of taxes, investors "prefer smaller dividends or no dividends at all" (1976)

<sup>a</sup> Associate Professor, Department of Finance, University of Rajshahi.

<sup>3</sup> Baker, Powell and Veit survey different streams of research work on dividends (2002).

of the DSE website. The daily quotation published by the DSE and investment journals (such as the Share Bazar) have also been used for collection of data.

**Data and Sample Design:** Primarily, the DSE listed 263 companies as on June 2014<sup>4</sup> are taken into account. Investment companies (41 mutual funds) are excluded because these are the portfolios of the DSE listed securities. Financial sectors including Banks (30), Financial Institutions (23) and Insurance companies (46) are then excluded from the sample because of their differential accounting system. Companies with missing data points are also excluded from the sample. The companies or particular years for certain companies are excluded from the sample where massively pushing up or pulling down the average tendency of any particular variable. Finally, this study purposively took 92 companies which declared and paid only cash dividend and only bonus dividend at least five years over the sample period of 2000-2014.

The final sample consists of 92 DSE listed non-financial companies form fifteen sectors. (Please see Appendix 1 and 2).

**Techniques of Data Analysis:** To analyze the trends of dividend payment pattern, number of companies paying dividend as percentage of total firms, average dividend paid, dividend per share, payout ratio, and dividend yield are computed for the period from 2000 to 2014. Dividend per share (DPS) is calculated as

$$DPS_{j,t} = \frac{Dividend_{j,t}}{EQCap_{j,t}} \quad (1)$$

Where,  $DPS_{j,t}$  refers to dividend per share for company j in year t;  $Dividend_{j,t}$  refers to amount of dividend paid by company j in year t; and  $EQCap_{j,t}$  refers to paid-up equity capital for firm j in year t.

Equity capital is employed instead of the usual number of outstanding shares in the denominator as it facilitates comparison of Taka dividend paid per share by removing the impact of different face or par values.

Dividend payout ratio (DPR) is computed as

$$DPR_{j,t} = \frac{Dividend_{j,t}}{EAT_{j,t}} \quad (2)$$

Where,  $DPR_{j,t}$  is dividend payout ratio,  $Dividend_{j,t}$  refers to amount of dividend paid by company j in year t; and  $EAT_{j,t}$  refers to net profit or profit after tax for firm j in year t.

Dividend Yield (DY) is computed as

$$DY_{j,t} = \frac{DPS_{j,t}}{Price_{j,t-1}} \quad (3)$$

Where,  $DY_{j,t}$  refers to dividend yield for firm j in year t,  $DPS_{j,t}$  refers to dividend per share for firm j in year t, and Price, t-1 is closing price of previous year for firm j.

**Measure of Growth:** The word growth means an increase. In other words, it may be termed as the process of growing. Oxford Advanced Learner's Dictionary of Current English defines it as: "An increase in economic activity, profit etc."<sup>5</sup> The study assumes the term as an increase in some important variables such as public issue of listed securities, market capitalization, turnover of shares and debentures etc. In the periphery of the study, to estimate the increase in different selected variables, it is decided to use the following variants of growth rates keeping in view the nature of the data available and their suitability.

**Simple Growth Rate (SGR):** It simply gives the percentage increase over the previous year. The following equation represents this rate:

<sup>4</sup>DSE Monthly Review, June 2014, p.10.

<sup>5</sup> Hornby, *op.cit.*, p. 527.

$$SGR = \frac{Y_t - Y_{t-1}}{Y_{t-1}} \quad (4)$$

Where,

SGR = Simple Growth Rate,  
 $Y_t$  = Values of the variable Y in year t,  
 $Y_{t-1}$  = Value of the variable Y in previous year  
 t = Considered year  
 t-1 = Previous year of the considered year.

**Compound Growth Rate (CGR):** It indicates changes for a given period on the basis of the initial year and the terminal year values. The equation may be expressed as:

$$CGR = \left[ \left( \frac{Y_1}{Y_0} \right)^{1/t} - 1 \right] 100 \quad (5)$$

Where,

CGR = Compound Growth Rate,  
 $Y_1$  = Value of the variable Y at the terminal year,  
 $Y_0$  = Value of the variable Y at the initial year,  
 t = Difference of year between the terminal year and the initial year.

**Trend Growth Rate (TGR):** To observe the general performance of two groups of variables more meaningfully and objectively it is essential to compare their growth patterns over the period rather than on a year to year basis. Recognizing the above, Birla Institute of Scientific Research (BISR) observes that the best measure available for such an exercise is the compound growth rates which are least affected by the distortions brought about by the practice of window dressing indulged by the banks on the eve of releasing their balance sheets. In the same direction Stockton and Clark (1971) argue that, "if it is desired to compare the growth of two series, the best comparison can be made between the trends rather than between the two series themselves." To avoid the problem, Mason (1978) states more specifically that a semi-logarithmic trend is appropriate when the time series data is considered to be increasing or decreasing at somewhat constant rate.<sup>6</sup> BISR<sup>7</sup> Bhuyan and Akhtar uddin (1989), Chawla (1987) etc. applied the Ordinary Least Square (OLS) method to fit the semi-logarithmic trend equation. The form of the semi-logarithmic trend equation is:

$$\log Y = A + BX \quad (6)$$

Where  
 Y = Dependent variable i.e., Dividend.  
 A = Constant or intercept of the trend line i.e., the value of Y at the origin.  
 B = Estimated trend coefficient i.e., the slope of the trend.  
 X = Time Trend

From the value of the slope (i.e., the coefficient of the trend denoted by 'B') the rate of increase for the trend could be determined. Hence, the following equation represents the growth rate:

$$TGR = [\text{antilog}(B) - 1]100 \quad (7)$$

This growth rate is known as a semi-logarithmic least square trend growth rate or simply Trend Growth Rate (TGR). It is also a compound growth rate. But unlike the compound growth rate (mentioned earlier) it is calculated on the basis of the value of a variable for all the years of the time series. Therefore, it is considered to be a better estimate.<sup>8</sup> Then the test of significance is to be applied for finding out whether the estimated growth rate is significantly different from zero, at five percent or ten percent level of significance.

<sup>6</sup> Robert D. Mason, *Programmed Learning Aid for Business and Economic Statistics*, (Homewood Illinois: Learning Systems Company, 1978), p. 139.

<sup>7</sup> BISR, *op.cit.*, p. 52.

<sup>8</sup> Ibid.

**Regression Analysis:** There are one independent variables being used in this study and that variable is taken sometimes yearly cash dividend and sometimes bonus dividend. To find the TGR we used time series data and to find the relationship between price and dividend we used panel data. It contains information of DSE listed corporate firms (non-financial sector companies). Therefore, unbalanced panel estimation techniques are used in this study. Firstly, we checked stationary of each variable because major problem of time series data may be non-stationary. In this study to test stationary of each variable, we used “Phillips-Perron Fisher” Unit Root Test.

Secondly, we checked residuals of panel data that are normally distributed or not. To test this, we used “Skewness-Kurtosis” and “Jarque-Bera” model. The “Skewness-Kurtosis” and “Jarque-Bera” model are used to check normality. (Please see Table 6 and Table 9)

As in all cases we used one explanatory variable so, there is no possibility “heteroscedasticity” and “multicollinearity” problem in our model. At the same time by testing stationary we reduced the chance of having “auto-correlation”.

### **Empirical Results and Discussion**

**Dividend Payment Performance:** Generally, investors invest their money in the capital market with a hope that it will generate more money into their funds. Usually, they do it in the forms of capital gain, dividend, and bonus or right shares from the capital market. These are the most fundamentals to all investors. Many companies pay out dividend regularly to shareholders from their earnings and send a clear, powerful message about their future prospects and performance. A company’s willingness and ability to pay steady dividends over time - and its power to increase them – provide good clues about its fundamentals.

In the DSE there are 263 listed companies in 2014. There has been a rising trend of the listed companies in the DSE over the years. The number rose from 44 to 263 between 1983 and 2014. The following table 1 gives a clear picture regarding the dividend payment over the years in the DSE.

**Table 1: Dividend Payment Performance of Listed Companies in the DSE**

Year	Total Number of Listed Companies	No. of Companies Declared Dividend	% of Total Listed Companies Paying Dividend	No. of Companies Declared No Dividend	% of Total Listed Companies Paying No Dividend	Dividend Paid Minimum (in %)	Dividend Paid Maximum (in %)
2000-01	227	123	54.19%	104	45.81%	5	170
2001-02	238	132	55.46%	106	44.54%	5	175
2002-03	241	149	61.83%	92	38.17%	2	180
2003-04	248	142	57.26%	106	42.74%	2	200
2004-05	239	120	50.21%	119	49.79%	2	210
2005-06	256	146	57.03%	110	42.97%	3	210
2006-07	259	158	61.00%	101	39.00%	2	240
2007-08	271	163	60.15%	108	39.85%	3	395
2008-09	282	172	60.99%	110	39.01%	2.5	240
2009-10	243	195	80.25%	48	19.75%	2	750
2010-11	232	196	84.48%	36	15.52%	5	600
2011-12	238	218	91.60%	20	8.40%	5	600
2012-13	251	205	81.67%	46	18.33%	5	700
2013-14	263	223	85.77%	37	14.23%	5	600
<b>Average</b>		<b>167.28</b>	<b>67.20%</b>	<b>81.64</b>	<b>32.79%</b>	<b>3.50</b>	<b>376.42</b>

*Source: Compiled from various issues of Stock Exchange Monthly Review and Fact Book, DSE*

From the Table 1, it appears that the total number of listed companies in the DSE were 263 in 2014 and out of those 223 companies were paying dividend and the rest could not at all paying dividend i.e., on an average 67.20% companies were paying dividend regularly. The table further indicates that out of 167 companies, on an average they were paying minimum 3.5% and maximum 376.42% dividend. So, it can be said that most of the listed companies of the DSE, have paid sound dividend to its large number of shareholders.

Table 2: Trends in Cash Dividends of Non-Financial Companies in the DSE during 2000-2014

Year	No. of Firms	Minimum Cash Dividend (%)	Maximum Cash Dividend (%)	Average Cash Dividend (%)	Standard Deviation (%)
2000	33	5	160	34.79	33.34
2001	35	5	125	32.97	30.27
2002	37	5	150	32.89	33.63
2003	33	5	200	37.85	41.08
2004	36	5	125	33.00	31.43
2005	41	5	120	28.88	27.36
2006	43	5	235	35.86	46.94
2007	43	5	220	37.44	43.09
2008	50	5	240	40.80	52.71
2009	52	4	300	46.13	61.11
2010	53	5	600	66.23	114.11
2011	54	5	420	54.13	85.00
2012	54	5	500	56.37	88.02
2013	54	5	620	75.61	122.63
2014	54	5	550	82.81	131.64

*Source: Compiled from various issues of Stock Exchange Monthly Review and Working Datasheets.*

From the Table 2, it observes that only 54 companies out of total number of listed non-financial companies in the DSE were paying cash dividend in between 2000 to 2014 whereas in 2000 the number of companies were 33. So, in the last 15 years the number of companies which are paying cash dividend have increased but the rate of increasing is not significant or satisfactory label. But from the above table it shows that in 2000 the average cash dividend was 34.79% with standard deviation 33.34% and the minimum cash dividend paid 5% and maximum was 160%. In 2014 the average cash dividend was 82.81% and the maximum dividend was 550%. So, it indicates that although the number of cash dividend paying companies have not increased significantly over the study period, however the percentage of average cash dividend has increased significantly.

Table 3: Trend in Dividend Payments during 2000-2014

Year	Paid Dividend		Not Paid Dividend		Total Number of Firms
	No.	%	No.	%	
2000	33	36.67	57	63.33	90
2001	35	36.46	61	63.54	96
2002	37	35.24	68	64.76	105
2003	33	29.46	79	70.54	112
2004	36	31.03	80	68.97	116
2005	41	34.17	79	65.83	120

2006	43	34.96	80	65.04	123
2007	43	31.85	92	68.15	135
2008	50	33.78	98	66.22	148
2009	52	33.33	104	66.67	156
2010	53	33.13	107	66.88	160
2011	54	30.34	124	69.66	178
2012	54	29.51	129	70.49	183
2013	54	29.51	129	70.49	183
2014	54	29.51	129	70.49	183
Average	44.80	32.60	94.40	67.40	

*Source: Compiled from various issues of Stock Exchange Monthly Review and Working Datasheets.*

From the Table: 3, we can see that only 32.6% of the total number of non-financial companies listed in the DSE paid cash dividend and 67.4% did not pay any cash dividend. However, 67.20% of total companies listed in the DSE paid dividend either in cash or in bonus.

From the Table 3 and 4, it appears that the total number of non-financial listed companies in the DSE were 90 in 2000 and out of those 33 companies were paying cash dividend and the rest could not at all paying cash dividend whereas in 2014 out of 183 non-financial listed companies only 54 companies were paying cash dividend i.e., 29.21% companies were paying dividend regularly. It is very interesting to note that out of 32.6% companies, i.e., out of 44.8 companies only 4 companies (on the average 9%) were paying dividend less than 10%, 31% companies were paying 10-20%, 19% companies were paying 20-30% and 24% companies were paying more than 50% cash dividend. This indicates that 50% of non-financial listed companies in the DSE are paying 10 to 30% cash dividend among the shareholders, which is a good sign due to its smart dividend payment ratio for the DSE. If we compare the dividend payment of the listed non-financial companies with those of savings instruments which are almost risk free investment, it can be said that investment in non-financial companies are enough profitable for the general investors. But the number of dividend paying companies are too low i.e., only 32.6% which seems a little bit risky for the investors.

**Table 4: Distribution of Dividend Pay-out Ratio of Listed Corporate Firms in the DSE**

Dividend Pay-out	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	Average Total No. of Companies	% of Dividend Paid
<10%	3	2	5	4	7	9	6	4	4	6	3	2	2	1	2	4	9%
10-20%	10	12	12	9	8	9	14	13	18	15	17	19	19	20	15	14	31%
20-30%	5	7	7	6	7	8	10	13	9	10	9	9	9	9	12	8.67	19%
30-40%	6	6	3	3	3	6	4	2	6	6	8	9	6	4	6	5.2	12%
40-50%	2	2	2	3	2	2	0	1	2	3	4	2	2	2	1	2	4%
>50%	7	6	8	8	9	7	9	10	11	12	12	13	16	18	18	11	24%
Total	33	35	37	33	36	41	43	43	50	52	53	54	54	54	54	44.87	100%

*Source: Compiled from various issues of Stock Exchange Monthly Review Working Datasheets*

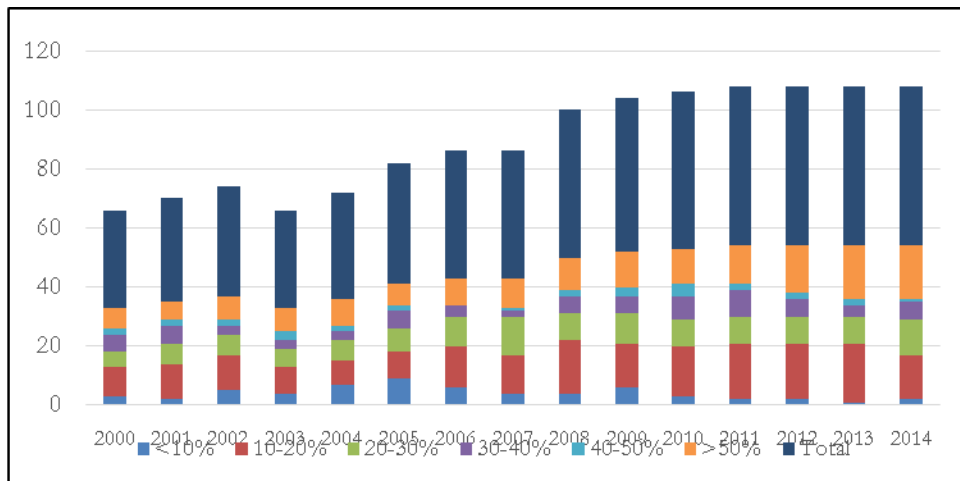


Figure 1: Distribution of Dividend Pay-out Ratio

Source: Table: 4

**Industry Wise Growth Analysis of Cash Dividend Paying Companies:** The following section represents the analysis of industry wise growth trends of cash dividend paying companies during the study period 2000-2014. During 2000-2014 period, minimum 33 companies declared and paid cash dividend whereas maximum 54 companies declared and paid cash dividend. These 54 DSE listed non-financial companies classified as fifteen sectors. However, for our analysis all these 54 non-financial companies are classified into nine sectors as cement, engineering, food and allied, fuel and power, textile, pharmaceuticals and chemicals, services and real estate, tannery, and miscellaneous sectors.

Table 5: Industry Wise Growth Analysis of Cash Dividend and Stock Price of Companies

Name of the Industry	CGR of Cash Dividend	TGR of Cash Dividend	CGR of Stock Price	TGR of Stock Price
Cement Industry	9.36	9.12	11.24	47.30
Engineering Industry	-0.32	-2.60	7.45	14.52
Food and Allied Industry	9.86	33.39	23.09	54.95
Fuel and Power Industry	5.73	9.12	7.45	12.00
Pharmaceuticals and Chemicals Industry	9.38	18.88	14.24	41.25
Services and Real Estate Industry	1.61	18.88	10.22	47.64
Tannery Industry	5.32	19.02	19.06	52.21
Textile Industry	3.21	6.07	19.22	49.00
Miscellaneous Industry	10.70	31.04	24.23	72.70
<b>Average</b>	<b>6.09</b>	<b>15.88</b>	<b>15.13</b>	<b>43.51</b>

After analyzing the industry wise growth trends (Table 5) we can see industry trends indicate that companies in the Food and Allied, Textile, and Miscellaneous industry are most efficient in increasing stock values and their Compound Growth Rates (CGRs) are 23.09%, 19.22% and 24.23% respectively. And in case of cash dividend paying companies, the stock price growth rate of Fuel and Power industry is 7.45% which is the minimum CGR among these industries. Average CGR of cash dividend is 6.09% whereas cash dividend paying companies' CGR of stock price is 15.13% and it seems to be healthy. So, it is evident from the above analysis that over the long run cash dividend paying companies' dividend's trend growth rate (TGR) is 15.88% and in effect of that the trend growth rate (TGR) of stock price is found 43.51% which means over the study period price of the cash dividend paying companies' stock increased on an average by 43.51%.



## Descriptive Statistics of Cash Dividend and Average Stock Price

Table 6: Descriptive Statistics of Cash Dividend and Price of Cash Dividend Paying Companies.

	DIVIDEND	PRICE
Mean	47.67385	188.9089
Median	22	92.88015
Maximum	1000	2644.231
Minimum	0	2.016807
Std. Dev.	83.09016	283.3334
Skewness	4.926817	3.823816
Kurtosis	38.33377	24.29677
Jarque-Bera	39021.52	14422.42
Probability	0	0
Sum	33181	127702.4
Sum Sq. Dev.	4798262	54187522
Observations	696	676

## Regression Equation of Cash Dividend and Average Stock Price

After analyzing the industry wise growth trends we have found a positive relationship between dividend and price. The following table shows the regression equation of cash dividend and average stock price of the overall market.

Table 7: Regression Equation of Cash Dividend and Average Stock Price of overall the Market.

Dependent Variable: LOG (PRICE)				
Method: Panel Least Squares				
Sample: 2000 - 2014				
Periods included: 15				
Cross-sections included: 54				
Total panel (unbalanced)				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
Dividend	1.665079	0.113497	14.67069	0
C	108.1779	11.07318	9.769367	0
R-squared	0.243684	Mean dependent var		190.2564
Adjusted R-squared	0.242552	S.D. dependent var		284.2042
S.E. of regression	247.3471	Akaike info criterion		13.86244
Sum squared residual	40868629	Schwarz criterion		13.8759
Log likelihood	-4641.918	Hannan-Quinn criterion		13.86765
F-statistic	215.2292	Durbin-Watson stat		1.006917
Prob (F-statistic)	0			

In Table 7 a regression equation is made where dividend is taken as the explanatory variable and price as explained variable. Here the value of coefficient (B) is 1.665079, which refers to a positive relationship between them. The probability value of t-statistics is 0.00 which means there is statistically significant relationship between them. As the value of Durbin-Watson is greater than the value of R-squared value, the relationship is not spurious. The goodness of fit of this model is 0.243684, which means price can be explained 24.37 percent by dividend. So the regression equation is  $LOG (PRICE) = 108.1779 + 1.665079 LOG (DIVIDEND)$

**Industry Wise Growth Analysis of Bonus Dividend Paying Company:** The following section represents the analysis of industry wise growth trends of bonus dividend paying companies during the study period 2000-2014. During 2000-2014 period, 38 companies declared and paid only bonus dividend at least five years, whereas maximum 84 companies declared and paid bonus dividend in 2012 and only four companies declared and paid bonus dividend in 2000. DSE listed non-financial companies are classified as fifteen sectors. However, for our analysis all these 38 non-financial sector companies are classified into nine sectors as engineering, food and allied, fuel and power, textile, pharmaceuticals and chemicals, services and real estate, tannery, and miscellaneous sectors.

Table 8: Industry Wise Growth Analysis of Bonus Dividend and Stock Price of Companies

Name of the Industry	CGR of Bonus Dividend	TGR of Bonus Dividend	CGR of Stock Price	TGR of Stock Price
Engineering Industry	-4.50	-15.50	6.20	20.40
Food and Allied Industry	20.09	45.37	16.89	46.53
Fuel and Power Industry	-7.41	-17.30	8.26	31.39
IT Industry	-2.48	-8.10	2.92	10.30
Pharmaceuticals and Chemicals Industry	8.82	6.07	0.74	14.90
Textile Industry	-0.73	-6.49	14.59	41.71
Travel and Leisure Industry	-4.31	-2.93	-29.26	-50.48
Miscellaneous Industry	-6.11	-6.66	5.05	19.37
<b>Average</b>	<b>0.42</b>	<b>-0.69</b>	<b>3.17</b>	<b>16.77</b>

From the above Table 8, we found the companies which are paying bonus dividend in Food and Allied, Textile, and Fuel and Power industry are most efficient in maximizing stock value and their Compound Growth Rates (CGRs) are 16.89%, 14.59% and 8.26%, respectively. And among the bonus dividend paying companies, Travel and Leisure industry's stock price growth is -29.26% which is the minimum CGR among these industries. Average CGR and TGR of bonus dividend is only 0.42% and -0.69, respectively and in contrast bonus dividend paying companies' CGR and TGR of stock price is 3.17% and 16.77%, respectively which seems to be poor because in the economy of Bangladesh the rate of inflation and risk free return (T-bill interest rate) both are quite greater than that.

### Descriptive Statistics of Bonus Dividend and Average Stock Price

Table 9: Descriptive Statistics of Bonus Dividend and Price of Bonus Dividend Paying Companies.

	DIVIDEND	PRICE
Mean	15.31647	52.58549
Median	12.5	31.65
Maximum	70	516.3
Minimum	2	3.1
Std. Dev.	9.718667	61.06511
Skewness	2.242464	3.166276
Kurtosis	10.23266	17.31189
Jarque-Bera	760.4733	4337.325
Probability	0	0
Sum	3859.75	22348.83
Sum Sq. Dev.	23707.57	1581074
Observations	252	425

### Regression Equation of Bonus Dividend and Average Stock Price

After analyzing the industry wise growth trends of bonus dividend and stock price we have found a positive relationship between dividend and price. The following table reports the regression results of bonus dividend and average stock price of overall market.

Table 10: Regression Equation of Bonus Dividend and Average Stock Price of overall the Market.

Dependent Variable: Log(Price)				
Method: Panel Least Squares				
Sample: 2000 - 2014				
Periods included: 15				
Cross-sections included: 38				
Total panel (unbalanced)				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
LOG(DIVIDEND)	0.855755	0.079275	10.79472	0
C	1.608708	0.208225	7.72581	0
R-squared	0.337242	Mean dependent var		3.802432
Adjusted R-squared	0.334348	S.D. dependent var		0.845207
S.E. of regression	0.689584	Akaike info criterion		2.103163
Sum squared residual	108.8954	Schwarz criterion		2.132967
Log likelihood	-240.9153	Hannan-Quinn criterion		2.115184
F-statistic	116.5259	Durbin-Watson stat		0.827949
Prob (F-statistic)	0			

In Table 10, a regression equation is made where bonus dividend is taken as the independent variable and price as dependent variable. Here the value of coefficient (B) is 0.855755, which refers to a positive relationship between them. The probability value of t-statistics is 0.00 which means there is statistically significant relationship between them. As the value of Durbin-Watson is greater than the value of R-squared value, the relationship is real. The goodness of fit of this model is 0.337242, which means price can be explained 33.43 percent by dividend. So the regression equation is-  $[LOG(PRICE) = 1.6087708 + 0.855755 LOG(DIVIDEND)]$

### Conclusion

This study has documented the trend of industry-wise price movements for both cash and bonus dividend paying companies. Results from the study clearly indicates that the DSE listed corporate firms which are paying cash dividends are able to maximize their share values to a greater extent compared to companies which are paying bonus dividends. In case of the companies which are paying cash dividend in Food and Allied, Textile and Miscellaneous industry are most efficient in increasing stock value. These industries have Compound Growth Rates (CGRs) of 23.09%, 19.22% and 24.23%, respectively. The cash dividend paying companies of Fuel and Power industry experienced a stock price growth of 7.45% which is the minimum CGR among the industries considered in this study. The average CGR of cash dividend paying companies is 15.13% and it seems to be healthy. In contrast, the companies which are paying bonus dividend in Food and Allied, Textile and Fuel and Power industry are most efficient in maximizing stock value and their CGRs are 16.89%, 14.59% and 8.26%, respectively. The bonus dividend paying companies of the Travel and Leisure industry experienced the stock price growth of -29.26%, which is the minimum CGR among the industries considered in this study. The average CGR of bonus dividend paying companies is only 3.17% which seems to be poor compared to the rate of inflation and risk-free return (T-bill interest rate). This means that investors who invested in the bonus dividend paying companies will prefer to invest in risk free assets.

The findings of this study may prove useful for the DSE corporate firms in redesigning their dividend policies. Actually dividend policy of corporate firms determine how much of a company's earnings will be paid to shareholders and how much will be retained. But in case of the DSE our evidences show most of the firms declared bonus stock dividend instead of cash dividend which dilutes the earning per share and net asset value of the firm. Our evidence confirms that DSE investors prefer stable cash dividends which resolves uncertainty and acts like a

regular income. So, management of the DSE corporate firms may put more emphasis on paying cash dividends than paying bonus dividends. The results may also be useful to the regulators in understanding the investors' behavior with regard to dividend policies. Bangladesh Securities Exchange Commission (BSEC) should take adequate measures to increase the number of firms to declare dividends regularly based on their financial performances. Regular cash dividend payments will enable our capital market to attract investors and to make the capital market investments more secured. Finally, this study also provides an opportunity in testing the applicability of dividend theories in the context of capital markets in Bangladesh.

## References

- Bhuyan, M.S.R. and Akhtaruddin, M. (1989), "Productivity in Uttara and Pubali Banks during Nationalised and Denationalised Periods: A Case Study of Commercial Bank in Bangladesh", *Bank Parikrama*, Vol. XIV, No. 3 and 4, pp. 100-125.
- Birla Institute of Scientific Research (1981), *Banks Since Nationalization*, Allied Publishers Private Limited, New Delhi.
- Black, F (1976). "The dividend puzzle". *Journal of Portfolio Management*, Vol. 2, No. 2, pp. 5-8.
- Chawla, A.S. (1987), *Nationalization and Growth of Indian Banking*, Deep and Deep Publications, New Delhi.
- Fama, E and French, K (2001), "Disappearing dividends: Changing firm characteristics or lower propensity to pay?", *Journal of Financial Economics*, Vol. 60, No. 1, pp. 3-43.
- Glen, D.J., Yannis, K., Miller, R.R. and Shah. S. (1995), "Dividend Policy and behavior in emerging markets", Discussion Paper No. 26, *International Finance Corporation*.
- Gordon, M. J. (1962), "The savings, investment and valuation of the corporation", *Review of Economics and Statistics*, Vol. 44, No. 1, pp.37-51
- Mason, R.D. (1978), *Programmed Learning Aid for Business and Economic Statistics*, Learning Systems Company, Homewood Illinois.
- Myers, S and Majluf, S (1984), "Corporate financing and investment decisions when firms have information that investors do not have", *Journal of Financial Economics* Vol. 12, No. 2, pp. 187-221.
- Stockton, J.R. and Charles T. C. (1971), *Introduction to Business and Economic Statistics*, South Western Publishing Co., Cincinnati, Ohio.
- Van Horne, J. C., and J. Wachowicz (2001), *Fundamental of Financial Management*, Prentice -Hall, Upper Saddle River, N.J.
- Walter, J.E. (1963) "Dividend policy; its' influence on the value of the enterprise". *Journal of Finance*, Vol.18, No.2, pp. 280-291.

## Appendices

Appendix 1: Listed Companies in DSE Main Board as on June, 2014

Listed Companies Excluding Mutual Funds	263
Financial Sector Companies	99
Non-Financial Companies	163
Sample Included Companies	92

Appendix 2: Sector Wise Sample Distributions

Name of Sector	Number of Listed Company	Sample Included Only Cash Dividend Paid Company	Sample Included Only Bonus Dividend Paid Company
Cement	07	03	00
Ceramic	05	01	01
Engineering	25	07	05
Food and Allied	18	04	4
Fuel and Power	16	09	3

Jute and Textile	37	08	7
IT	06	00	5
Pharmaceuticals & Chemicals	26	12	4
Service & Real-estate	03	02	1
Tannery	05	03	1
Telecommunication	02	01	1
Travel & Leisure	03	00	2
Miscellaneous	10	04	4
		54	38
<b>Total</b>	<b>163</b>		<b>92</b>

Source: DSE Data archive June 2014 and compiled by the author.

### Appendix 3: PP Fisher Unit Root Test

Panel A: Cash dividend of Cash Dividend Paying Companies			
Sample: 2000 2014			
Total number of observations: 560			
Cross-sections included: 53 (1 dropped)			
Method	Statistic	p-value	
PP - Fisher Chi-square	437.563	0	
PP - Choi Z-stat	-12.9254	0	

Panel B: Price of Cash Dividend Paying Companies			
Sample: 2000 2014			
Total number of observations: 529			
Cross-sections included: 50 (4 dropped)			
Method	Statistic	p-value	
PP - Fisher Chi-square	435.921	0	
PP - Choi Z-stat	-13.4732	0	

Panel C: Bonus Dividend of Bonus Dividend Paying Companies			
Sample: 2000 2014			
Total number of observations: 175			
Cross-sections included: 33 (5 dropped)			
Method	Statistic	p-value	
PP - Fisher Chi-square	130.424	0	
PP - Choi Z-stat	-3.34155	0.0004	

Panel D: Price of Bonus Dividend Paying Companies			
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Sample: 2000 2014				
Total number of observations: 387				
Cross-sections included: 38				
Method	Statistic	p-value		
PP - Fisher Chi-square	120.801	0.0008		
PP - Choi Z-stat	-2.33366	0.0098		

Notes.

1. Probabilities for Fisher tests are computed using an asymptotic Chi-square distribution. All other tests assume asymptotic normality.
2. Null Hypothesis: Unit root (individual unit root process)