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Dividend Policy Practices in Corporate Firms of Bangladesh: Trends and Determinants

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Dividend Policy Practices in Corporate Firms of Bangladesh: Trends and Determinants

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CERTIFICATE

We have the pleasure to certify that the dissertation entitled **"Dividend Policy Practices in Corporate Firms of Bangladesh: Trends and Determinants"** is an original work which has been carried out by Md. Monimul Haque under our guidance and supervision. To the best of our knowledge, no part of the dissertation, in any form, has been submitted to any other institute or university for a degree or diploma, or any other similar purposes.

We also certify that we have gone through the drafts and final version of the dissertation and found it satisfactory for submission to the Institute of Bangladesh Studies, University of Rajshahi for award of the Degree of Doctor of Philosophy in Finance and Banking.

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DECLARATION

The dissertation entitled **"Dividend Policy Practices in Corporate Firms of Bangladesh: Trends and Determinants"** submitted to the Institute of Bangladesh Studies, University of Rajshahi for the award of the degree of Doctor of Philosophy in Finance and Banking is exclusively my own and original work.

Except where reference is made, this thesis contains no material published elsewhere or extracted in whole or in part from a thesis or report presented by me in this work. No other person's work has been used without due acknowledgement in the main text of the thesis.

This thesis has not been submitted for the award of any other degree or diploma in any other University or similar Institution.

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October, 2016

Abbreviations

AAR	: Average Abnormal Return
AG	: Absolute Growth
AGM	: Annual General Meeting
AR	: Actual Return
BSE	: Bombay Stock Exchange
BSEC	: Bangladesh Securities and Exchange Commission
CAR	: Cumulative Abnormal Return
CGR	: Compound Growth Rate
CSAR	: Cumulative Standardized Abnormal Return
DPR	: Dividend Payout Ratio
DPS	: Dividend Per Share
DSE	: Dhaka Stock Exchange
DSEX	: Dhaka Stock Exchange General Index
DY	: Dividend Yield
EPS	: Earning Per Share
FEM	: Fixed Effect Model
GMM	: Generalized Methods of Moment
IPOs	: Initial Public Offerings
LSDV	: Least Square Dummy Variable
MAAR	: Market Adjusted Average Abnormal Returns
MDR	: Mean Daily Return
NAVPs	: Net Asset Value Per Share
NYSE	: New York Stock Exchange
OLS	: Ordinary Least Square
REM	: Random Effects Model
ROE	: Return on Equity
SAR	: Standardized Abnormal Return
SD	: Standard Deviation
SGR	: Simple Growth Rate
TGR	: Trend Growth Rate

ABSTRACT

Many researchers worked on different capital markets of the world. But in the context of Bangladesh, a few empirical studies analyzed the dividend payment practices of corporate firms in connection with dividend announcement effects on security prices in the Dhaka Stock Exchange. The present study, therefore, examines the dividend policy practices of corporate firms of Bangladesh over the period 2000-2014 and attempts to explain the observed behavior by analyzing the trends and growth of dividend and also attempts to find the relationship with the trends and growth of the prices of the shares. This study also tries to identify the significant factors which are the prominent determinants of the dividend policy of the corporate firms and lastly attempts to identify the security prices reaction to the dividend announcement of corporate firms of Bangladesh in the Dhaka Stock Exchange Ltd.

The general objective of the study is analyzing the trends and determinants of the dividend policy culture and practices by the Bangladeshi corporate firms and subsequent reaction on the capital market. However, the specific objectives are: (1) to review and analyze the growth trend in the dividend payment pattern of Bangladeshi corporate firms and to examine whether there is any relationship exist between the dividend trends with the growth trends of market price of share; (2) to identify the significant factors which are the prominent determinants of the dividend policy of the corporate firms; (3) to identify the security prices reaction to the dividend announcement of corporate firms of Bangladesh in the Dhaka Stock Exchange Ltd.; and (4) to identify the problems and to

suggest measures for improving the dividend policy culture and practices of corporate firms of Bangladesh.

In order to solve this research problem in the capital market, the study employs content analysis and quantitative research methods and collects secondary data from the annual reports of relevant companies, different issues of monthly reviews of Dhaka Stock Exchange Limited.

Data collected from different sources are computed and analyzed by the researcher by applying Eviews 8 Software. Computer software MS Excel 13 is also used for detail statistical analysis. To make the data more meaningful, those were analyzed in tabular forms, percentages, mean, median, standard deviation, time series and in some other statistical forms according to their suitability and needs of the study. An event methodology is employed to measure security price reactions around the time of the event of dividend announcement. Thirty days (-30) before the announcement day were selected as the observation period whereas, thirty days (+30) after the announcement day were selected as the comparison period. To test for statistical significant security price movement around dividend announcement date, the Student T test was employed to measure the significance among the means of the samples, observation period, and comparison period.

In this study, we found that the number of firms paying dividend during the study period has shown an uptrend till 2014. 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 any dividend i.e., on an average 67.20% companies were paying dividend

regularly and out of 167 companies, on an average they were paying minimum 3.5% and maximum 376.42% dividend. We can also see that only 32.6% of the total numbers of non-financial companies listed in DSE paid cash dividend and 67.4% were not paid any cash dividend whereas 67.20% of total companies listed in DSE paid dividend in the form of either cash or bonus which indicates most of the non-financial firms listed in DSE preferred to declare bonus stock instead of cash dividend. The total number of non-financial listed companies in the DSE were 90 in 2000 and out of those 33 companies i.e., 36.67% were paying cash dividend whereas in 2014 out of 183 non-financial listed companies only 54 companies i.e., 29.51% were paying cash dividend. So, we observed that although the numbers of non-financial listed companies increased during the last fifteen years but percentage of the cash dividend paying companies decreased over the years which was not expected at all. But average cash dividend paid in 2000 was 34.79% whereas in 2014 average cash dividend paid was 82.81% which indicates that average cash dividend paid by the non-financial companies increased significantly over the years.

In this study, we have also observed the trend of price movement of industry wise for both cash dividend paying and bonus dividend paying companies. In case of the companies which are paying cash dividend in Food and Allied, Textile and Miscellaneous industry are most efficient in increasing stock values. Average CGR of cash dividend paying companies is 15.13% and it seems to be healthy enough. In contrast, the companies which are paying bonus share as dividend in Food and Allied, Textile and Fuel and Power industry are most efficient in maximizing stock values. Average CGR of bonus dividend paying companies is 3.17% and it 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.

This study also examines to what extent various determinants of dividend payout policy can explain the dividend decisions of DSE listed companies. For this purpose this research uses Multiple Regression Model in Eviews 8 software to examine the determinants of dividend policy in Bangladesh based on a sample of 54 companies which are paying cash dividend and listed on the DSE. The study aimed at establishing variables affecting dividend policies of the listed non-financial companies in Dhaka Stock Exchange. At the end, the findings of the study shows statistically significant and positive relationship among earnings per share (EPS), NAVPS, previous year dividend, size of the firm but found statistically insignificant relationship with return on equity (ROE) on dividend payment. Therefore, the major determinants of dividend policy of non-financial companies in Bangladesh are earnings per share, NAVPS, previous year dividend and size of the firm.

Dividend policy of a company has great impact on the share price of a company. Event study methodology is employed to measure the security price performance. Dividend announcement is an instrument, which reflects information about the company. In this analysis, we find that the market adjusted average abnormal returns attributed solely to the dividend announcement day which is statistically insignificant for both stock and cash dividends. Thus, it is evident that there are no differences in the impact of cash or stock dividend as far as the announcement day is concerned.

However, the significant negative returns for stock dividend prior to the announcement day indicate speculative nature of the investors' behavior. On the other hand, positive returns for stock dividends are reported for short run after the announcement.

The findings do not reject our null hypothesis and provide no strong evidence that stock price reacts significantly with dividend. It also does not reject our null hypothesis of zero abnormal return and provide no strong evidence that stock price reacts significantly on the announcement day of dividend. However, there are some evidence of positive return after the announcement of cash dividend and some negative return before and after the announcement of stock dividend but no significant change on the announcement day. This also indicates that market reacts slowly to the announcement information.

Since, the primary goal of companies' dividend policy is to pay benefits to the shareholders as a whole, so the regulatory body, the management of the companies listed in the DSE and the general investors connecting themselves in the capital market of our country should be very judicious for their respective involvement so as to maximize the interest of the concerned stakeholders and they should not keep themselves intriguingly poised with respect to their pervasion in the capital market of our country. With such a stand, BSEC should take adequate measures to increase the number of firms to declare dividend regularly based on their financial performances for the establishing our capital market into emerging and healthy and also to attract the investors towards the capital marker for secure investment.

Actually dividend policy of corporate firms determines how much of a company's earnings will be paid to shareholders and how much will be retained. But in our capital

market evidences show most of the firms declared bonus stock instead of cash dividend which causes dilute of earning per share and net asset value of the firm. Several explanations for investors preferring stable Taka dividends have been suggested and one of the major one is many investors may use dividends to cover living expenses, which are usually rather stable from year to year. So, management of the companies need to be very expeditions to declare cash dividend to ensure a sound grownup of their financial earmarks which intern contributes in strengthening a solid capital market in our country. Moreover, the interest of the general investors must not be kept far from the above discussion. They should be timely informed with proper information to take a suitable decision with regard to their financial involvement in the capital market of our country.

The study also shows that during the last 15 years non-financial corporate firm's growth trends of cash dividend were more or less sound and smooth. After analyzing the industry wise growth trends we have found a positive relationship between dividend and price. Most interestingly it is evident from the study that general investors can have prior idea about the prices of shares of companies which are declaring either cash or stock dividend. So, the investors could apply the findings of this study which is a regression model based on the last fifteen year's cash dividend and bonus dividend declared by the corporate firms and the market average price of the respective firms.

In this study, we have observed the trend of price movement of industry wise for both cash dividend paying and bonus dividend paying companies. Result from our study is clear in the sense that the companies which are paying cash dividend are able to maximize

their share values in a greater extent; on the other hand, companies which are paying bonus dividend are able to maximize their share values in very few extent.

The study aimed at establishing variables affecting dividend policies listed non-financial companies in Dhaka Stock Exchange. The results show that statistically significant and positive relationship exist among earnings per share, NAVPS, previous year dividend, size of the firm. But found statistically insignificant relationship with return on equity on dividend payment. Therefore, the major determinants of dividend policy of non-financial companies in Bangladesh are EPS, NAVPS, previous year dividend and size of the firm.

To evaluate the impact of dividend payment on security price our findings suggest that the investors in general show more positive attitude towards cash dividends rather than stock dividend. Again, this fact may indicate that investor perceive cash dividend as good and positive sign and they gain their faith on the management of the companies. So, in this study it can be concluded that the investors should prefer cash dividend rather than stock dividend because in the long run share price generally be maximized if companies pay cash dividend but it generally be reverse or lower if companies pay bonus share as dividend. In addition it has been observed that as the record day for entitlement of the dividend approaches nearer, the investors will have the opportunity to realize the cash dividend within very shortest possible time. That is why from our findings we would like to conclude that record day plays an important indicator for realizing the abnormal returns for cash dividend paying companies indeed.

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I

Introduction

Chapter One

Introduction

I. Prelude

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 to both shareholders and the firm (Glen *et al.* 1995).[1] The main objective of the financial management is to maximize shareholders wealth (Van Horne and Wachowicz, 2001)[2]. The managers can maximize shareholders wealth sometimes by paying dividends and sometimes by retaining earnings for further investment. It depends on the growth prospects or available investment opportunities of the firm. If the firm is a growing firm or if the firm has available investment opportunities with positive expected returns, then usually the firm retains the earnings for further investment because it is normally the cheaper and more dependable source of finance. If the firm is a declining firm, i.e., the firm has no suitable investment opportunities with positive expected returns then it is

[1] Derek Jack Glen, et al., "Dividend Policy and Behavior in Emerging Markets", Discussion Paper No. 26, *International Finance Corporation*, (1995).

[2] James C. Van Horne, and John M. Wachowicz, *Fundamental of Financial Management*, (Upper Saddle River, N. J.: Prentice Hall, 11 ed., 2001).

better to distribute earnings to shareholders as dividends (Gordon, 1962[3]; and Walter, 1963[4]). 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.

A corporation can use its earnings to pay dividend to its stockholders or it can use the funds for other purpose, such as retirement of debt or financing new investments. Generally, firms pay dividends once per year. Normally, dividends decision is to be taken on the basis of net operating income at the end of year. Dividend declaration always is given in percent on the face value not on the market 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 during 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.

[3] M. J. Gordon, "The Savings, Investment and Valuation of the Corporation", *Review of Economics and Statistics* 45 (1962), pp. 37-51.

[4] J. E. Walter, "Dividend Policy: It's Influence on the Value of the Enterprise", *Journal of Finance* 18 (1963), pp. 280-291.

Dividend policy constitutes a major financial decision for corporate business undertaking. It is obligatory for the firms to take 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 available literature on the impact of dividend on the valuation of firms' wealth of shareholders, the broad consensus and evidence seems to be in the favor of relevance of dividends.

From the practitioners' viewpoint, dividend policy[5] of a firm has implications for investors, managers and lenders and other stakeholders. For investors, dividends – whether declared today or accumulated and provided at a later date – are not only a means of regular income[6], but also an important input in valuation of a firm[7]. Similarly, a managers' flexibility to invest in projects is also dependent on the amount of dividend that they can offer to shareholders as more dividends may mean fewer funds available for investment. Lenders may also have interest in the amount of dividend a firm declares, as more the dividend paid less would be the amount available for servicing and redemption of their claims.

However, in a perfect world as Modigliani and Miller (1961)[8] have shown, investors may be indifferent about the amount of dividend as it has no influence on the value of a firm.

[5] Brealy poses the dividend policy decision as "What is the effect of a change in cash dividends, given the firm's capital-budgeting and borrowing decisions?" In other words, he looks at dividend policy in isolation and not as a by-product of other corporate financial decisions, (1992).

[6] Lintner finds that firms pay regular and predictable dividends to investors; whereas the earnings of corporate firms could be erratic. This implies that shareholders smoothened dividend income (1956).

[7] Bernstein observes that given the 'concocted' earnings estimates provided by the firms, the low dividend payout induces reinvestment risk and earnings risk for the investors (1998).

[8] M.H. Miller and F. Modigiliani, "Dividend Policy, Growth and Valuation of Shares", *Journal of Business*, (1961), pp. 411-33.

Any investor can create a 'home made dividend' if required or can invest the proceeds of a dividend payment in additional shares as and when a company makes dividend payment. Similarly, managers may be indifferent as funds would be available or could be raised without any flotation costs for all positive net present value projects.

But in reality, 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[9]. 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)[10], 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.

Information asymmetry between agents (managers) and principals (outside shareholders) may also lead to agency cost (Jensen and Meckling, 1976)[11]. One of the mechanisms of reducing expropriation of outside shareholders by agents is high payout. High payout will result in reduction of free cash flow available to managers and this restricts the empire building efforts of managers.

[9] Black notes that in the presence of taxes, investors "prefer smaller dividends or no dividends at all" (1976).

[10] S. Myers and S. Majluf, "Corporate Financing and Investment Decisions When Firms Have Information That Investors Do Not Have", *Journal of Financial Economics* Vol. 12 (1984), pp. 187-221.

[11] M. C. Jensen and W. H. Meckling, "Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure", *Journal of Financial Economics* Vol. 3 (1976), pp. 305-60.

The presence of information asymmetry may also mean that managers need to signal their ability to generate higher earnings in future with the help of high dividend payouts (Bhattacharya, 1979[12], John and Williams 1985[13], and Miller and Rock, 1985[14]). However, the credibility of signals depends on the cost of signaling - the cost being loss of financial flexibility. High payout results in reduction of free cash flow when in fact the firm needs more funds to pursue high growth opportunities. Rozeff (1982)[15] models payout ratios as a function of three factors: flotation costs of external funding, agency cost of outside ownership and financing constraints as a result of higher operating and financial leverage[16].

To summarize, several theories have been proposed in explaining why companies pay dividends[17]. 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 is yet unresolved and the words of Fischer Black (Black 1976)[18] may

[12] S. Bhattacharya, "Imperfect Information, Dividend Policy, and the Bird-in-the hand Fallacy", *Bell Journal of Economics* 10 (1979), pp. 259-270.

[13] K. John and J. Williams, "Dividends, Dilution and Taxes: A Signaling Equilibrium", *Journal of Finance* 40 (1985), pp. 1053-1070.

[14] M. H. Miller and K. Rock, "Dividend policy under asymmetric information", *Journal of Finance* 40 (1985), pp. 1031-1051.

[15] M. S. Rozeff, "Growth, Beta and Agency Costs as Determinants of Dividend Payout Ratios", *Journal of Financial Research* 5 (1982), pp. 249-259.

[16] According to Kalay, in the absence of restraining covenants shareholders can transfer wealth from bondholders by paying off dividend to themselves either by selling existing assets or by reducing investment or by using proceeds of a senior debt (1982).

[17] Baker, Powell and Veit survey different streams of research work on dividends (2002).

[18] F. Black, "The dividend puzzle", *Journal of Portfolio Management*, 2 (1976), pp. 5–8.

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)[19] 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 of size, earnings and growth.

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

In context of our capital market, it is still not clear as to what the dividend payment pattern of corporate firms is in Bangladesh and what are the determinants of their dividend policy? **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 also determinants of the dividend policy and security price reaction to the announcement of dividends.** The major objective of this chapter is to give a brief outline of the whole thesis including the research problem, objectives, justification, literature review and the structure of the thesis.

[19] E. Fama and K. French, "Disappearing dividends: changing firm characteristics or lower propensity to pay?", *Journal of Financial Economics*, 60 (2001), 3-43.

I.2 Statement of the Problem

Many researchers worked on different capital markets of the world, but in context of Bangladesh, a few empirical studies analyzed the dividend behavior of corporate firms in connection with dividend announcement effects on security prices in the Dhaka stock Exchange. A number of researchers provide insights, theoretical as well as empirical, into the dividend policy puzzle. However, the issue as to why firms pay dividends is as yet unresolved. Several rationales for the corporate dividend policy propose in the literature, but there is no unanimity among researchers. Everyone, however, agrees that the issue is important, as dividend payment is one of the most commonly observed phenomenon in corporations worldwide. Due to multifarious factors, share prices of a company change. Transaction cost, personal tax, corporate tax, announcement of dividend on share price movement are the factors through which share prices may change. The effect of dividend announcement on security prices has great impact on investors in connection with holding of securities. The investors usually collect inside information about the firms' future prospects. The investors can use various signaling devices to convey this information to the public. Earnings and dividend are very much important in connection with signaling devices. The information about dividend indicates that managers use cash dividend announcement to signal changes in their expectation about future prospects of the firm. There are many signaling devices to convey information. It is necessary to state that the managers should not provide dividend with misleading information, which may alert the investors about the actual position of the company.

Saleh and Nazneen (2005)[20] identified five broad factors that influence the dividend policy decision of the corporate management in Bangladesh. Ahsan and Bashar (1999)[21] observes that in the Dhaka stock exchange, dividend announcement as a strong signaling

[20] M. Saleh Jahur and Suraiya Nazneen, "Determinants of Dividend Policy-An Empirical Study of Some select Corporate Sectors in Bangladesh", *The Cost and Management,* Vol. 33 (2005), No. 6, pp. 58-68.

[21] A. Ahsan and O. M. Bashar, "Security Price Reaction to Dividend Announcement: Evidence from Dhaka Stock Exchange Ltd", *Bank Parikrama*, Vol. XXIV, No. 3 & 4 (1999), pp. 100-116.

device does not carry positive information about the firms to the investors due to some numerous factors. But there are so many devices which convey information about the company to the market. Ranajet Kumar (2003)[22] observes that if dividend policy changes significantly, it has sometimes influenced the stock prices and sometimes remains as price insensitive.

From the above discussion, we can easily realize the importance of dividend policy practices in corporate firms of Bangladesh. This study attempts to identify the dividend policy practices by the corporate firms of Bangladesh. It raises the following questions:

1.2.1 Research Questions

1) What is the dividend payment pattern of corporate firms in Bangladesh?
2) What is the growth trend in the dividend payment pattern of Bangladeshi corporate firms?
3) Is there any relationship exists between the dividend trends with the growth trends of market price of share?
4) What are the determinants of their dividend policy?
5) How does dividend policy of corporate firms behave in our capital market?
6) How does security price react to the announcement of dividends?

Hence, this study is undertaken to analyze the trends and growth of the dividends, and also determinants of the dividend policy and security price reaction to the announcement of dividends of Bangladeshi corporate firms over the last fifteen years (2000 – 2014) and attempts to explain the observed behavior.

[22] Ranajit K. B., "Signaling Effect of Dividend Policy on Share Prices in Bangladeshi Capital Market", *Bank Parikrama*, Vol. XXVIII, No. 1 (2003), pp. 54-74.

I.3 Objectives of the Study

The general objective of the study is analyzing the trends and determinants of the dividend policy culture and practices by the Bangladeshi corporate firms and subsequent reaction on the capital market. However, the specific objectives are:

(1) To review and analyze the growth trend in the dividend payment pattern of Bangladeshi corporate firms and to examine whether there exists any relationship between the dividend trends with the growth trends of market price of share over the last fifteen years on our capital market.

(2) To identify the significant factors which are the prominent determinants of the dividend policy of the corporate firms.

(3) To identify the security prices reaction to the dividend announcement of corporate firms of Bangladesh in the Dhaka Stock Exchange Ltd. and

(4) To identify the problems and to suggest measures for improving the dividend policy culture and practices of corporate firms of Bangladesh.

I.4 Key Terms

I.4.1 Dividend

A dividend is a distribution of a portion of a company's earnings, decided by the board of directors, to a class of its shareholders. Dividends can be issued as cash payments, as shares of stock, or other property.

I.4.2 Stock Dividend

A stock dividend is a dividend paid in the form of stock made to existing owners. Although stock dividends are more costly to issue than cash dividends, the advantages generally outweigh these costs. Stock dividends are a means of giving the owners something without having to use cash. Generally, a firm that is growing rapidly and needs internal financing to perpetuate this growth uses stock dividends.

I.4.3 Cash Dividend

A cash dividend is money paid to stockholders, normally out of the corporation's current earnings or accumulated profits.

I.4.4 Corporate Dividend Policy

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 during 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.

I.4.5 Ex-dividend Date

The date on or after which a security is traded without a previously declared dividend. The date on which the right to the next dividend no longer accompanies a stock; it usually is two working days prior to the holder-of-record date.

I.4.6 Declaration Date

The date on which the next dividend payment is announced by the directors of a company. This statement includes the dividend's size, ex-dividend date and payment date.

I.4.7 Record Date

The record date is the cut-off date established by a company in order to determine which shareholders are eligible to receive a dividend or distribution. The determination of a record date is required to ascertain who the company's shareholders are as of that date, since the shareholders of an actively traded stock are continually changing. The shareholders of record as of the record date will be entitled to receive the dividend or distribution declared by the company. Also known as the date of record.

I.4.8 Information Content or Signaling Hypothesis

One of the most recent and faddish explanations of dividend pay-out in spite of differential tax rates has been dividend- signaling models. These models have developed the theory that dividends carry informational effects (Gerber, 1988)[23]. In fact, Miller and Modigliani (1961)[24] were the first to introduce the hypothesis of "information content of the dividend." They argue that when a firm follows a policy of dividend stabilization, investors may interpret a change in the dividend pay-out ratio as a change of management's views of the firm's future profitability.

[23] G. Gerber, "An Investigation of the Determinants of Dividend Policy and the Effects of Dividends on Stock Returns", PhD Dissertation, University of Pennsylvania, ProQuest Digital Dissertation, Publication No. AAT8816173 (1988).

[24] M. H. Miller and F. Modigliani, "Dividend Policy Growth and the Valuation of Shares", *Journal of Business* 34 (1961), pp. 411-433.

Furthermore, Miller and Modigliani (1961) introduced the idea that dividends could convey information about future profitability. In addition, the extensive investigation of Griffin (1976)[25], and Charest (1978)[26] suggest that dividend payments do indeed convey information. More recently, Aharony and Swary (1980)[27] report similar results after controlling for contemporaneous quarterly earnings reports. These studies indicate that announcements of dividend changes do convey information to the market. However, the question 'What information is contained in dividend announcements?' has not been fully resolved.

1.4.9 Clientele Effect

MM also suggests that a clientele effect might exist and sometimes firms apply a particular dividend payout policy to attract a "clientele" consisting of these investors who like this particular dividend policy. Clientele effect means the tendency of a firm to attract the type of investors who like its dividend policy.

1.4.10 Agency Cost

Agency cost is the cost that arises for the conflict between shareholders-manager(s). The payments of dividend reduce the agency problem between manager and shareholder because dividend payments reduce discretionary funds available to managers (Jensen and

[25] P. A. Griffin, "Competitive Information in the Stock Market: An Empirical Study of Earnings, Dividends and Analysts Forecast", *Journal of Finance* 31(1976), pp. 631-650.

[26] G. Charest, "Dividend Information, Stock Returns, and Market Efficiency", *Journal of Financial Economics* 6 (1978), pp. 297-330.

[27] J. Aharony and I. Swary, "Quarterly Dividend and Earning Announcements and Stockholders' Returns: An Empirical Analysis", *Journal of Finance* 35 (1980), pp. 1- 12.

Meckling, 1976[28]; Rozeff, 1982[29]; Easterbrook, 1984[30]; Crutchley and Hansen, 1989[31]; Jensen *et al.* 1992[32]; Alli *et al.* 1993[33]; Saxena, 1999[34]; and Mollah *et al.* 2000[35]). However, Jensen's (1986)[36] free cash flow hypothesis views that agency cost also arises for free cash flow because free cash flow motivates the managers to take negative net present value projects. In addition, agency cost may also arise between shareholder and bond holders because shareholders can seize wealth from bond holders by paying themselves coupon payments or interest.

1.4.11 Information Asymmetry

A situation in which one party in a transaction has more or superior information compared to another. This often happens in transactions where the seller knows more than the buyer, although the reverse can happen as well. Potentially, this could be a harmful situation because one Party can take advantage of the other party's lack of knowledge.

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[28] M. C. Jensen, and W. H. Meckling, "Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure", *Journal of Financial Economics* 3 (1976), pp. 305-360.

[29] M. S. Rozeff, "Growth, beta and agency costs as determinants of dividend payout ratios", *Journal of Financial Research*, Vol. 5, No. 3 (1982), pp. 249–259.

[30] F. H. Easterbrook, "Two agency-cost explanations of dividends", *The American Economic Review,* 74 (1984), pp. 650-659.

[31] C. Crutchley and R. Hansen, "A Test of the Agency Theory of Managerial Ownership, Corporate Leverage, and Corporate Dividends", *Financial Management* 18 (1989), pp. 36-46.

[32] G. Jensen, D. Solberg, and T. Zorn, "Simultaneous determination of insider ownership, debt, and dividend policies", *Journal of Financial and Quantitative Analysis*, 27 (1992), pp. 247–263.

[33] K. L. Alli, A. Q. Khan, and G. G. Ramirez, "Determinants of corporate dividend policy: A factorial analysis", *The Financial Review*, Vol. 28, No. 4 (1993), pp. 523–547.

[34] A. K. Saxena, *"Determinants of Dividend Policy: Regulated Versus Unregulated Firms",* Paper Presented at the Financial Management Association Conference (1993).

[35] A. S. Mollah, K. Keasey, and H. Short, *"The Influence of Agency Costs on Dividend Policy in an Emerging Market - Evidence from the Dhaka Stock Exchange"*, Paper Presented at the Sixth Workshop of European Network of Bangladesh Studies, Oslo, (May 14-16, 2000) Norway. Published at http://www.bath.ac.uk/Centres/CDS/enbs-papers/mollah new.htm

[36] M. C. Jensen, "Agency costs of free cash flow, corporate-finance, and takeovers", *American Economic Review*, Vol. 76, No. 2 (1986), pp. 323–329.

1.4.12 Event Study

An empirical study performed on a security that has experienced a significant catalyst occurrence, and has subsequently changed dramatically in value as a result of that catalyst. The event can have either a positive or negative effect on the value of the security. Event studies can reveal important information about how a security is likely to react to a given event, and can help predict how other securities are likely to react to different events.

1.4.13 Abnormal Returns

A term used to describe the returns generated by a given security or portfolio over a period of time that is different from the expected rate of return. The expected rate of return is the estimated return based on an asset pricing model, using a long run historical average or multiple valuations.

1.4.14 Panel Data

Panel data is data from a (usually small) number of observations over time on a (usually large) number of cross-sectional units like individuals, households, firms, or governments.

1.4.15 Shareholders' Value

The value delivered to shareholders because of management's ability to grow earnings, dividends and share price. In other words, shareholder value is the sum of all strategic decisions that affect the firm's ability to efficiently increase the amount of free cash flow over time.

I.5 Theoretical Background

Several theories concerning the relationship of dividend policies and stock returns have been documented in the financial literature as share price maximization is the central focus in finance. In 1961, Miller and Modigliani (M&M)[37] advanced the Dividend Irrelevance Theory which theorizes that in a perfect world where there is no corporate and personal taxes, no transaction and floatation costs, no single individual who can affect a security's price through his/ her trade, all individuals have similar expectations with respect to a company's future investment and profit, and where a company has a planned and fixed investment policy, the value of a company and thus its share prices are unaffected by the distribution of dividends. Hence, the value of a company is determined solely by the earning power and the risk of its assets but not by the manner in which it splits its earnings stream between retained earnings and dividends. They argued that an increase in dividend payment should result in a capital loss to existing shareholders and these two will offset each other. Dividend changes are theorized as involving the tradeoff between the current income and the future selling price. Though, the validity of the perfect world is empirically unjustified, the Dividend Irrelevance Theory is crucial for the formulation of further theories that account for various imperfections in the real world.

One such imperfection which is critical to the development of theories related to dividend is the asymmetric information problem which lends importance to the Signaling Theory. This is also referred to as the information content of dividend hypothesis. According to

[37] M.H. Miller and F. Modigliani, "Dividend policy, growth and the valuation of shares", *The Journal of Business*, 34 (1961), pp. 411-33.

this theory, also found by M&M, dividend announcements are hypothesized to have information content, whereby managers use cash dividend announcement to signal changes in their expectation about the future prospect of the company when the markets are imperfect. The information content inherent in a dividend announcement would cause the shareholders to react to the announcement and thus influence the company share prices. There are however debates with respect to the form of information content that is being conveyed to the market through the dividend announcement.

Built on the premise of the information content of dividend hypothesis, other theories have been developed to explain the nature of information content in a dividend announcement. The cash flow signaling theory, also referred as the cash flow hypothesis developed by Bhattacharya (1979, 1980)[38], John and Williams (1985)[39] and Miller and Rock (1985)[40], theorized that dividend changes are explicit signals about the current and/or future cash flows, sent intentionally and at some costs by management to the company and its stockholders. Miller and Rock assumed asymmetric information with respect to the magnitude of a company's current internal cash flow, but symmetric information to its level of planned investment and value of assets. They studied the impact of dividend payment.

[38] S. Bhattacharya, "Imperfect Information, Dividend Policy, and 'the bird in the hand' Fallacy", *The Bell Journal of Economics,* 10, No.1 (1979), 259-270.

[39] K. John and J. Williams, "Dividends, Dilution and Taxes: A Signaling Equilibrium", *Journal of Finance,* 40 (1985), 1053-1070.

[40] M. Miller and K. Rock, "Dividend Policy under Asymmetric Information", *Quarterly Journal of Economics,* 95 (1985), 1031-1051.

Al-Malkawi, Rafferty & Pillai (2010)[41], dividend policy may influence different investors to shift their portfolio allocation, resulting in transaction costs. Small investors (such as retirees, income-oriented investors, and so on) who rely on dividend income for their consumption needs, might be attracted to (and even may pay a premium for) high and stable- dividend stocks, because the transaction costs associated with selling stocks might be significant for such investors. On the other hand, some investors (e.g. wealthy investors), who do not rely on their share portfolios to satisfy their liquidity needs, prefer low payouts to avoid the transaction costs associated with reinvesting the proceeds of dividends, which they actually do not need for their current consumption. Ali & Chowdhury (2010)[42], another imperfection of capital markets is the need for information which is neither costless nor universally available. Therefore, a dividend declaration which is both free and universally available is thought to signal information to the market as described in the Signaling Theory. The theory infers that changes in dividend policy may be signal concerning the firm's financial condition. A dividend increase may signal good future earnings. A dividend decrease may signal poor future earnings. The information content inherent in a dividend announcement would cause the shareholders to react to the announcement and thus influence the company share prices. Of course, information content conveyed through dividend announcement is not still beyond controversy.

[41] Al-Malkawi, Rafferty and Pillai, "Dividend Policy: A Review of Theories and Empirical Evidence", *International Bulletin of Business Administration,* Issue 9 (2010), pp. 171-200.

[42] M. B. Ali and Tanvir Chowdhury, "Effect of Dividend on Stock price in Emerging Stock Market: A study on the Listed Private Commercial Banks in DSE", *International Journal of Economics and Finance*, Vol. 02, No. 04 (2010), p. 53.

Based on the information content some other theories have been developed to explain the impact of dividend declaration on firm's value and thus on its share prices. One attractive view is the 'bird in the hand' hypothesis, according to which, a higher current dividend reduces uncertainty about future cash flows, a high payout ratio will reduce the cost of capital, and hence increase share value. The proposition suggests that the lower uncertainty attached to dividends received will result in a lower discount factor applied to the firm's earnings resulting in a higher stock value

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According to them, cash dividend payment is normally associated with a company's operating cash flow assuming the amount of investment and external financing is constant. If a company announced dividend payment which is greater than expected by the market, it reveals an increase of the company's future cash flow which brings up an upward movement in its stock price. The theory thus hypothesized that an increase (decrease) in dividend will lead to an increase (decrease) in stock prices where the levels of cash dividends are associated with the levels of permanent earnings which would affect the stock value.

Jensen (1986)[43], on the other hand, proposed a theory which is widely known as the Free Cash Flow Hypothesis. According to Jensen, the free cash flow exists in a company when there are excess funds left over after taking into account all positive net present value projects. He argues that a conflict of interest between shareholders and managers over the payment policies of these free cash flows could explain the stock price reaction. The theory predicts that stock prices will increase if there is unexpected dividend payment. It associates an increase in dividend with less free cash flow and thus less tendency to over-invest, for example accepting marginal investment projects that have negative NPVs. In other words, changes in dividend payment signal changes in investment policy.

Similar prediction could also be inferred from the agency cost theory forwarded by Easterbrook (1984)[44]. According to him, the separation of ownership from control would encourage managers to misuse the company's resources for their personal gain. A regular cash dividend payment ensures the managers are alert with their actions. If there is a reduction in dividend, this would increase access to internally generated funds where there is a likelihood of the management to allocate a greater proportion of the company's resources into perquisites. In such a case, the agency cost theory associates cash dividend decrease with a reduction in a company's equity value, hence a negative price effect is expected out of the announcement.

[43] M. Jensen, "Agency Cost of Free Cash Flows, Corporate Finance and Takeovers", *American Economic Review,* 76 (1986), pp. 323-329.

[44] F. Easterbrook, "Two Agency Cost Explanations of Dividends", *American Economic Review*, 74 (1984), pp. 650-659.

I.6 Empirical Evidence

Numerous empirical studies have been carried out to determine the stock market reactions to dividend announcements. Aharony and Swary (1980)[45], Kwan (1981)[46], Eades (1982)[47], and Woolridge (1982)[48], have found a significant positive association between announcement of dividend changes and the stock return, using the dividend announcement made in isolation of other firm news report. Gordon (1962 and 1963)[49] and Walter (1963)[50] support the dividend relevance doctrine. They suggest that dividend policy and investment policy are inter-linked. Investment policy cannot be separated from dividend policy and the choice of an appropriate dividend policy affects the value of the firm. The leading proponents of the bird-in-the-hand theory (Gordon, 1962[51]; and Lintner, 1962)[52] found that stockholder value a dollar received in dividend more highly than dollar earnings retained. Therefore, dividend policy is relevant to the value of shares.

[45] J. Arahony and I. Swary, "Quarterly Dividend and Earnings Announcements and Stockholders Returns: An Empirical Analysis", *Journal of Finance*, 35 (1980), pp. 1-12.

[46] C. Kwan, "Efficient Market Tests of the Information Content of Dividend Announcement: Critique and Extension", *Journal of Finance and Quantitative Analysis*, 16 (1981), pp. 193-206.

[47] K. Eades, "Empirical Evidence on Dividends as a Signal of Firm Value", *Journal of Financial and Quantitative Analysis*, 17(1982), pp. 471-500.

[48] J. R. Woolridge, "The Information Content of Dividend Changes", *Journal of Financial Research*, 5 (1982), pp. 237-247.

[49] M. J. Gordon, "The Savings, Investment and Valuation of the Corporation", *Review of Economics and Statistics*, 45 (1962), pp. 37-51. Gordon, M. J., "Optimum Investment and Financing Policy", *Journal of Finance*, 18 (1963), pp. 264-272.

[50] J. E. Walter, "Dividend Policy: It's Influence on the Value of Enterprise", *Journal of Finance,* 18 (1963), pp. 280-291.

[51] M. J. Gordon, "The Savings, Investment and Valuation of the Corporation", *Review of Economics and Statistics*, 45 (1962), pp. 37-51.

[52] J. Lintner, "Dividends, Earnings, Leverage, Stock Prices and the Supply of Capital to Corporations", *The Review of Economics and Stat*istics, 44 (1962), pp. 243-269.

Miller and Scholes (1981)[53] have argued that the observed relationship between common stock returns and dividend yields as attributed to the favorable information contained in the knowledge that a firm will actually declare any dividend. Dhillon and Jhonson (1994)[54] examine the stock and bond price reaction to dividend changes. The positive stock market response to dividend increases has several potential explanations, two of the more commonly discussed being information content and wealth redistribution between stockholders and bondholders. The evidence presented by Dhillon and Jhonson (1994) support the wealth redistribution hypothesis but does not rule out the information content hypothesis. Typically, Dhillon and Jhonson (1994) found that the bond price reaction to announcement of large dividend changes is opposite to the stock price reaction. Their result differs from those of Handjinicolaou and Kalay (1984)[55] who analyzed bond returns around dividend changes, and reported that the bond prices are not affected by dividend increases but the bond prices react negatively to divided reductions. Dhillon and Jhonson (1994) argue that their data supports the information content hypothesis. In contrast, Jayaraman and Shastri (1988)[56] find insignificantly negative bond price reactions to dividend announcement.

[53] M. Miller and M. Scholes, "*Dividends and Taxes: Empirical Evidence*", CRSP Working Paper, University of Chicago (1981).

[54] U. Dhillon and H. Johnson, "The Effect of Dividend Changes on Stock and Bond Prices", Journal of Finance, 49 (1994), pp. 281-289.

[55] G. Handjinicolaon and A. Kalay, "Wealth Redistributions or Changes in Firm Value: An Analysis of Returns to Bondholders and Stockholders around Dividend Announcements", *Journal of Financial Economics*, 13 (1984), pp. 35-63.

[56] N. Jayaraman and K. Shastri, "The Valuation of Specially Designed Dividends", *Journal of Financial and Qualitative Analys*is, 23 (1988), pp. 301-312.

The leading proponents of the bird-in-the-hand theory (Gordon, 1962; and Lintner, 1962) found that stockholder value a dollar received in dividend more highly than dollar earnings retained. Therefore, dividend policy is relevant to the value of shares. Miller and Scholes (1981) have argued that the observed relationship between common stock returns and dividend yields as attributed to the favorable information contained in the knowledge that a firm will actually declare any dividend. Dhillon and Jhonson (1994) examine the stock and bond price reaction to dividend changes. The positive stock market response to dividend increases has several potential explanations, two of the more commonly discussed being information content and wealth redistribution between stockholders and bondholders. The evidence presented by Dhillon and Jhonson (1994) support the wealth redistribution hypothesis but does not rule out the information content hypothesis. Typically, Dhillon and Jhonson (1994) found that the bond price reaction to announcement of large dividend changes is opposite to the stock price reaction. Their result differs from those of Handjinicolaou and Kalay (1984) who analyzed bond returns around dividend changes, and reported that the bond prices are not affected by dividend increases but the bond prices react negatively to divided reductions. Dhillon and Jhonson (1994) argue that their data supports the information content hypothesis. In contrast, Jayaraman and Shastri (1988) find insignificantly negative bond price reactions to dividend announcement.

Black and Scholes (1974)[57] have found that corporations that increase its dividend can expect this will have no definite effect on its stock price. The price may change temporarily in response to a change in the dividend, because the market may believe that the change indicates something about the probable future course of earnings. If it becomes clear that the change was not made because of any change in estimated future earnings; this temporary effects will disappear. Thus a corporation may want to choose its dividend policies under the assumption that changes in dividend policy will have no permanent effect on its stock price.

Other researchers made efforts to further understand the dividend controversy. Among them, Brennan (1970 and 1973)[58], Litzenberger and Ramaswamy (1979 and 1980)[59] showed that it is not optimal for the investors to receive dividends if their marginal tax rate is greater than zero and investors' after-tax expected rate of return (discount rate) depends on the dividend yield and systematic risk. This lead to an idea that at least dividend might have some tax-induced effect on the stock prices. Average investors, subjects to their personal tax rates, would prefer to have less cash dividend if it is taxable: the size of optimal dividend inversely related to personal tax rates (Pye, 1972)[60]. Hence stock prices tend to decline after announcement of dividend increase.

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[57] F. Black and M. S. Scholes, "The Effect of Dividend Yield and Dividend Policy on Common Stock Prices and Return", *Journal of Financial Economics*, 1 (1974), pp. 1-22.

[58] M. J. Brennan, "Taxes Market Valuation and Corporate Financial Policy", *National Tax Journal,* 26 (1970), pp. 1115-1121.

[59] R. H. Litzenberger and K. Ramaswamy, "The Effects of Personal Taxes and Dividends on Capital Asset Prices", *Journal of Financial Economics*, Vol. 7 (1979), pp. 163-195.

[60] G. Pye, "Preferential Tax Treatment of Capital Gains, Optimal Dividend Policy, and Capital Budgeting", *The Quarterly Journal of Economics,* Vol. 86 (1972), pp: 226-242.

The empirical studies however showed mixed evidence, using the data from US, Japan and Singapore markets. A number of studies found that stock price has a significant positive relationship with the dividend payment [Gordon (1959), Ogden (1994), Stevens and Jose (1989)[61], Kato and Loewenstein (1995)[62], Ariff and Finn (1986)[63], and Lee (1995)[64]] while other found a negative relationship [Loughlin (1989)[65], and Eason and Sinclair (1989)]. A negative relationship between dividend announcement stock returns is expected due to tax effect, but researchers tended to

Relate the positive relationship between stock returns and dividend announcement with the information effect of dividend. The dividend information hypothesis postulates that cash dividend carries information regarding the future cash flows of firm that is to be reflected in the market price of stock after announcement of dividend, particularly when dividend increases [Bhattacharya (1979), Bar-Yosef and Huffman (1986)[66] and Yoon and Starks (1995)[67]].

[61] J. L. Stevens and M. L. Jose, "The Effect of Dividend Payout, Stability, and Smoothing on Firm Value", *Journal of Accounting Auditing and Finance*, Vol. 7 (1992), pp. 195-216.

[62] K. Kato and U. Loewenstein, "The Ex-Dividend-Day Behavior of stock Prices: The Case of Japan", *The Review of Financial Studies*, Vol. 8 (1995), pp. 816-847.

[63] M. Ariff and F. J. Finn, "Announcement Effects and Market Efficiency in a Thin Market: An Empirical Application to the Singapore Equity Market", *Asia Pacific Journal of Management*, Vol. 6 (1986), pp. 243-267.

[64] B. S. Lee, "The Response of Stock Prices to Permanent and Temporary Shocks to Dividend", *Journal of Financial and Quantitative Analysis*, Vol. 30 (1995), pp. 163-195.

[65] P. H. Loughlin, "The Effects of Dividend Policy on Changes in Stockholders' Wealth", A PhD Thesis, Graduate School of Saint Louis University, USA (1982).

[66] S. Bar-Yosef and L. Huffman, "The Information Content of Dividends: A Signaling Approach", *Journal of Financial and Quantitative Analysis*, Vol. 21, No.1 (1986).

[67] P. S. Yoon and L. T. Starks, "Signaling, Investment Opportunities, and Dividend Announcements", *The Review of Financial Studies*, Vol. 8 (1995), pp. 995-1018.

I.7. Review of Literature

This section presents the most relevant literature, pertaining to the research questions. A review of literature is imperative to gain an understanding of the research agenda and to identify research gap. Exclusive literature on dividend policy in corporate firms of Bangladesh is too limited to make a comprehensive review. Although, some researchers and academicians did some works on dividend policy for different purposes, no in-depth study on the trends and effect of dividend policy was carried out earlier. However, the available literatures are reviewed here to find the existing knowledge gaps in the subject selected for this study.

In the Dividend Irrelevance Theory, **Modigliani –Miller (1961)**[68] argue that the firm's value is determined by the investment policy and that the split between dividends and funds to be reinvested does not affect the firm value and thus its share prices assuming a perfectly competitive market, in which, in the absence of any corporate or personal taxes and transaction cost, an investor behaves and believed to be behaved rationally to maximize their wealth without any informational asymmetry and no investor is capable to influence security prices **(Pike and Neale, 2005)**[69]. **Black–Scholes (1974)**[70] support the argument while Lumby and Jones strike the view saying the name itself is misleading as they observe it is not the dividend that is irrelevant

[68] M. H. Miller and F. Modigliani, "Dividend policy, growth, and the valuation of shares", *The Journal of Business*, Vol. 34, No. 4 (1961), pp. 411-433.

[69] R. Pike and B. Neale, *Corporate Finance and Investment – Decisions and Strategies*, Prentice Hall, Fifth Edition, (2005), pp. 530-531.

[70] F. Black and M. S. Scholes, "The Effect of Dividend Yield and Dividend Policy on Common Stock Prices and Return", *Journal of Financial Economics,* 1 (1974), pp. 1-22.

but the dividend pattern **(Lumby and Jones, 1998)[71].** The postulates of their suggested perfect market is a fantasy, market imperfection is the most common experience the clientele ever encounter that makes dividend relevance in stock price fluctuation.

Investors cannot costless adjust their dividend pattern and thereby they prefer companies to supply them with their desired dividend pattern. Investors are attracted to different company policies, and when the company policy changes, investors will adjust their stock holdings accordingly. As a result of this adjustment, the stock price will move (Myers, 2002). It has been better explained by Modigliani- Miller (1961) in their clientele effect hypothesis in which they pointed out that the portfolio choices of individual investors might be influenced by certain market imperfections such as transaction costs and differential tax rates to prefer different mixes of capital gains and dividends .

From Bangladesh standpoint, some researches have been done examining security price reaction towards different dividends(Cash dividends and stock dividends) . In one of the outset studies, **Ahsan and Bashar (1997)[72]** found that there was no significant impact of dividend announcement on the security prices on an average considering 21 actively traded securities in Dhaka Stock Exchange (DSE) over 1995 and 1996, and thus reflect the hypothesis of dividend irrelevancy given by Miller and Modigliani (1961). But, at their time, our capital market was at very infant level

[71] S. Lumby and C. Jones, *Investment Appraisal & Financial Decisions*, Cengage Learning EMEA; sixth edition, (1998), p. 523.

[72] A. Ahsan and O. M. Bashar, "Security Price Reaction to Dividend Announcement: Evidence from Dhaka Stock Exchange Ltd", *Bangladesh Online Research Network*, (1997). www.Bd research.org.bd

to get access to classified data and information and the study was conducted based on the observation of security prices only for few days whereas it requires yearlong observation of security prices to find out the true response of dividend declaration on security prices. Size of sample and its composition they used could be moreover criticized as not a representative one as it ignored the securities of many of the industries (securities of 9 industries out of 13 had been considered).

In a more comprehensive study, **Uddin & Chowdhury (2005)**[73] also support Miller and Modigliani (1961)dividend irrelevancy argument as they did not find dividend payment signals any information to the investors in their study conducted based on 137 DSE listed companies declaring dividends during October 2001 and September 2002 (Uddin and Chowdhury, 2005). **Mosarof, M. (2006)**[74] examined the determinants of stock price considering several factors like earnings per share (EPS), dividend per share, dividend payout ratio, number of IPOs along with some macroeconomic variables like GDP, per capita income, etc., and found that stock price is inversely related with dividend yield and thus concluded that dividend yield partially compensated the losses in stock value. In another study of stock price behavior around ex-dividend date from DSE, **Rahman and Rahman (2008)**[75] made a conclusion that ex dividend price increased instead of dropped in DSE that implies a clear preference for capital gains

[73] M. H. Uddin and G. M. Chowdhury, "Effect of Dividend Announcement on Shareholders' Value: Evidence from Dhaka Stock Exchange", *Journal of Business Research*, Vol. 7, (June 2005). http:// www.Bd research.org.bd

[74] M. Mosarof, "Empirical Evidence from Determinants of Stock Price and Return of Dhaka Stock Exchange", *Journal of Finance and Banking,* Vol. 8 (2006), pp. 111-124.

[75] Z. Rahman and L. Rahman, 'Stock Price Behavior around ex -dividend Day: Evidence from Dhaka stock Exchange', *Journal of Business Administration*, Vol. 34 (2008), pp. 127-144.

without having any focus of dividends by the stockholders. In a recent study based on the listed private commercial banks in DSE, Bangladesh, **Ali and Chowdhury (2010)**[76] found no strong evidence that stock price reacts significantly on the announcement of dividend. Therefore, research findings regarding stock price responses towards dividends announcement are controversial from the standpoint of Bangladesh. In spite of this controversy, in the real economy, a change in dividend policy must be replicated by a change in share value; this paper is another initiative to examine the degree and direction of that replication.

Hamid and Chowdhury (2005)[77] used two measures i.e. daily market- adjusted abnormal return (MARR) and daily cumulative abnormal return (CAR) to study the impact of dividend announcement on shareholders' value. They explained Market Adjusted Abnormal return (MARR) as an indicator of the relative daily percentage price change in the dividend paying stocks compared to the change in average market price. Whereas Cumulative Abnormal Return (CAR) has been defined as a measure of the investors' total return over a period starting from well before the announcement of dividend to well after the dividend announcement day. They have taken 137 samples of dividend paying companies listed on Dhaka Stock Exchange and found that MARR on the day of dividend announcement was not statistically significant which entails that the market reacts earlier than the actual announcement of dividend. On the other hand, the findings

[76] M. B. Ali and Tanvir Chowdhury, "Effect of Dividend on Stock Price in Emerging Stock Market: A Study on the Listed Private Commercial Banks in DSE", *International Journal of Economics and Finance,* Vol. 02, No. 04 (2010), p. 53.

[77] M. Hamid and G. M. Chowdhury, "Effect of Dividend Announcement on Shareholders' Value: Evidence from Dhaka Stock Exchange", *Development Research Network,* (2005). Pp. 1-11. www.bdresearch.org

of CAR results that investors lost more value in the ex-dividend period than the value gained in the pre-dividend period. These findings also suggest that dividend announcement does not carry information about the future earnings and cash flows of the companies.

A good deal of studies has been undertaken on both the developed and the developing countries. The impacts of cash and stock dividends on the share price returns have been mixed in those markets. These findings to a great extent either support the dividend irrelevancy theory or provide other explanations for the reasons of the dividends declared. A summary of those findings may include the followings. **Yu Qiao *et al* (2001)**[78] found a positive statistical relationship between the dividends and mix dividend policies of firms on the stock market. However the study found the market was not sensitive to cash dividend. **Wei Chen et al (1999)**[79], empirically analyzed the dividend policy of the companies listed in shanghai stock market by using cumulative abnormal return (CAR). It tried to see whether there is any evidence of existence of the signaling effect of dividend policy in this market and also to find its characteristics, if exists. This study showed that the degree of CAR was very much different arising as a result of different dividend policies. The CAR of right issue was found to be higher than that of cash dividend but lower than that of the bonuses.

[78] Yu Qiao, Yin Chen, "Dividend policy and fluctuation of stock market in Chinese companies", *Economic Research*, Vol. 4 (2001).

[79] Wei Chen, Xing Liu, Yuanxin Yang, "An empirical study on the signaling effect of dividend policy in Shanghai's stock market", *Chinese Journal of Management Science*; Vol. 7, No. 3 (1999).

Louis T. W. Cheng, Hung-Gay Fung and T. Y. Leung (2001)[80], found that in many emerging financial markets, firms typically pay stock dividends rather than cash dividends. They found Chinese investors appear to favor stock dividend over cash dividends [Chen, Firth, and GAO (2002)]. There are many hypotheses explaining why firms pay out stock dividends. The signaling and retained earnings hypotheses, which are found closely linked and to relate stock dividends to a firm's good growth or investment potential, appear to be the leading contenders in explaining stock dividend policies of firms in the U.S. [Baker, Phillip's, and Powell (1995)][81]. **Kalay and Loewenstein (1985)**[82] found a strong positive relationship between dividend changes and a firm's ability to generate future earnings and cash. Other writers showed that a dividend loses its information content in explaining firm's future performance when earning and earning related variables (such as earnings forecast) are released simultaneously [Conroy, Eades, and Harris (2000)[83]; Mikhail, Walther and Willis (2003)]. A new view is the tunneling perspective, which argues that cash dividends may be used as a tool to re-direct firm resources to benefit large shareholders and top management at the expense of minority share-holders [Faccio, Lang, and Young (2001)[84]]. Studies also provided some

[80] H. G. Fung and W.K. Leung, "Financial liberalization and corporate governance in China", *International Journal of Business*, Vol. 2, No. 2 (2001), pp. 3-31.

[81] H. K. Baker, A. L. Philips, and G.E. Powell, "The Stock distribution puzzle: A Synthesis of the literature on stock splits and stock dividends", *Financial Practice & Education*, (Spring/ Summer, 1995), pp. 24-27.

[82] A. Kalay and U. Loewenstein, "Predictable events and excess returns: the case of dividend announcements", *Journal of Financial Economics*, Vol. 14 (1985), pp. 423-450.

[83] R. M. Conroy, K .M. Eades, and R.S. Harris, "A test of the relative pricing effects of dividends and earnings: Evidence from simultaneous announcement in Japan", *Journal of Finance,* Vol. 55 (2000), pp. 1199-1227.

[84] M. L. Lang Faccio and L. Young, "Dividends and expropriation", *American Economic Review*, Vol. 91 (2001), pp. 54-78.

evidences for various hypotheses on stock dividend issue. In an examination of responses from chief financial officers, Eisemann and Moses (1978)[85] show support for the signaling, liquidity, cash substitution, and retained earnings hypotheses. Baker and Philiphs (1995) report the evidence from a manager survey for the signaling and retained earning hypotheses. Therefore, the retained earnings hypothesis argues that stock distributions of less than 25% are a signal of future earnings as the stock dividend-paying firms are expected to replenish the retained earnings account with future earnings. Empirical evidence for the retained earnings hypothesis is mixed [Chottiner and Young (1971)[86]; Banker, Das, and Datar (1993)[87]; Peterson, Millar, and Rimbey (1996)]

In a research work on corporate financial policy, Ofer and Siegel (1987)[88] studied the effect of dividend announcement on the security price. Their results have important implications regarding a number of models that have been developed to explain security price reactions to announcement of changes in corporate financial policy. The dividend model they took into consideration were developed by Bhattacharya (1979, pp. 259-70), John and Williams (1985, pp. 1053-70), Miller and Rock (1982, pp. 1031-51) and Ofer and Thakor (1987)[89]. Ofer and Siegel concluded that their results are consistent

[85] P. C. Eisemann and E. A. Moses, "Stock dividends: Management view", *Financial Analysts Journal,* Vol. 31(1978), pp. 77-80.

[86] S. Chottiner and A. Young, "A test of the AICPA differentiation between stock dividends and stock splits", *Journal of Accounting Research,* Vol. 9 (1971), pp. 367-374.

[87] R. D. Banker, S. Das, and S. M. Datar, "Complementary of prior accounting information: The case of stock dividend announcements", *The Accounting Review*, Vol. 68 (1993), pp. 28-47.

[88] A. R. Ofer and D. R. Siegel, "Corporate Financial Policy Information and market expectation: An empirical investigation of dividends", *Journal of Finance*, (1987), pp. 889-911.

[89] A. R. Ofer and A. Thakor, "A theory of Stock price responses to Alternative corporate cash disbursement methods: Stock Repurchases and dividends", *Journal of Finance*, Vol. 42 (1987).

with the hypothesis that unexpected dividend changes contain information about the firm's expected performance, and therefore, provide support for dividend signaling models.

Black, Fischer (1976)[90] found that, In addition to cash dividend and stock dividend, several mixed types of dividend payment are given apart from cash dividend and stock dividend such as mix of bonus issues and dividend, mix of rights issues and dividend.

Woolridge (1982)[91] tested the effect of dividend on three classes of securities which are Common Stock, Non-convertible Preferred Stock and Non-convertible Bonds. The announcements of dividend for 225 randomly selected NYSE firms over the 1970-77 periods were initially included in the sample. However, to obtain an accurate measure of market reaction to dividend announcements several refinements were required. This measure reduced the sample from 1017 to 411. He found the difference in the MDRs of Common Stock in the observation period (0.66%) and the comparison period (0.07%) is significant beyond the 5% level (t=7.71). Also the mean MPRZ is much larger during the observation period (54.50%) than during the comparison period (42.48%).

DeAngelo, DeAngelo and Skinner (1992)[92] analyses the relationship between dividends and losses and the information conveyed by dividend changes about the earnings

[90] F. Black, "The dividend puzzle", *Journal of Portfolio Management*, 2 (1976), pp. 5–8.

[91] J. R. Woolridge, "The Information Content of Dividend Changes", *The Journal of Financial Research,* 5 (1982), pp. 237-247.

[92] H. DeAngelo, DeAngelo Linda, and D. J. Skinner, "Dividends and losses", *Journal of Finance*, Vol. 47, No. 5 (1993), pp. 1837-1863.

performance. They examine the dividend behavior of 167 NYSE firms with at least one annual loss during 1980-95 and those of 440 firms with no losses during the same period, where all the firms had a consistent track record of ten or more years of positive earnings and dividends. They find that 50.9% of 167 firms with at least one loss during 1980-95 reduced dividends, compared to 1 % of 440 firms without losses. Their findings support signaling hypothesis in that dividend changes improve the ability to predict future earnings performance.

Mookerjee (1992)[93] was the first who used Lintner's model in an emerging country. He investigated the dividend behavior in the Indian market from 1949 to 1981. He concluded that Lintner's model explained the dividend behaviors in the Indian environment. Furthermore, Indian firms believe that they should pay dividends even if their profit level is low and even if they have to go for external financing (borrowing).

Annuar and Shamsher (1993)[94] investigated the dividends behavior of firms listed on the Kuala Lumpur Stock Exchange (now known as Bursa Malaysia). They found that firms' dividend decisions partially depended on their current profits and past dividends. They also found that firms have long-term target dividends, which is conditioned upon their earnings ability.

[93] R. Mookerjee, "An empirical investigation of corporate dividend payout behavior in an emerging market", *Applied Financial Economics*, Vol. 2, No. 4 (1992), pp. 243–246.

[94] M. N. Annuar and M. Shamsher, "The dividend and earnings behavior of firms on the Kuala Lumpur stock exchange pertanika", *Journal of Social Sciences and Humanities*, 10 (1993), pp. 73–84.

Glen *et al.* (1995)[95] study the dividend policy of firms in emerging markets. They find that firms in these markets have a target dividend payout rate, but less concerned with volatility in dividends over time. They also find that shareholders and governments exert a great deal of influence on dividend policy and observe that dividends have little signaling content in these markets.

Benartzi, Michaely, Thaler (1997)[96] analyzes the issue of whether dividend changes signal the future or the past. For a sample of 7186 dividend announcements made by NYSE or AMEX firms during the period 1979-91, they find a lagged and contemporaneous relation between dividend changes and earnings. Their analysis also shows that in the two years following dividend increases, earnings changes are unrelated to the sign and magnitude of dividend changes.

Bernsterin (1998)[97] expresses concern over the decline in payout over a period of time in the US market. He observes that given the 'concocted' earnings estimates provided by firms, the low dividend payout induces reinvestment risk and earnings risk for the investors. He asserts that "...try calculating the historical correlation between payout ratios in year t and earnings growth over t+ 5. The correlation coefficient is positive and statistically significant".

[95] J. D. Glen et al., "Dividend Policy and Behavior in Emerging Markets", Discussion Paper No. 26, International Finance Corporation (1995).

[96] S. Benartizi, R. Michaely, and R. Thaler, "Do Changes in Dividends Signal the Future or the Past?", *Journal of Finance*, Vol. 52, No. 3 (1997), pp. 1007-1034.

[97] P. L. Bernstein, "The Hidden Risks in Low Payouts", *The Journal of Portfolio Management,* Vol. 25, No. 1 (1998), p. 1.

Ahsan and Bashar (1999)[98] investigate the effect of dividend announcement on security prices empirically. They find dividend announcement as a strong signaling device which influences the security prices and show dividend announcement does not carry positive information about the company in the Dhaka Stock Exchange.

Wei Chen et al (1999)[99] empirically analyzed the dividend policy of the companies listed in shanghai stock market by using cumulative abnormal return (CAR). It tried to see whether there is any evidence of existence of the signaling effect of dividend policy in this market and also to find its characteristics, if exists. This study showed that the degree of CAR was very much different arising as a result of different dividend policies. The CAR of right issue was found to be higher than that of cash dividend.

Fama and French (2001)[100] analyze the issue of lower dividends paid by corporate firms over the period 1973-1999 and the factors responsible for the decline. In particular they analyze whether the lower dividends were the effect of changing firm characteristics or lower propensity to pay on the part of firms. They observe that proportion of companies paying dividend has dropped from a pick of 66.5 percent in 1978 to 20.8 percent in 1999. They attribute this decline to the changing characteristics of firms: "The decline in the incidence of dividend payers is in part due to an increasing tilt of publicly traded

[98] A. Ahsan and O. M. Bashar, "Security Price Reaction to Dividend Announcement: Evidence from Dhaka Stock Exchange Ltd", *Bank Parikrama*, Vol. XXIV, No. 3 & 4 (1999), pp. 100-116.

[99] Wei Chen, Xing Liu, and Yuanxin Yang, "An empirical study on the signaling effect of dividend policy in Shanghai stock market", *Chinese Journal of Management Science*, Vol. 7, No. 3 (1999).

[100] E. Fama and K. French, "Disappearing dividends: changing firm characteristics or lower propensity to pay?", *Journal of Financial Economics*, 60 (2001), pp. 3-43.

firms toward the characteristics - small size, low earnings, and high growth - of firms that typically have never paid dividends"[101].

Baker, Veit and Powell (2001)[102] study the factors that have a bearing on dividend policy decisions of corporate firms traded on the NASDAQ. The study, based on a sample survey (1999) response of 188 firms out of a total of 630 firms that paid dividends in each quarter of calendar years 1996 and 1997, finds that the following four factors have a significant impact on the dividend decision: pattern of past dividends, stability of earnings, and the level of current and future expected earnings. The study also finds statistically significant differences in the importance that managers attach to dividend policy in different industries such as financial versus non-financial firms.

Fung and Leung (2001)[103] proved that reinvestment by plowing back earnings should be viewed positively; it is a good investment approach if there are profitable opportunities in firms. If firms indeed have good investment prospects, shareholders prefer stock dividends in order to preserve cash for investments; seasoned equity financing is not readily available for future funding needs because of regulatory constraints. Thus the underdevelopment of china's financial market implies that rational Chinese stockholders would generally prefer stock dividends to cash dividends. However, in contrast, Huang and Fung (2004) found that if dividend policy serves as a signal to the market, firm value

[101] Fama and French (2001), p. 79.

[102] H. K. Baker, E.T. Veit and G.E. Powell, "Factors Influencing Dividend Policy Decisions of Nasdaq Firms", *The Financial Review*, Vol. 36, No. 3 (2001), pp. 19-38.

[103] H. G. Fung and W.K. Leung, "Financial liberalization and corporate governance in China", *International Journal of Business*, Vol. 2 No. 2 (2001), pp. 3-31.

(price) will change as a result. Price appreciation will not translate into financial gains for the controlling stockholders whose shares cannot be traded through the stock exchanges. Thus, they would prefer cash dividends to realize an immediate financial gain.

Ramacharran (2001)[104] analyzes the variation in dividend yield for 21 emerging markets (including India) for the period 1992-99. His macroeconomic approach using country risk data finds evidence for pecking order hypothesis – lower dividends are paid when higher growth is expected. The study also finds political risk factors have no significant impact on dividend payments of firms in emerging markets.

Venkateswar (2001)[105] The article written by Venkateswar on "The Adjustment of Stock Returns to Earning Announcements in the Bombay Stock Exchange (BSE)" is an analytical work indeed. The author observes that several studies in this area, including the studies by Ball and Brown (1968) and Beaver (1968), use the residual approach to assess the information content of earning announcements. However, due to the lack of data on consensus earnings forecasts by stock analysts, this paper uses the expectation model approach put forth by Benston (1967) and later refined by Gonedes (1971) and Forsgardh and Hertzen (1975). The market expectation of annual earnings is measured by using a simple average of the past three years (similar to Gonedes' approach [1971]).

[104] H. Ramacharan, "An empirical model of dividend policy in emerging equity markets", *Emerging markets quarterly*, (spring, 2001), pp. 39-49.

[105] S. Venkateswar, "The adjustment of stock returns to earning announcements in the Bombay stock exchange", *The Indian Economic Journal,* Vol. 48 (2001), pp. 41-46.

A 60-day "estimation window" was used to generate the regression parameters for every individual stock in the sample. The estimation window started 71 days prior to the earnings announcement date and ended 11 days prior to the annual earnings announcement in order not to violate the assumption regarding the disturbance term.

However, the results obtained from this study suggest that the stock price reaction in the BSE depends on the magnitude of the unexpected earnings. These results are consistent with those of advanced financial markets around the world. This study documents the adjustment of stock prices to the release of earnings data in a developing country context. It suggests that earnings convey information to the stock market and the stock price reaction depends on the magnitude of the unexpected earnings. Sophisticated research reports including earnings projections are beginning to appear with the widespread liberalization of financial markets. Future work in this area may refine estimation of earnings expectations and also look at the behavior of volume on the eve of earnings announcements.

Lee and Ryan (2002)[106] analyze the dividend signaling-hypothesis and the issue of direction of causality between earnings and dividends - whether earnings cause dividends or vice versa. For a sample of 133 dividend initiations and 165 dividend omissions, they find that dividend payment is influenced by recent performance of earnings, and free cash flows. They also find evidence of positive (Negative) earnings growth preceding dividend initiations (omissions).

[106] H. W. Lee and P.A. Rayan, "Dividends and earnings revisited: Case or effect?", *American Business Review,* Vol. 20, No. 1 (2002), pp. 117-122.

Ranajit Kumar (2003)[107] tests the signaling effect of dividend policy on share prices in capital market of Bangladesh by considering variation of returns in terms of change in prices before and after announcing the dividend and find that the stock prices have fluctuated positively with the fluctuation of earnings stream and concluded an inference that dividend policy does not have significant effect on stock prices in the capital market of Bangladesh and concludes that earnings stream can significantly affect the stock prices.

Aivazian *et al.* (2003)[108] examined the dividend policy of a sample of companies from eight emerging markets, and compared them to a sample of 99 US companies. They found that emerging firms displayed dividend behaviors similar to US firms, in the sense that dividends are explained by profitability, debt, and the market-to-book ratio. However, the sensitivity to these variables varies across countries.

Saleh and Nazneen (2005)[109] identify the significant determinants of dividend policy of corporate sectors by employing factor analysis and they are:

(i) Factor of dividend, yield and payout ratio;
(ii) Factor of profitability and capital structure;
(iii) Factors of dividend and earnings volatility;
(iv) Factors of returns, profitability ratios and behavior of share prices and
(v) Factor of firm's profitability, changes in size and composition of firm's capital size

[107] Ranajit K. B., "Signaling effect of dividend policy on share prices in Bangladeshi capital market", *Bank Parikrama*, Vol. XXVIII, No. 1 (2003), pp. 54-74.

[108] V. Aivazian, L. Booth, and S. Cleary, "Do emerging market firms follow different dividend policies from US firms?", *Journal of Financial Research*, Vol. 26, No. 3 (2003), pp. 371–387.

[109] M. Saleh Johur and Suraiya Nazneen, "Determinants of dividend policy-an empirical study of some select corporate sectors in Bangladesh", *The Cost and Management*, Vol. 33, No. 6 (2005), pp. 58-68.

Amidu and Abor (2006)[110] conducted a study on the determinants of dividend payout ratios in Ghana during a six-year period. Using an Ordinary Least Squares model, the results showed positive relationships between dividend payout ratios and profitability, cash flow, and tax. The results also showed negative associations between dividend payout and risk, institutional holding, growth and market-to-book value. However, the significant variables in the results were only profitability, cash flow, sales growth and market-to-book value.

Al-Malkawi (2007)[111] examined the determinants of corporate dividend policy in Jordan using a firm-level panel data set of all publicly traded firms on the Amman Stock Exchange between 1989 and 2000. Using Tobit specifications, the results suggested that the firm's age, size, and profitability positively and significantly affected its dividend policy, while leverage negatively affected the dividend policy.

Al-Twaijry (2007)[112] conducted a research on the dividend policy of 300 firms listed on the Kuala Lumpur stock exchange. The results showed that there were no significant associations between the dividend payout ratios and www.ccsenet.org/International Journal of Economics and Finance Vol. 6, No. 4; 2014 242 the past, present or future net earnings. However, there was a significant negative correlation between the company's financial leverage and its dividend policy.

[110] M. Amidu and J. Abor, "Determinants of dividend payout ratios in Ghana", *The Journal of Risk Finance*, Vol. 7, No. 2 (2006), pp. 136–145.

[111] H. N. Al-Malkawi, "Determinants of corporate dividend policy in Jordan: an application of the Tobit model", *Journal of Applied Accounting Research*, Vol. 23 (2007), pp. 44-70.

[112] A. Al-Twaijry, "Dividend policy and payout ratio: Evidence from the Kuala Lumpur stock exchange", *The Journal of Risk Finance*, Vol. 8, No. 4 (2007), pp. 349–363.

Parua and Gupta (2009)[113] undertook a research on the determinants and trends of dividends in 607 listed Indian companies from 1993 to 2005. They found that past, current and expected future profits had significant positive role in determining the dividend payout ratio. Evidence showed that the cash balance and cash flow had significant negative relationship with the dividend rate. Factors like Interest expense, capital expenditure, tax ratio and share price had almost no role on the dividend payment.

Okpara (2010)[114] analyzed the determinants of the dividend Payout policy of firms from Nigerian Securities and Exchange Commission. They found that profitability negatively affected the payout ratio whereas liquidity and previous year's dividend exerted a positive impact on the payout ratio. Therefore, they concluded that these three factors (profit, liquidity and previous year's dividends) were good predictors of the dividend payout policy in Nigeria.

Al Ajmi and Hussain (2011)[115] aimed to study the dividend decisions of a sample of 54 Saudi Arabian listed firms during 1990 - 2006. They found that Saudi firms had more flexible dividend policies since they were willing to cut or skip dividends when profit declines and pay no dividends when losses were reported. Lagged dividend payments, profitability and cash flows were found to be determinants of dividend payments.

[113] A. Parua, and A. Gupta, "Dividend history and determinants in selected Indian companies", *Australasian Accounting Business and Finance Journal*, Vol. 3, No. 4 (2009), pp. 45–86.

[114] G. C. Okpara, "A diagnosis of the determinant of dividend pay-out policy in Nigeria: A factor analytical approach", *American Journal of Scientific Research*, Vol. 8 (2010), pp. 57–67.

[115] J. Al-Ajmi and H. Hussain, "Corporate dividends decisions: Evidence from Saudi Arabia", *The Journal of Risk Finance*, Vol. 12, No. 1 (2011), pp. 41–56.

Imran (2011)[116] empirically investigated the factors affecting the dividend payout decisions of Pakistan engineering sector using the data of 36 listed firms during 1996–2008. Using various panel data techniques, he found that the dividend payout was positively affected by last year's dividend, earning per share, profitability, sales growth and the size of the firm, whereas it was negatively affected by the cash flow.

Finally, **Sinaei and Habibi (2012)**[117] aimed to study the determinants of the dividend payout ratio on firms listed in The Tehran's Stock Exchange (TSE) from 1999 to 2008. The results showed that there was a significant and negative relationship between the dividend payout ratio and market-to-book ratio and capital expenditure. On the other hand, there was a positive relationship with the compensation and debt to equity ratio (financial leverage).

1.7.1 Research Gap and the Present Study

From the review of literature it is clear that no intensive research work has been conducted in this field. Exclusive literature on Dividend Policy Practices in Corporate Firms of Bangladesh is too limited to make a comprehensive review. Although, some researchers and academicians did some works on capital market of Bangladesh for different purposes, no in-depth study on the dividend policy culture and practices of corporate firms was

[116] K. Imran, "Determinants of dividend payout policy: A case of Pakistan engineering sector", *The Romanian Economic Journal*, Vol. 41(2011), pp. 47–59.

[117] A. Sinaei and L. Habibi, "An investigation of factors relevant to payout ratio in listed firms on the Tehran stock exchange", *International Journal of Multidisciplinary Management Studies*, Vol. 2, No. 2 (2012), pp. 22–37.

carried out earlier. However, the available literatures are reviewed here to find the existing knowledge gaps in the subject selected for this study.

The issue of dividend policy is important for several reasons. Firstly, researchers have found that a firm uses dividends as a mechanism for financial signaling to the outsiders regarding the stability and growth prospects of the firm. Secondly, dividends play an important role in a firm's capital structure. Yet another set of studies have established the relationship between firm's dividend and investment decisions (Saxena, 1999)[118].

This research attempts to investigate the dividend policy practices and behavior, trends and determinants and also subsequent reaction on security prices to the announcement of dividends in our capital market.

1.7.2 Justification of the Study

From the last few years our capital market has started a new journey to achieve a sustainable development after the big crash in 2010 so that it could be the new emerging market of the world. Certainly, there is a direct impact of the capital market on the GDP. Also in near future this market could help the entrepreneur to come in business by raising capital which is scarce in our country. So establishing more and more business firm can make our country developed. For this reason it is our duty to develop the capital market to at a high level of organized as well as reliable so that investors can feel comport and

[118] A. K. Saxena, "Determinants of Dividend Policy: Regulated Versus Unregulated Firms", Paper Presented at the Financial Management Association Conference (1999).

safe of their investment. Since investors are only the core stakeholder of this market, our duty is to serve them with different researches outputs which are related to capital market.

In this point of view, this study contributes significantly to fill up the existing knowledge gap about the capital market of our country. This study findings would be an immense helpful to the investors of our capital market to take sound decision regarding selecting the company for their investment. Moreover, this study draws attention to the portfolio investors, security analysts, policy-making bodies, and especially regulatory bodies of our capital markets. This study obviously provides a clear guideline to the stakeholders associated in the market and especially to the outsider investors and to the regulatory bodies. Finally this study adds new knowledge, behavior and attitude and expectations of the investors regarding the dividend decision of the corporations. The management of the corporate firms could use the findings of the research output while they decide to announce dividend for the investors.

1.8 Scope and Limitation of the Study

The study is conducted on the companies that are listed and actively traded in DSE (Dhaka Stock Exchange). It encompasses only the impression of cash dividend and stock dividend announcement on the share price of the companies. No other factors such as political, economical are not considered here. Also the method used here "event study" provide fairly accurate result for the short run effect of the particular event. So the decision based on the study should be limited to the short run effect.

In every research there are limitations. The present study is not an exception. The major limitation of this study is the exclusion of financial sector. Consideration of only fifteen years period and especially not incorporation of the period before 2000 and use of only secondary data are the most remarkable limitations. In evaluating the growth trends of price of the shares we used data from the year 2000-2014. But the interpretation of the data may be questioned due to a particular year i.e., 2010 (which could be termed as a boom year for the investors, even though a record fall in December created huge panic among the investors) alone has contributed a lot to the fluctuation of the real situation. However, this problem is so critical that anybody involving this sort of research could face such problem and we are no exception to it. However, considering this particular limitation we were very much careful in analyzing the growth trend keeping in view the particular years' activities into consideration. The interpretation of the data as reflected in this study may however be a little bit twisting regarding which we are completely aware. This particular limitation is because of the abnormal (2010) year and not because of our weak tools or techniques of interpretation. However, some calculations were made excluding this year's data for reflecting the real position.

The major sources of information were collected from the DSE monthly reviews and annual reports of different companies which is a complicated procedure and huge time consuming. Many external factors such as economic and political factors influence the share price which makes difficult to distinguish the true impact of a particular event such as dividend announcement.

I.9 Structure of this Thesis

The whole thesis has been divided into six chapters including this introductory chapter. These are as follows:

Chapter one is the general overview of thesis. It deals with statement of the problem, objectives, theoretical background, and empirical evidence, and focuses the details review of literature.

Chapter two describes the general research methodology of the thesis and conceptual framework. This chapter provides an extensive description of the research methodology of this study including the justification of choosing quantitative research method and data analysis techniques.

Chapter three is designed for the empirical analysis of the dividend trends and growth of the corporate firm of Bangladesh and also examine the relationship between the dividend trends along with the growth trends of market price of share over the last fifteen years.

Chapter four provides the details explanation of the empirical results on the major determinants of the dividend policy practices by the corporate firms of Bangladesh listed on the Dhaka Stock Exchange.

Chapter five provides an extensive literature review on the security price reaction to the announcement of dividends in developed and emerging markets. This part is designed for the empirical analysis on the security price reaction to the announcement of dividends declaration of the corporate firms of Bangladesh listed on Dhaka Stock Exchange and explains the empirical results on this issue.

Finally, **chapter six** represents the summary of the thesis along with major findings and contributions of this thesis to the theories of finance, policy recommendations and conclusions. This also deals with some suggestions for conducting further research in this field. The next chapter analyzes research methodology and conceptual framework.

Chapter

2

Research Methodology

Chapter Two

Research Methodology

2.1 Introduction

Research is defined as any organized inquiry carried out to provide information for the solution of problem (Emory, 1980)[119]

However, research methodology is the process where there is a clear purpose and objective, define the research problem, and develop strategies for the solution of problems that have been identified. In general, the research methodology consists of four major stages: exploration of the situation, development of the research design, data collection, and analysis and interpretation of the results (Emory, 1980).

Moreover, research methodology is the way to handle research problems. There are two methods of research: one, nomothetic, and two, ideographic. These two research methods are also known as inductive method and deductive method (Bryman, 1988)[120]. Typically, quantitative technique deals with either primary or secondary data and solves the research problem through parametric or nonparametric statistical tests. On the other hand, qualitative technique deals with the theoretical issues and concerns about different other dimensions of the research, e. g., behavioral or theoretical research.

[119] C. W. Emory, *Business Research Methods*, Richard D. Irvin. Inc., USA (1980).

[120] A. Bryman, *Quantity and Quality in Social Science Research*, Contemporary Social Research: 18, Series Editor: Martin Bulmer, Routledge: London and New York, (1988).

2.2 Research Methods

There are two types of research methods: one, nornothetic and two, ideographic. Normothetic methodologies have an emphasis on the importance of basing research upon systematic protocol and technique (Burrell and Morgan, 1979)[121]. This is epitomized in the approach and methods employed in the natural science, which focus upon the process of testing hypotheses in accordance with the standards of scientific rigor. Standardized research instruments of all kinds are prominent among these methodologies. Emphasizes therefore placed upon covering-law explanations and deduction, using quantified operationalization of concepts in which the element of motive/purpose/meaning is lost, because of the need for precise models and hypotheses for testing (Gill and Johnson, 1997)[122]. This research is also called deductive method of research. A deductive research method entails the development of a conceptual and theoretical structure prior to its testing through empirical observation (Gill and Johnson, 1997). Ideographic methodologies (Burrell and Morgan, 1979), on the other hand, emphasize the analysis of subjective accounts that one generates by 'getting inside' situations and involving oneself in the everyday flow of life. There is an emphasis upon theory grounded in such empirical observations, which takes account of subjects meaning and interpretational systems in order to gain explanation by understanding (Gill and Johnson, 1997).

However, this method is also called induction method of research. The logical ordering of induction is the reverse of deduction as it involves moving from the 'plane' of observation of the empirical world to the construction of explanations and theories about what has been observed (Gill and Johnson, 1997). In addition, Easterby-Smith *et al.*

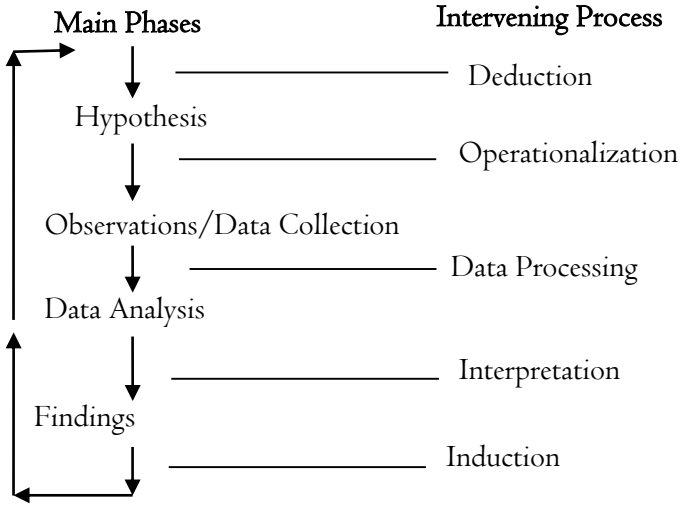
[121] G. Burrell and G. Morgan, *Sociological Paradigms and Organizational Analysis*, Heinemann: London, (1979).

[122] J. Gill and P. Johnson, *Research Methods for Managers*, Paul Chapman: London, 2nd ed., (1997).

(1991)[123] named these two methods as positivism and phenomenology. Positivism views reality as external and objective, with the role of research cast as making reliable and valid observations of this reality in order to test fundamental laws hypothesized from existing theory. In contrast, phenomenological approach is inductive in that researchers build theories and propositions only following a detailed understanding of experience (Creswell, 1994)[124].

Quantitative research is often conceptualized by its practitioners as having a logical structure in which theories determine the problems to which researchers address themselves in the form of hypotheses derived from general theories (Bryman, 1988). However, Creswell (1994) indicates that quantitative studies are characterized by the use of deductive form of logic wherein theories and hypotheses are tested in a cause and-effect order. Concepts, variables, and hypotheses are chosen before the study begins and remain fixed throughout the study (see Figure 2.1).

Figure 2.1: The Logical Framework of the Research



Source: Creswell (1994)

[123] M. Easterby-Smith, R. Thorpe, and A. Lowe, *Management Research: An Introduction*, SAGE Publications: London, (1991).

[124] J. W. Creswell, *Research Design: Qualitative and Quantitative Approaches*. Sage Publications: Thousand Oaks, (1994).

This study follows quantitative research method for many reasons: one, nature of research problem of this study, which is measurable and objective rather than subjective; two, this study tests the consequence of theories in practical world; three, quantitative method possesses high internal validity and generalized; and four, quantitative method stimulates further studies and it is easily reliable, which eventually helps to verify the findings as well as provides direction for the acceptance, modification, or necessary to formulate new theory. Therefore, the logical structure of the quantitative method and the nature of research problem of this study directs to prefer quantitative research method for the research. Application of this method is possible by the use of content analysis method. It links the past events with present conditions and future directions.

There are two ways of collecting data for quantitative research: one, primary data collection; and two, secondary data collection. It is worth mentioning that primary data is quite unable to deal with the nature of the research problems and research questions of this thesis. However, while primary data collection procedure considers different dimension and aspects into the research (e. g., opinion survey), this process is problematic for many reasons: one, lack of response; two, unreliable data; three, different opinion from open end questionnaire; four, less consideration of opinion in case of close end questionnaire; five, difficult to conduct panel study; six, costly; and seven, time consuming. On the other hand, secondary data collection is easier and less time consuming. It is also possible to explore the data for patterns of change and continuity (longitudinal analysis of data) as opposed to a static cross-sectional analysis. However, secondary data is free from subjectivity. Secondary data can also provide a means of

triangulating data (Blumer, 1984)[125]. In addition, as this research employs panel study, it needs to collect data for the same companies for several years (15 years), which is virtually complicated in case of primary data collection. Therefore, these are the reasons to collect data from secondary sources for this study.

Finally, in order to solve the research problems in the capital market, this study employs content analysis and quantitative research methods and collects secondary data from the annual reports of relevant companies, different issues of monthly reviews of Dhaka Stock Exchange Limited.

2.3 Sources and Nature of Data

2.3.1 Trends of Dividend Payment (2000 – 2014)

Dividend payment pattern of all companies that are listed for trading on Dhaka Stock Exchange 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 largely used. The secondary data are collected from different Annual Reports of companies, Bangladesh Securities and Exchange Commission's (BSEC) Annual Reports and the BSEC Quarterly Review, the Dhaka Stock Exchange's (DSE) Annual Reports and the DSE Monthly Review, Closing Quotation Register and database archives of DSE website, Local and International

[125] M. Blumer, "Sociological Research Methods: An Introduction", Basing Stoke: McMillan, (1984).

journals. The daily quotation published by the DSE, Financial Express's daily quotation and investment journals (such as the Share Bazar) have also been used for collection of Data. However, some primary data and information are collected from DSE head office and the investors. Besides, discussions were held with DSE officials, with the researchers engaged in capital market studies, policy makers, industrialists and resource persons.

2.3.2 Determinants of Dividend Policy

The study is based on unbalanced panel data of non-financial sector companies listed on Dhaka Stock Exchange (DSE). The variables examined in this study consist of secondary yearly data collected mainly from DSE website and annual report of non-financial sector companies listed companies. Since the latest period of available data on DSE is 2014, the time frame of the research are limited to the period from 2000 to 2014. In this study, a purposive sampling technique is employed in selecting non-financial sector companies. To be included in the analysis, non-financial sector companies must meet three criteria, which are: (i) the companies which have paid cash dividend (ii) the companies which have paid at least 5 years' cash dividend and (iii) the companies which have all available market data in the stock exchange.

2.3.3 Impact of Dividend Payment Practices on Share Price

Dividend payment pattern of all companies that are listed for trading on Dhaka Stock Exchange (DSE) during the period 2014 are considered for analysis. For the purpose of this study, only final cash dividends and the stock dividends are considered separately and stock repurchases and companies that paid both type of dividend are not considered. **The secondary data is collected only from the DSE archive**[126] no other sources are used to insure the accuracy of data.

[126] Data archive is available at www.dsebd.org/data_archive.php

2.4 Data and Sample Design

2.4.1 Sample Selection Criteria of Trends of Dividend Policy

Primarily, the Dhaka Stock Exchange listed all companies 263 as on June 2014[127] took into account. Investment companies (41 mutual funds) are excluded because these are the portfolios of the Dhaka Stock Exchange 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. The companies are then excluded from the samples which have all company data missing. The companies are then excluded from the samples which have all market data missing. The companies or particular years for certain companies are excluded from the sample where outliers massively pushing up or pulling down the average tendency of any particular variable. At last this study purposively took 92 companies which declared and paid only cash dividend and only bonus dividend at least five years throughout the sample period 2000-2014.

2.4.1.1 Sample Size and Period of Trends of Dividend Policy

(a) Sample Size: The final sample consists of 92 Dhaka Stock Exchange listed companies.

(b) Sample Period: Fifteen years period (2000-2014) is considered for this study.

Table 2.1: 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

[127] DSE Monthly Review, June 2014, p.10.

The final sample includes 92 Dhaka Stock Exchange listed non-financial companies classified as fifteen sectors (Cement, Ceramics, Engineering, Food and Allied, Fuel and Power, IT, Jute, Textile, Pharmaceuticals and Chemicals, Paper and Printing, Services and Real Estate, Tannery, Telecommunication, Travel and Leisure and Miscellaneous sector). However, all these 92 nonfinancial sector companies are classified as cement, ceramic, engineering, food and allied, fuel and power, jute and textile, IT, pharmaceuticals and chemicals, services and real estate, tannery, telecommunication, travel and leisure and miscellaneous sectors. Table 2.2 displays sector wise sample distributions.

Table 2.2: 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 and 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
Total	**163**	**92**	

Source: DSE Data archive and compiled by the author.

2.4.2 Sample Selection Criteria of Determinants of Dividend Policy

The study is based on unbalanced panel data of non-financial sector companies listed on Dhaka Stock Exchange (DSE). In this study, a purposive sampling technique is employed in selecting non-financial sector companies. To be included in the analysis, non-financial sector companies must meet three criteria, which are:

(i) the companies which have paid cash dividend (ii) the companies which have paid at least 5 years' cash dividend and (iii) the companies which have all available market data in the stock exchange.

2.4.2.1 Sample Size and Period of Determinants of Dividend Policy

(a) Sample Size: The final sample consists of 54 Dhaka Stock Exchange listed companies.

(b) Sample Period: Fifteen years period (2000-2014) is considered for this study.

Table 2.3: 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	54

The final sample includes 54 Dhaka Stock Exchange listed non-financial companies classified as cement, ceramic, engineering, food and allied, fuel and power, jute and textile, IT, pharmaceuticals and chemicals, services and real estate, tannery, telecommunication, travel and leisure and miscellaneous sectors.

Table 2.4: Sector Wise Sample Distributions

Name of Sector	Number of Listed Company	Sample Included only Cash Dividend Paid Company
Cement	07	03
Ceramic	05	01
Engineering	25	07
Food and Allied	18	04
Fuel and Power	16	09
Jute and Textile	37	08
IT	06	00
Pharmaceuticals and Chemicals	26	12
Service & Real-estate	03	02
Tannery	05	03
Telecommunication	02	01
Travel & Leisure	03	00
Miscellaneous	10	04
Total	**163**	**54**

Source: DSE Data archive and compiled by the author.

2.4.3 Sample Selection Criteria of Impact of Dividend Payment Practices on Share Price

Primarily, the Dhaka Stock Exchange listed all companies are 263 as on December 2014. Investment companies (mutual funds) are excluded because these are the portfolios of the Dhaka Stock Exchange listed securities. The companies are then excluded from the samples which have missing data. Those companies are excluded that have provided both cash and stock dividend for the year 2014. Only those companies have been taken into sample that have announced either cash or stock dividend.

2.4.3.1 Sample Size and Period of Impact of Dividend Payment Practices on Share Price

(a) Sample Size: The final sample includes 60 (30+30), 30 listed companies with DSE that provided only cash dividend plus 30 listed companies with DSE that have provided only stock dividend for the year 2014.

(b) Sample Period: 30 days prior to dividend announcement and 30 days after the dividend announcement, a total of 61 days is considered for this study.

The final sample includes 60 (30+30) Dhaka Stock Exchange listed companies that are randomly chosen from 22 different sectors. However, the sample is selected randomly to avoid stochastic pattern and any kind of biasness. The study employs daily closing price of the securities chosen and corresponding market index (DSE X index) at Dhaka Stock Exchange and covers the period January 2014 through November 2015 to identify whether dividend announcement convey any information to the market that results a price reaction for adjusting the dividend announcement information. For the purpose of this study, only final cash dividends and stock dividends are considered and stock repurchases are not considered.

2.5 Techniques of Data Analysis

Data collected from different sources are computed and analyzed by the researcher by applying Eviews Software. Computer software MS Excel 13 is also used for detail statistical analysis. To make the data more meaningful, those were analyzed in tabular forms, percentages, mean, median, standard deviation, time series and in some other statistical forms according to their suitability and needs of the study.

2.5.1 Trends of Dividend Policy

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

$$DPS_{j,t} = \frac{Dividend_{j,t}}{EQ\,Cap_{j,t}}$$

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

$$DPR_{j,t} = \frac{Dividend_{j,t}}{EAT_{j,t}}$$

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

$$DY_{j,t} = \frac{DPS_{j,t}}{\text{Price}_{j,t-1}}$$

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.

2.5.1.1 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."[128] 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

[128] Hornby, *op.cit.*, p. 527.

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.

2.5.1.2 Simple Growth Rate (SGR)

It simply gives the percentage increase over the previous year. The following equation represents this rate:

$$SGR = \frac{Y_t - Y_{t-1}}{Y_{t-1}}$$

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.

2.5.1.3 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:

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

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.

2.5.1.4 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.[129] In the same direction John R. Stockton and Charles T. Clark 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."[130] To avoid the problem, Robert D. Mason 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.[131] BISR[132] Bhuyan and Akhtaruddin,[133] A.S. Chawla[134] etc. applied the Ordinary Least Square (OLS) method to fit the semi-logarithmic trend equation. The form of the semi-logarithmic trend equation is:

$$\log Y = A + BX \quad \text{..... (Eq. 1)}$$

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[129] Birla Institute of Scientific Research (BISR), *Banks Since Nationalization* (New Delhi: Allied Publishers Private Limited, 1981), p. 52.

[130] R. Stockton John and T. Clark Charles, *Introduction to Business and Economic Statistics* (Cincinnati, Ohio: South Western Publishing Co., 1971), p. 497.

[131] D. Mason Robert, *Programmed Learning Aid for Business and Economic Statistics*, (Homewood Illinois: Learning Systems Company, 1978), p. 139.

[132] BISR, *op.cit.*, p. 52.

[133] M.S.R. Bhuyan and Md. Akhtaruddin, "Productivity in Uttara and Pubali Banks during Nationalised and Denationalised Periods: A Case Study of Commercial Bank in Bangladesh", *Bank Parikrama*, Vol. XIV, Nos. 3 and 4, (Dhaka, September and December, 1989), pp. 100-125.

[134] A.S. Chawla, *Nationalisation and Growth of Indian Banking* (New Delhi: Deep and Deep Publications, 1987), pp. 32-33.

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 = Point in time.

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:

$$TGR = [anti\log(B) - 1]100 \quad \text{..... (Eq. 2)}$$

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.[135] 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.

Here the null hypothesis is:

H_0: B = 0, and the alternative hypothesis is.

H_1; B ≠ 0.

If the null hypothesis were rejected, it would imply that the growth rate as well as the total regression was significant (at the above level).

[135] Ibid.

2.5.1.5 Regression Analysis

In this study, Eviews Software is applied to analyze the collected data. There are one independent variables being used in this study and that variable is taken sometimes Year, Cash Dividend and sometimes Bonus Dividend. To find the TGR we used time series data and to find the relationship between Price and Dividend by regression we used panel data. It contains information of Dhaka Stock Exchange listed non-financial sector companies. Therefore, unbalanced panel estimation techniques are used in this study.

Firstly, we checked stationarity of each variable because major problem of time series data may be non stationary. In this study to test stationarity 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 might be used to check normality.

As in all cases we used one explanatory variable so, there is no chance to get "heteroscedasticity" and "multicollinearity" problem. In the same time by testing stationary we reduced the chance of having "auto-correlation". So we didn't went for these tests.

2.5.2 Determinants of Dividend Policy

2.5.2.1 Multiple Regression Equation

Typically, the researchers identify the dependent and independent variables and choose the proxies for the variables depending on the previous empirical evidences in this case. Researchers then run the multiple regression equation based on the selected proxies. In this approach, more emphasis is given to the previous studies for identifying variables.

Michaelsen (1961), Gerber (1988), Holder *et al.* (1998), and Saxena (1999) adapted this approach in their empirical studies.

In this study, Eviews 8 software is applied to analyze the collected data. There are 5 independent variables being used in this study and they are Return on equity, Earning per share, firm size, Net asset value, Lag observation value dividend payout ratio. Although the data consists of both cross sectional and time series information, it contains equal information of Dhaka Stock Exchange listed non-financial sector companies over in the sample for the entire period. Therefore, unbalanced panel estimation techniques are used in this study.

Firstly, we checked stationarity of each variable because major problem of time series data may be non stationary. In this study to test stationarity 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 determined Skewness-Kurtosis and Jarque-Bera. The Skewness-Kurtosis and Jarque-Bera Statistics might be used to check normality.

Thirdly, In the presence of residuals serial correlation, statistical inferences can be misleading. So we tested of residuals serial correlation. The Durbin Watson test is only applicable to test serial correlation in time series. But in case of dynamic panel data the Durbin Watson test may mislead. So we use GMM (Arellano-Bond) serial correlation test.

Fourthly, Multiple Regression is done to build a suitable model for dividend payout ratio in Bangladesh without multicolinearity among influential factors. Multicollinearity refers

to the situation in which independent variables are highly correlated; resulting in a paradoxical effect. To test multicolinearity we use Pearson correlation matrix.

Fifthly, since this study used a panel data, there are two types of panel estimator approaches that can be employed, namely: fixed effects models (FEM) and random effects models (REM). To examine whether individual effects are fixed or random, a Hausman specification test is used.

2.5.2.2 Variables Definition

Dependent Variable

In line with previous studies that examined the main determinants of dividend payment, the dependent variable used in this study is the dividend payout ratio (CASHDIV), defined as the dividend paid divided by net income (Rozeff, 1982; Lloyd, 1985; Amidu & Abor, 2006). This variable measures the percentage of the company's earning distributed to shareholders.

Independent Variables

Although there are plenty of potential determinants for the dividend decisions, the explanatory variables that are included in this study are only internal variables which consist of profitability, size, NAVPS and previous year's dividend.

Profitability

Previous researchers have found profitability as one of the most important determinants of dividend payout policy. However, the results on relationship of profitability and dividend payout have been mixed. As per the pecking order theory, the firms will prefer to rely more on internal funds or retained earnings as a result the firms will have a

tendency of paying less dividend and hence having more retained earnings. Hence, the profitable firms will prefer lower dividends. Amidu and Abor (2006) have maintained that there is highly negative and significantly associated with the dividend payout, which shows that the firms invest in their assets rather than paying dividends to shareholders. Similarly, Kania and Bacon (2005) have found that the higher the return on equity, the greater is the firms retained earnings for reinvestment or the lower is the dividend payout. Contrary to it, there are many studies which have proved that the profitability is positively related to the dividend payout ratio. Profitable firms with more stable net earnings can afford larger free cash flows and therefore pay larger dividends. The higher profitable firms pay higher dividends. Aivazian, Booth and Cleary (2003) and Li and Lie (2006) have maintained that firms are more likely to raise their dividends if they are large and profitable.

Measure of Profitability: The profitability has been measured by Return on Equity as calculated:

$$ROE = \frac{\text{Net Profit after Preference Dividend}}{\text{No. of Equity Shares Outstanding}}$$

Earnings per Share (EPS) $= EPS = \dfrac{\text{Net Profit after Tax}}{\text{No. of Equity Shares Outstanding}}$

Hypothesis: The profitability of the company has a positive effect on the dividend policy.

Previous year's dividends (CASH DIV (-1))

In the real world, it is often believed that companies pay a steady stream of dividends because investors perceive firms with stable dividends as stronger and more valuable. Lintner (1956) showed that historical dividends are essential in determining current

dividends. The model was tested and reaffirmed by Fama and Babiak (1968), Ahmed and Javid (2009) and Mollah (2009) who concluded that the previous year's dividends positively affect the current dividend payout ratio of a company. In this study, the last year's dividends payout is used as a proxy variable for historical dividends.

Hypothesis: Previous year's dividends of the company has a positive effect on the dividend policy.

Net Asset Value per Share (NAVPS)

The net asset value per share can be defined as an expression for net asset value that indicates the value per share. The previous literature assumed that there is a relationship between the net asset value per share and its dividend policy. There is negative relationship between net asset value per share and its dividend policy found by (Inyiama Ethel, C1., Okwo Mary, and Oliver Ike Inyiama)

Measure of Net Asset Value per Share: The NAVPS is calculated by dividing the total net asset value of the company by the number of outstanding shares.

$$NAVPS = \frac{\text{Net Asset}}{\text{No. of Equity Shares Outstanding}}$$

Hypothesis: Net Asset Value per Share has a negative effect on the dividend policy.

Size

The previous literature assumed that there is a relationship between the firm's size and its dividend policy. The big size companies pay higher dividends and smaller size companies pay less dividends, as they find it difficult to raise funds, as compared to large companies who have easier access to the capital market and hence are less dependent on the internal funds, leading to more capability to pay the dividend.

Measure of Size: The Size of the firm is measured by the natural logarithm of paid up capital.

Hypothesis: the Size of the company has a positive effect on the dividend policy.

All variables used in this study are defined in Table: 2.5 along with the expected sign.

Table 2.5: Variables with Their Symbols and Expectations

Variable Name	Symbol	Predicted Relationship
Previous Year's Dividend Payout	CASHDIV(-1)	Positive
Earnings per share	EPS	Positive
Return on equity	ROE	Positive
Net asset value per share	NAVPS	Negative
Size	SIZE	Positive

2.5.2.3 Research Hypotheses

- H_0: There is no stationary of data between variables.

  H_1: There is a stationary of data between variables.
- H_0: Residuals of panel data are normally distributed.

  H_1: Residuals of panel data are not normally distributed.
- H_0: There is no serial correlation between error terms.

  H_1: There is serial correlation between error terms.
- H_0: There is no multicollinearity among variables.

  H_1: There is multicollinearity among variables.
- H_0: Random effect model is appropriate for panel regression analysis.

  H_1: Fixed effect model is appropriate for panel regression analysis.
- H_0: There is no significant influence of Profitability, NAV, Firm size, previous year's dividend on dividend pay-out ratio.

  H_1: There is significant influence of Profitability, NAVPS, Firm size, previous year's dividend on dividend pay-out ratio.

2.5.2.4 Model Specification

Although the data consists of both cross sectional and time series information, it does not contain equal information of Dhaka Stock Exchange listed non-financial sector companies over in the sample for the entire period. Therefore, unbalanced panel estimation techniques are used in this study. Panel techniques take into account the heterogeneity present among individual companies, and allow the study of the impact of all factors with less colinearity among variables having more degree of freedom and greater efficiency.

Similarly in previous studies, a linear regression is used to capture the effect of various factors on non-financial sector companies' dividend payout ratio which is as follows:

$$y = \alpha + \beta_i x_{it} + e_{it} \ldots\ldots\ldots\ldots\ldots\ldots\ldots \text{(Eq. 3)}$$

Where: y represents the dependent variable, which is the firm's CASHDIV;

X contains the set of explanatory variables in the model mentioned above, which are CASHDIV (-1), EPS, ROE, NAVPS, and SIZE;

$e_{i,t}$ is the disturbance term;

α is taken to be constant over time t and specific to the individual cross-sectional unit I;

i and t denote the cross-sectional and time-series dimension respectively;

So the model in our research can be rewritten as follows:

$$CASHDIV_{it} = \alpha + {}_1CASHDIV_{i,t-1} + {}_2EPS_{it} + {}_3ROE_{it} + {}_4NAVPS_{it} + {}_5SIZE_{it} + e_{it} \ldots.. \text{(Eq. 4)}$$

The panel model in equation (4) includes the lagged dependent variable as one of the explanatory variables and thus the use of ordinary least squares (OLS) estimator could lead to inconsistent estimates. Allowing fixed effects with time dummies we can remove time invariant within group omitted variable bias. Still there is a clear simultaneity

problem as the lagged dependent variable is correlated with the error term by virtue of its correlation with the time-invariant component of the error term. In this case, the usual approach to estimating a fixed-effects model the least squares dummy variable estimator (LSDV) generates a biased estimate of the coefficients because the lagged dependent variable is correlated with the error term, even if it is assumed that the error term is not itself auto correlated (Greene, 2003).

Therefore, in presence of lagged dependent variable as a regressor, the usual ordinary least squares (OLS) estimator suffers from biases due to unobserved heterogeneity and possible endogeneity of the regressors. Due to the possibility of unobserved firm-specific effects, the OLS estimator may result in upward–biased estimates of the autoregressive coefficients if firm-specific effects are important (Bond, Elston, Mairesse and Mulkay, 1997). A within group estimator (LSDV), after transforming the data to deviations from firm mean, in order to eliminate firm-specific fixed effects, is not consistent either because the transformed lagged dependent variable and the transformed error term are negatively correlated (Nickell, 1981).

This issue may be addressed by applying the generalized method of moment (GMM) dynamic panel estimator where the endogenous explanatory variables are instrumented with their suitable lags so that the instruments are not correlated to the error term. Anderson and Hsiao (1982) suggested a first-differenced transformation to eliminate time invariant fixed effects and constant in GMM estimation. Arellano and Bond (1991) argue that the Anderson-Hsiao estimator fails to take all orthogonality conditions and thus the estimator becomes inefficient. They propose a difference GMM estimator, allowing lagged values of the endogenous regressors as instruments. However, Arellano and Bover (1995) and Blundell and Bond (1998) argue that the lagged level of the

endogenous variables may be poor instruments for the first differenced variables and therefore they suggest lagged differences as instruments, which is popularly known as system GMM.

Although GMM estimates do come with a price of possibly poor finite sample performance, Blundell and Bond (1998) observe that system GMM estimator produces efficiency gain when the number of time series observation is relatively small in Monte Carlo simulations. Furthermore, Beck, Levine, and Loayza (2000) argue that system GMM estimator is efficient in exploiting time series variations of data, accounting for unobserved country specific effects, allowing for the inclusion of the lagged dependent variables as regressors and thereby providing better control for endogeneity of the entire explanatory variables. Therefore, we emphasize more on two-step system GMM estimation in our empirical study although OLS level and Within Group or, fixed effects and random effects estimates are also reported.

Arellano and Bover (1995) and Blundell and Bond (1998) prescribe several standard tests that are needed to satisfy while using system GMM estimators. F-test examines the joint significance of the estimated coefficients. The validity of the instruments used can be tested by reporting both a Hausman test of the over-identifying restrictions, and direct tests of serial correlation in the residuals or error terms. The key identifying assumption in Hausman test is that the instruments used in the model are not correlated with the residuals. The AR (1) test checks the first order serial correlation between error and level equation. The AR (2) test examines the second order serial correlation between error and first differenced equation. The null hypotheses in serial correlation tests are that the level

regression shows no first order serial correlation as well as the first differenced regression exhibit no second order serial correlation.

All tests necessary for the empirical study are performed by using Eviews 8.

2.5.3 Impact of Dividend Payment Practices on Share Price

This study follows quantitative research method for many reasons: one, nature of research problem of this study, which is measurable and objective rather than subjective; two, this study tests the consequence of theories in practical world; three, quantitative method possesses high internal validity and generalized; and four, quantitative method stimulates further studies and it is easily reliable, which eventually helps to verify the findings as well as provides direction for the acceptance, modification, or necessary to formulate new theory. Therefore, the logical structure of the quantitative method and the nature of research problem of this study directs to prefer quantitative research method for the research. Application of this method is possible by the use of content analysis method. It links the past events with present conditions and future directions.

2.5.3.1 Research Questions

To conduct this study following research questions are formulated.

i) What is the significance of dividend in explaining stock price or what is the relationship between dividend and stock price.
ii) What is the impact on stock price following a cash dividend announcement?
iii) What is the impact on stock price following a stock dividend announcement?

2.5.3.2 Hypothesis

Stock prices usually response to dividend announcement showing some abnormal returns at least in the short run. Therefore, some hypothesis are drawn on the basis of abnormal return.

Cash Dividend	Stock Dividend
For Regression Analysis: Null Hypothesis: $H_0\ \beta = 0$ Alternative Hypothesis: $H_a\ \boldsymbol{\beta} \neq 0$	*For Regression Analysis:* Null Hypothesis: $H_0\ \beta = 0$ Alternative Hypothesis: $H_a\ \boldsymbol{\beta} \neq 0$
✓ Null Hypothesis: H_0 *means* there is no significant relationship between cash dividend and stock price. ✓ Alternative Hypothesis: H_a means that there is significant relationship between cash dividend and stock price.	✓ Null Hypothesis: H_0 *means* there is no significant relationship between stock dividend and stock price. ✓ Alternative Hypothesis: H_a means that there is significant relationship between stock dividend and stock price.
For Event Study: Null Hypothesis: $H_0\ \overline{\boldsymbol{MAAR_t}} = 0$ Alternative Hypothesis: $H_a\ \overline{\boldsymbol{MAAR_t}} \neq 0$	*For Event Study:* Null Hypothesis: $H_0\ \overline{\boldsymbol{MAAR_t}} = 0$ Alternative Hypothesis: $H_a\ \overline{\boldsymbol{MAAR_t}} \neq 0$
✓ H_0 (Null) Cash dividend announcement causes no abnormal return in the stock price. ✓ H_a (Alternative) Cash dividend announcement shows abnormal return in the stock price.	✓ H_0 (Null) Stock dividend announcement causes no abnormal return in the stock price. ✓ H_a (Alternative) Stock dividend announcement shows abnormal return in the stock price.

Assuming that prices of both windows are normally distributed and are independent of each other; statistical significance of the hypothesis tested by using pooled t-test at 90% and 95% confidence level.

2.5.3.3 Regression Analysis

In very general terms, the main perspective of regression analysis is to describe and evaluate the relationship between a given variable and one or more other variables. More specifically, regression is an attempt to explain movements in a variable by reference to movements in one or more other variables.

To make this more concrete, denote the variable whose movements the regression seeks to explain by y and the variables which are used to explain those variations by X_1, X_2, . . ….. , X_k. Hence, in this relatively simple setup, it would be said that variations in k variables (the Xs) cause changes in some other variable, Y.

2.5.3.4 Model Specification

In this study OLS regression analysis is conducted to explain relationship among stock price and the dividend payment during the post and pre announcement period. More specifically we try to grasp the significance of the dividend only in explaining stock price. As we are trying to identify the significance of the single variable "dividend" in explaining stock price, no other variable is considered here. So in this relatively simple regression model "Dividend" is the independent variable (Xi) and "Stock Price" is the dependent variable (Yi).

So the model is:

$$\boldsymbol{Y_i = \alpha + \beta X_i + e_i} \quad \text{.....} \text{(Eq. 5)}$$

Where,

$Y_i =$ is the dependent variable stock price.

α = is the intercept term of the OLS regression model.

β =is the slope coefficient of the independent variable dividend.

e_i = is the error term of the model.

In the study the variable stock price is the average stock price during the event window (30 days prior and 30 days after the dividend announcement). The sample size N = 30 different companies that have been paid either cash dividend or stock dividend in the year 2014. We have also tried to ascertain the significance of cash dividend and stock dividend separately in explaining the stock price so that implication of cash dividend and stock dividend can be recognized separately.

As the study is dealing with cross-sectional data we suspect that the data might be suffering from the problem of heteroscedasticity or unequal variance, which means the assumption of homoscedasticity, or equal variance, is not satisfied. So the data are tested for heteroscedasticity before the regression analysis.

2.5.3.5 Heteroscedasticity Test

We have used Breusch-Pagan (BP) test to determine whether the data are homoscedastic or not. This test involves the following steps:

(1) Estimate the OLS regression, as in Eq. 5, and obtain the squared OLS residuals, e_i, from this regression.

(2) Regress e_i^2 on the k regressors included in the model; the idea here is to see if the squared residuals (a proxy for true squared error term) are related to one or more X variables, which means we run the following regression,

$$e_i^2 = A + \beta X_i + v_i \quad \ldots\ldots\ldots\ldots \text{(Eq. 6)}$$

Where,

A = the intercept term.
β= beta coefficient of X_i
and, v_i = error term of the model.

(3) The null hypothesis here is that the error variance is homoscedastic - that is, all the slope coefficients in (Eq. 6) are simultaneously equal to zero. Wecan use the F statistic from this regression with (k-1) and (n-k) in the numerator and denominator df, respectively, to test this hypothesis. If the computed F statistic in (Eq. 6) is statistically significant, we can reject the hypothesis of homoscedasticity. If it is not, we may not reject the null hypothesis. However, we have used software Eviews to run the regression and to test for the heteroscedasticity that also uses the same procedure as described above. The regression output and the test results can be found in Appendix C.1 and Appendix C.2; average MAAR and corresponding dividend which is used to run the regression can be found in Appendix C.3. However, all the findings and interpretation can be found in chapter five.

2.5.3.6 Event Study

An event study is employed to measure security price performance around the time of the event of dividend announcement. According to McWilliams and Siegel, 'event study is a statistical method to assess the impact of an event on the value of a firm and this method is gaining popularity in analyzing many situations.'

For example, the announcement of a merger, a takeover, changes in management like CEO's resignation or an issue of dividend payment. All of such events can be analyzed to see how they affect the company's value and react on the company's share price so that financial analysts can refer to the experience this time to make better prediction in the future about whether a similar event will have a positive or negative influence.

2.5.3.7 Event Study Methodology

The basic method of doing event study analysis is to find whether there is an abnormal return caused by a particular event (see figure 2.2). It is widely acknowledged by most financial scholars that the abnormal return is the difference between the actual return and the expected return of a security. The abnormal return will be defined as long as we get the expected return. There are many ways to calculate the expected return of a security, such as the Market Model, the Zero-One Model and the Mean-Adjusted Returns Model. The most popular and the easiest way is to use the Market Adjusted return which measures the index return of all securities, which is assumed to have a liner relationship between the expected return of a company's share price and the stock market index.

2.5.3.8 Steps in Event Study

The following figure shows the details steps in event study which has been followed in this study.

Figure 2.2: Steps in Event Study

Step 1.	Identify specific calendar event dates of a company and set it as an event date point.
Step 2.	Determine the length of both event period and estimation period.
Step 3.	Download the historical files of both share price and stock market index data. The data files should contain the calendar dates of both estimation period and event period.
Step 4.	Calculate the daily returns of individual share price. Normally, daily returns are used, so the returns shall be daily returns. These are actual returns.
Step 5.	Calculate the (daily) expected return of the share price in event period using the daily market index in the event window.
Step 6.	Calculate the (daily) abnormal returns in event period and derive cumulative abnormal return and average abnormal return in event period.
Step 7.	Do significant test for the required results.

2.5.3.9 Selecting the Event Window

For an event study selecting the right window is very important as other variables might affect the dependent variable concerned if the window is too long in duration. On the other hand, if the window is too short, the effect of an event may be incomplete. For the present study the author has considered 61 days event window appropriate for analysis. For the study the returns on the announcement day, returns on 30 days prior to the announcement day, and returns on 30 days after the announcement have been considered for analyzing the cumulative average abnormal returns.

2.5.3.10 Calculating Actual Return

Actual return as opposed to expected return is the return which has been experienced by the investor during the event window. The return is calculated as percentage from the daily prices of the stocks selected here. The formula used here can be defined as the stock price at time t-1 is deducted from the price at time t and finally divided by the price at time t – 1. Formally,

$$AR_{it} = \frac{P_{it} - P_{it-1}}{P_{it-1}} \qquad \text{---------- (Eq. 7)}$$

Where,

AR_{it} = Actual return at time t for security i.

P_{it} = the market price of security i at time t.

P_{it-1}= Market price of security I at time t - 1.

i = 1, 2……30.

t = -30, -29….0……29, 30.

2.5.3.11 Calculating Expected or Normal Market Return

In this study to calculate the market return or normal return the Index model or Market-Adjusted Return Model (MAAR) has been used. The method chosen here is easy to understand and popular as well. Although there are many ways to calculate expected return such as Market Model, Capital Assets Pricing Model, Arbitrage Pricing Model, Factor Model and so on. The formula to calculate the MAR (Market Adjusted Return) can be explained as the market index at time t minus the market index at time t-1 then dividing the index at time t-1 during the event window for the corresponding security. The DSE X index which covers almost 97% of the market is used here as the market index. Formally,

$$MR_{it} = \frac{I_{it} - I_{it-1}}{I_{it-1}} \qquad \text{---------- (Eq. 8)}$$

Where,

MR_{it} = is Market return at time t in the event window of security i.

I_{it}= Market index (DSE X) at time t in the event window of security i.

I_{it-1}= Market index (DSE X) at time t-1 in the event window of security i.

i = 1, 2……30.

t = -30, -29….0……29, 30.

2.5.3.12 Market Adjusted Abnormal Return (MAAR)

Using the Market Adjusted Abnormal Return we have tried to minimize the other factors from affecting both the return on the prices of individual stock and the market returns. Since the percentage change in market price is deducted from the percentage change in the price of the individual share on the respective days, the remainders shows the unsystematic portion of the value change of a particular stock resulted from dividend announcement. The following formula is used to calculate the market adjusted abnormal

returns. The Market Adjusted Abnormal Return (MAAR) is calculated as Actual return at time t minus the Market Return at time t for each selected securities. Mathematically,

$$MAAR_{it} = AR_{it} - MR_{it} \quad \text{---------- (Eq. 9)}$$

Where,

AR_{it} = Actual return at time t for security I and,

MR_{it} = is Market return at time t in the event window of security i.

i = I, 2……30.

t = -30, -29….0……29, 30.

Market Adjusted Abnormal Return (MAAR) for 30 different companies that provided only cash dividend and 30 different companies that provided only stock dividend for the whole event window (30+I+30 = 6I) is calculated by using MS Excel.

2.5.3.13 Average Market Adjusted Abnormal Return ($\overline{MAAR_t}$)

The average MAAR ($\overline{MAAR_t}$) is calculated as the sum of MAAR for all companies divided by the number of all companies for each period in the event window. The formula used here is as follows:

$$\overline{MAAR_t} = \frac{\sum_{i=1}^{N} MAAR_{it}}{N} \quad \text{---------- (Eq. 10)}$$

Where,

$\overline{MAAR_t}$ = The Average Market Adjusted Abnormal Return for period t.

i = I, 2……30.

t = -30, -29….0……29, 30.

The Average Market Adjusted Abnormal Return is calculated by using MS Excel where number of companies N = 30 (for both cash and stock dividend) for time t in the event window. The Average MAAR can be found in Appendix: C.4.

2.5.3.14 Average Cumulative Abnormal Return ($\overline{CAR}$)

The Average Cumulative Abnormal Return ($\overline{CAR}$) is calculated by using the following formula,

$$\overline{CAR_{(l,j)}} = \sum_{t=l}^{j} \overline{MAAR}_t \qquad \text{---------- (Eq. 11)}$$

Where,

$\overline{CAR_{(l,j)}}$= Average Cumulative Abnormal Return for the event window.

$N = 30$ Number of companies.

i = 1, 2……30.

l = -30 and j = + 30

The average cumulative abnormal return is calculated for the 61 days event window by using MS Excel which can be found in Appendix: C.5.

2.5.3.15 Testing of Abnormal Returns

For testing the significance of abnormal returns three types of t-tests can be used, namely the standardized t-test, cross-sectional t-test and the portfolio t-test. However, the study conducted by Saens and Sandoval on the Chilean Stock Market using daily stock returns concluded that the use of standardized t-test is always more effective in detecting the presence of abnormal return than the cross-sectional and the portfolio tests, even in the presence of non-normality of security returns. The earlier writers such as Patell (1976), Brown and Warners (1985) and Dyckman *et al.* (1984) studied randomly selected securities of New York Stock Exchange (NYSE) and American Stock Exchange (AMEX). They concluded that the non-normality problem does not have serious impact on the power of the short-run event study method and that the common parametric t-test may be used to test the null hypothesis. Therefore, even in the presence of non-normality, as the sample were drawn from across different industries with different event

dates and categories of securities, we felt it would be appropriate to use the test statistics specified by Saens and Sandoval (2005), and Odabasi (1998) on an emerging capital market in Latin America, namely the Chilean Stock Exchange. In this study the standardized test has been used to test the presence of abnormal returns in day 0. Under the standardized t-test each abnormal security return is normalized by the estimation period standard deviation using the following steps:

Standardized Abnormal Return (SAR_{it})

SAR_{it} is calculated by using the following formula:

$$SAR_{it} = \frac{MAAR_{it}}{SD(MAAR_{it})} \qquad \text{---------- (Eq. 12)}$$

Where,

SAR_{it}= Standardized abnormal return,

$MAAR_{it}$= Market Adjusted Abnormal Return specified in Eq 6.5 and

$SD(MAAR_{it})$ = standard deviation of each abnormal return which is calculated as:

$$SD(MAAR_{it}) = \sqrt{\frac{\sum_{i=1}^{N}(AR_{it} - MR_{it})^2}{(T-1)}} \qquad \text{---------- (Eq. 13)}$$

Where,

T = is the number of days in the event window for security i.

Average Standardized Abnormal Return ($\overline{SAR_t}$)

Average Standardized Abnormal Return ($\overline{SAR_t}$) is calculated by using the following formula:

$$\overline{SAR_t} = \frac{\sum_{i=1}^{N} SAR_{it}}{N} \qquad \text{---------- (Eq. 14)}$$

Where,

$\overline{SAR_t}$ =Average Standardized Abnormal Return

N = number of sample (30)

Cumulative Standardized Abnormal Return($CSAR_{(il,ij)}$)

$CSAR_{(il,ij)}$ is calculated by using the following formula:

$$CSAR_{(il,ij)} = \sum_{t=l}^{j} SAR_{it} \quad \text{---------- (Eq. 15)}$$

Where,

$CSAR_{it}$ =Cumulative Standardized Abnormal Return.

SAR_{it} =Standardized abnormal return defined above in Eq. 6.8.

i = 1, 2……30.

l = -30 and j = + 30

Average Cumulative Standardized Abnormal Return($\overline{CSAR_{(l,j)}}$)

Average Cumulative Standardized Abnormal Return($\overline{CSAR_{(l,j)}}$) is calculated by using the following formula:

$$\overline{CSAR_{(l,j)}} = \frac{\sum_{t=1}^{N} CSAR_{(il,ij)}}{N} \quad \text{---------- (Eq. 16)}$$

Where,

$\overline{CSAR_{(l,j)}}$= Average Cumulative Standardized Abnormal return

N = 30 number of sample

2.5.3.16 T -Test Approach

To test statistical significance of security price movement around dividend announcement date, the Student t test is employed to measure the significance among the means of the samples, observation and comparison period. The corresponding t values for the event day and for the days surrounding the event are calculated by using the following formula:

$$T_{(t,t)} = \overline{SAR_t} \times \sqrt{N} \quad \text{---------- (Eq. 17)}$$

The test statistic $T_{(t,t)}$ is used to test if the expected value of the average standard abnormal returns on the event day is different from zero. The Average Market Adjusted

Abnormal Return($MAAR_t$) and the corresponding t value can be found in Appendix: C.4.

$$T_{(l,j)} = \overline{CSAR_{(l,j)}} \times \sqrt{N} \qquad \text{---------- (Eq. 18)}$$

Similarly, the $T_{(l,j)}$ test statistic is used to test if the expected value of the average cumulative standardized abnormal return is different from zero over the period from l to j. The above standardized t-tests assume that the individual returns are cross-sectionally independent and identically distributed. By the Central Limit Theorem, the standardized t-test converges to unit normal under the null hypothesis of no abnormal return. For our analysis a 90% level of significance is used for accepting (or rejecting the null hypothesis). The Average Cumulative Abnormal Return ($\overline{CAR_{(l,j)}}$) and their corresponding t value can be found in Appendix C.5.

2.6 Genuineness of Data Sources

With a view to justify the authenticity or genuineness of the documents and books (which is called external criticism) [136] and credibility or trustworthiness of the data within the documents and books (which is known as internal criticism), care has been taken to use the original works and documents, to distinguish between a fact and an opinion and to evaluate and compare between old and recent materials.

[136] D. Lester James, *Writing Research Papers-A Complete Guide,* (Illinois : Scott, Foresman and Company, 1967), pp. 39-42, Rummel, *op.cit.,* pp. 171-173.

In fact, much can be determined about an author's reliability by his care in acknowledging the sources of his information.[137] Adverse opinions among authors, which seem to be equally reliable, are resolved here by weighing and counting the evidence for each point of view and then applying the researcher's value judgment.

2.7 Recapitulation of the Chapter

Chapter two is devoted to analyze methodology and conceptual framework of the study. In this chapter efforts have been made to define methodology and to select a particular method which has been used for this study. In this chapter we have elaborately discussed the sources and nature of data and techniques of data analysis.

The next chapter captioned "Dividend Payment Practices and Analysis of Trends of Dividend of Corporate Firms" analyses the growth trends of dividend payment pattern along with the market price of the corporate firms of Bangladesh over the last fifteen years.

[137] L. Turabian Kate, *Students' Guide for Writing College Papers,* (Chicago: Phoenix Books and the University of Chicago Press, 1965), p. 5.

Chapter

3

Dividend Payment Practices and Analysis of Trends of Dividend

Chapter Three

Dividend Payment Practices and Analysis of Trends of Dividend

3.1. Introduction

One of the major objectives of the present study is to analyze and evaluate the dividend payment patterns of corporate firms of Bangladesh. This chapter is therefore, designed to look into the detailed dividend payment practice and to find out whether there is any relationship between the trends of dividend and the security prices of the listed companies of the DSE over the long run.

For the purpose of this study, only final cash and bonus dividends are considered and stock repurchases are not considered. Unlike the firms in developed countries that pay quarterly dividends, Bangladeshi companies typically pay only one dividend during a year. A few firms do pay interim dividends, however, data regarding these are not readily accessible and it is extremely difficult to get such data for a reasonable number of years. Further, stock repurchases have been permitted only recently and only about a hundred companies have bought back their stocks so far. Hence, in the present study stock repurchases are not considered for analysis.

3.2 Dividend Payment Performance of Listed Companies in the DSE

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: 3.1 gives a clear picture regarding the dividend payment over the years in the DSE.

Table: 3.1 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
Average		**167.28**	**67.20%**	**81.64**	**32.79%**	**3.50**	**376.42**

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

From the Table: 3.1 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.

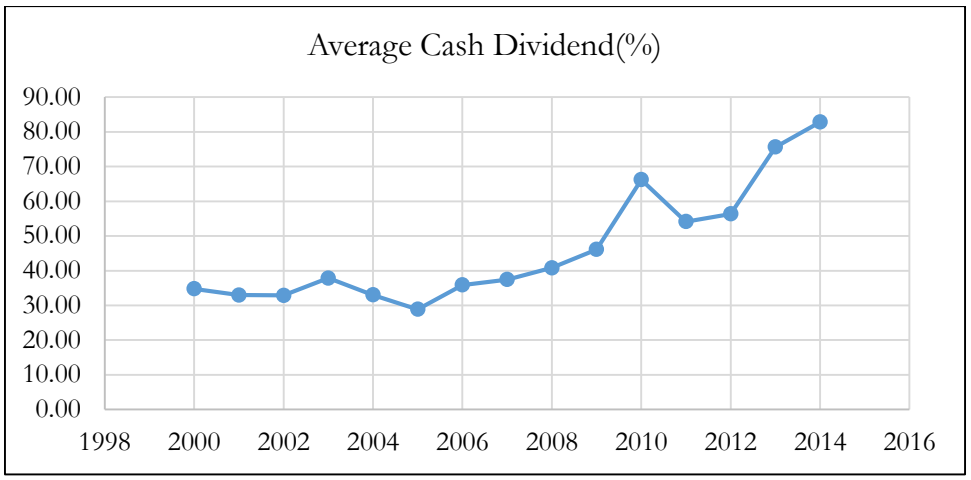
The table further indicates that out of 167 companies, on an average they were paying minimum 3.5% and maximum 376.42% dividend. So, it can be said that most of the listed companies of the DSE, have paid sound dividend to its large number of shareholders.

Table: 3.2 Trends in Cash Dividends of Non-financial Sector of 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.

Figure 3.1: Trends in Cash Dividends during 2000-2014



Source: Table: 3.2

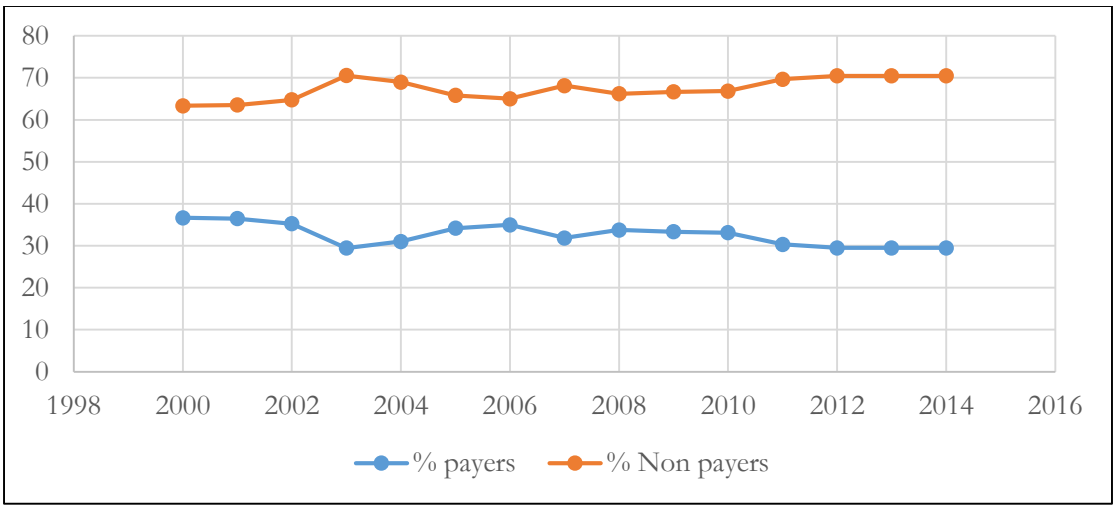
From the Table: 3.2 and Figure: 3.1 it observes that only 54 companies out of total number of listed companies in the DSE were paying cash dividend in between 2000 to 2014 whereas in 2000 the number of companies were 33. So, in last 15 years the number of companies which are paying cash dividend have 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 was paid 5% and maximum was 160%. In 2014 the average cash dividend was 82.81% and the maximum dividend was 550%. So, it can be said 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: 3.3 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.

Figure 3.2: Cash Dividend Paying Behavior of Bangladesh Corporate Firms during 2000-2014 (in %)



Source: Table: 3.3

From the Table: 3.3 and Figure: 3.2 we can see that only 32.6% of the total number of non-financial companies listed in DSE paid cash dividend and 67.4% did not paid any cash dividend. However, 67.20% of total companies listed in DSE (Table: 3.1) paid dividend inform of either cash or bonus.

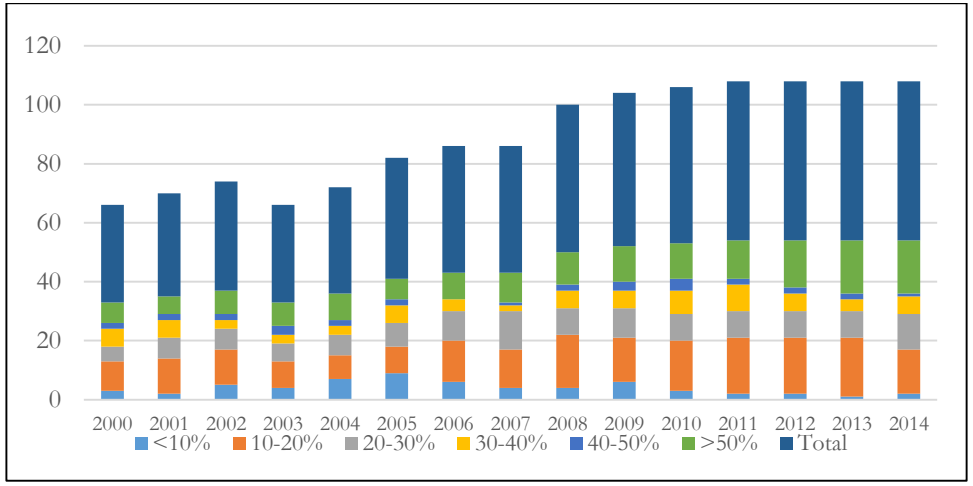
From the Table: 3.3 and 3.4 it appears that the total number of non-financial listed companies in the DSE were 90 in 2000 and out of those 33 companies were paying cash dividend and the rest could not at all paying cash dividend whereas in 2014 out of 183 non-financial listed companies only 54 companies 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 to 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: 3.4 Distribution of Dividend Pay-out Ratio of Non-financial Sector of 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 3.3: Distribution of Dividend Pay-out Ratio



Source: Table 3.4

3.3 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 (Cement, Ceramics, Engineering, Food and Allied, Fuel and Power, IT, Jute, Textile, Pharmaceuticals and Chemicals, Paper and Printing, Services and Real Estate, Tannery, Telecommunication, Travel and Leisure and Miscellaneous sector). However, for our analysis all these 54 nonfinancial sector 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.

3.3.1 Cement Industry

There are 7 companies listed in our capital market under the cement industry. Out of these seven companies only three companies declared and paid cash dividend regularly from the beginning of this study period. The cash dividend declared by cement industry varies between 5 to 380 percent and average cash dividend was 39.56 percent. The following Table: 3.5 shows growth rates of cash dividend and average stock prices of cement industry.

Table: 3.5 Growth Rates of Cash Dividend and Average Stock Price of Cement Industry.

Year	Cash Dividend (Tk.)	Absolute Growth in Dividend	Simple Growth rate (SGR)	Average Stock Price (Tk.)	Absolute Growth in Price	Simple Growth rate (SGR)
2000	40.00			54.59		
2001	26.67	-13.33	-33.33	43.05	-11.54	-21.13
2002	16.67	-10.00	-37.50	35.82	-7.23	-16.79
2003	15.00	-1.67	-10.02	32.46	-3.37	-9.40
2004	15.00	0.00	0.00	36.31	3.85	11.87
2005	12.67	-2.33	-15.53	27.17	-9.14	-25.18
2006	18.67	6.00	47.36	35.41	8.24	30.33
2007	23.33	4.66	24.96	64.31	28.90	81.63
2008	24.00	0.67	2.87	67.53	3.22	5.00
2009	27.67	3.67	15.29	433.17	365.65	541.47
2010	31.00	3.33	12.03	335.25	-97.93	-22.61
2011	30.00	-1.00	-3.23	173.19	-162.06	-48.34
2012	31.67	1.67	5.57	157.95	-15.24	-8.80
2013	141.00	109.33	345.22	216.58	58.63	37.12
2014	140.00	-1.00	-0.71	242.38	25.80	11.91
Average	**39.56**		**25.21**	**130.34**		**40.51**
Compound Growth Rate (CGR)		**9.36**		**Compound Growth Rate (CGR)**		**11.24**

Source: Compiled from various issues of DSE Monthly Review and Working Datasheets.

The growth trend of dividend and price of cement industry is analyzed in Table: 3.5. The table shows that dividend of this industry has increased from 40 percent in 2000 to 140 percent in 2014 which has an average annual simple growth rate (SGR) of 25.21 percent and a compound growth rate (CGR) of 9.36 percent. In the same time price has increased from 54.59 in 2000 to 242.38 in 2014 which has an average annual simple growth rate (SGR) of 40.51 percent and a compound growth rate (CGR) of 11.24 percent. It is observed from the table that the growth rates of dividend and price are positive and the CGRs are very close.

Table: 3.6 Regression Analysis of Trend Growth Rates (TGR) of Cash Dividend and Average Stock Price in Cement Industry.

Regression of Cash Dividend		Regression of Average Stock Price	
Coefficient	0.037941	Coefficient	0.1682
Prob. (t-statistic)	0.0488	Prob. (t-statistic)	0.0004
TGR	9.12	**TGR**	47.30

If we see the probability (prob.) value of t-statistics of the regression model of dividend then we find it as 0.0488 which means that the value of coefficient (B) is statistically significant and there is a significant relationship between dependent variable Dividend and Time. And the Trend Growth Rate (TGR) is 9.12 percent. In case of regression model of price the coefficient is also statistically significant and the Trend Growth Rate (TGR) is 47.30 percent. Over the 15 years dividend and price both have increased.

3.3.2 Engineering Industry

There are 25 companies listed in our capital market under the engineering industry. Out of these 25 companies only 7 companies declared and paid cash dividend regularly from the beginning of this study period. The cash dividend declared by cement industry varies between 5 to 600 percent and average cash dividend was 42.67 percent. The following Table: 3.7 shows growth rates of cash dividend and average stock prices of engineering industry.

Table: 3.7 Growth Rates of Cash Dividend and Average Stock Price of Engineering Industry.

Year	Cash Dividend (Tk.)	Absolute Growth in Dividend	Simple Growth rate (SGR)	Average Stock Price (Tk.)	Absolute Growth in Price	Simple Growth rate (SGR)
2000	46.20			61.49		
2001	50.00	3.80	8.23	124.53	63.04	102.52
2002	42.20	-7.80	-15.60	89.17	-35.35	-28.39
2003	46.00	3.80	9.00	98.00	8.82	9.89
2004	49.00	3.00	6.52	97.41	-0.58	-0.60
2005	32.00	-17.00	-34.69	67.21	-30.20	-31.00
2006	31.00	-1.00	-3.13	55.14	-12.07	-17.96
2007	32.00	1.00	3.23	86.89	31.75	57.58
2008	27.86	-4.14	-12.95	120.15	33.26	38.27
2009	32.29	4.43	15.90	166.35	46.20	38.45
2010	109.43	77.14	238.94	264.73	98.38	59.14
2011	25.86	-83.57	-76.37	171.46	-93.27	-35.23
2012	39.71	13.86	53.59	113.99	-57.48	-33.52
2013	32.43	-7.29	-18.35	133.39	19.40	17.02
2014	44.14	11.71	36.12	168.21	34.82	26.10
Average	**42.67**		**-0.15**	**121.21**		**14.45**
Compound Growth Rate (CGR)		**-0.32**		**Compound Growth Rate (CGR)**		**7.45**

Source: Compiled from various issues of DSE Monthly Review and Working Datasheets.

In Table: 3.7 the growth rates of dividend and price of engineering industry is analyzed. The table shows that dividend of this industry has decreased from 46.20 percent in 2000 to 44.14 percent in 2014 which has an average annual simple growth rate (SGR) of -0.15 percent and a compound growth rate (CGR) of -0.32 percent. In contrast, price has increased from 61.49 in 2000 to 168.21 in 2014 which has an average annual simple growth rate (SGR) of 14.45 percent and a compound growth rate (CGR) of 7.45 percent. Here the relationship between dividend and price is negative as a result the growth rates of dividend is negative while price grows positively.

Table: 3.8 Regression Analysis of Trend Growth Rates (TGR) of Cash Dividend and Average Stock Price in Engineering Industry.

Regression of Cash Dividend		Regression of Average Stock Price	
Coefficient	-0.0114	Coefficient	0.0589
Prob. (t-statistic)	0.605	Prob. (t-statistic)	0.0145
TGR	-2.6	**TGR**	14.52

Here regression of dividend contains the probability (prob.) value of t-statistics is 0.605 which means there is no statistically significant relationship between Time and Dividend. The trend growth rate of dividend may not be reliable in engineering industry and the TGR is -2.6 percent. But in case of regression of price coefficient is statistically significant at 05 percent level of significant and the TGR is 14.52 percent. Dividend and price are moving in opposite direction in this industry.

3.3.3 Food and Allied Industry

There are 18 companies listed in our capital market under the food and allied industry. Out of these 18 companies only 4 companies declared and paid cash dividend regularly from the beginning of this study period. The cash dividend declared by food and allied industry varies between 10 to 620 percent and average cash dividend was 77.64 percent.

Table: 3.9 Growth Rates of Cash Dividend and Average Stock Price of Food Industry.

Year	Cash Dividend (Tk.)	Absolute Growth in Dividend	Simple Growth rate (SGR)	Average Stock Price (Tk.)	Absolute Growth in Price	Simple Growth rate (SGR)
2000	41.67			51.56		
2001	51.67	10.00	24.00	71.89	20.33	39.43
2002	40	-11.67	-22.59	71.51	-0.38	-0.53
2003	38	-2.00	-5.00	79.04	7.53	10.53
2004	38	0.00	0.00	69.12	-9.92	-12.55
2005	21.75	-16.25	-42.76	46.18	-22.94	-33.19
2006	22.25	0.50	2.30	47.47	1.29	2.80
2007	30.5	8.25	37.08	72.88	25.41	53.53
2008	76	45.50	149.18	47.37	-25.51	-35.00
2009	89.75	13.75	18.09	148.98	101.61	214.49
2010	123.75	34.00	37.88	235.45	86.47	58.04
2011	120.25	-3.50	-2.83	218.49	-16.96	-7.20
2012	142.75	22.50	18.71	465.71	247.22	113.15
2013	172.75	30.00	21.02	676.78	211.07	45.32
2014	155.5	-17.25	-9.99	944.58	267.80	39.57
Average	**77.64**		**16.08**	**216.47**		**34.89**
Compound Growth Rate (CGR)		**9.86**		**Compound Growth Rate (CGR)**		**23.09**

Source: Compiled from various issues of DSE Monthly Review and Working Datasheets.

To see the trend of dividend and price of food industry is summarized in Table: 3.9. The table shows that dividend of this industry has increased from 41.67 percent in 2000 to 155.5 percent in 2014 which has an average annual simple growth rate (SGR) of 16.08 percent and a compound growth rate (CGR) of 9.86 percent. In the same time price has increased from 51.56 in 2000 to 944.58 in 2014 which has an average annual simple growth rate (SGR) of 34.89 percent and a compound growth rate (CGR) of 23.09 percent. It has been observed from the table that the growth rates of dividend and price are positive which means they are moving in the same direction. If we just see the CGRs then we find that the price's growth is thrice time than that of dividend.

Table: 3.10 Regression Analysis of Trend Growth Rates (TGR) of Cash Dividend and Average Stock Price in Food Industry.

Regression of Cash Dividend		Regression of Average Stock Price	
Coefficient	0.1251	Coefficient	0.1902
Prob. (t-statistic)	0.0006	Prob. (t-statistic)	0.0001
TGR	33.39	**TGR**	54.95

In Table: 3.10 the Trend Growth Rate (TGR) of dividend and price have been analyzed for food and allied industry. In the left side the result of regression of dividend is shown, the probability (prob.) value of t-statistics is 0.0006 which means the value of coefficient (B) is statistically significant and there is a significant relationship between dependent variable Dividend and Time. Here the value of the coefficient is 0.125122 and the TGR is 33.39 percent. In case of regression equation of price the coefficient is highly statistically significant with a probability value of 0.0001 and the TGR is 54.95 percent. Here the TGR of price is almost double and they are moving together in the same way.

3.3.4 Fuel and Power Industry

There are 16 companies listed in our capital market under the fuel and power industry. Out of these 16 companies only 9 companies declared and paid cash dividend regularly from the beginning of this study period. The cash dividend declared by fuel and power industry varies between 5 to 350 percent and average cash dividend was 54.86 percent.

Table: 3.11 Growth Rates of Cash Dividend and Average Stock Price of Fuel and Power Industry.

Year	Cash Dividend (Tk.)	Absolute Growth in Dividend	Simple Growth rate (SGR)	Average Stock Price (Tk.)	Absolute Growth in Price	Simple Growth rate (SGR)
2000	38.33			135.28		
2001	38.00	-0.33	-0.87	152.20	16.92	12.51
2002	58.33	20.33	53.51	209.24	57.04	37.48
2003	91.67	33.33	57.14	201.43	-7.82	-3.74
2004	41.67	-50.00	-54.55	234.12	32.70	16.23
2005	38.33	-3.33	-8.00	318.19	84.07	35.91
2006	35.00	-3.33	-8.70	203.92	-114.27	-35.91
2007	32.86	-2.14	-6.12	337.29	133.37	65.40
2008	49.25	16.39	49.89	483.54	146.24	43.36
2009	51.38	2.13	4.31	311.70	-171.83	-35.54
2010	63.33	11.96	23.28	429.35	117.65	37.74
2011	62.78	-0.56	-0.88	308.88	-120.48	-28.06
2012	63.33	0.56	0.88	214.22	-94.65	-30.64
2013	75.00	11.67	18.42	222.22	7.99	3.73
2014	83.67	8.67	11.56	369.93	147.72	66.47
Average	**54.86**		**9.99**	**275.43**		**13.21**
Compound Growth Rate (CGR)		**5.73**		**Compound Growth Rate (CGR)**		**7.45**

Source: Compiled from various issues of DSE Monthly Review and Working Datasheets.

From Table: 3.11 it is clear that the trend of dividend is increasing in fuel and power industry. In the same time the trend of price is also positive. The dividend was 38.33 percent in 2000 which has increased to 83.67 percent in 2014. If we look at the price, then we see that it was 135.28 in 2000 which has increased to 147.72 in 2014. The average annual simple growth rate (SGR) of dividend is 9.99 percent and a compound

growth rate of that is (CGR) of 5.73 percent. Price has an average annual simple growth rate (SGR) of 13.21 percent and a compound growth rate (CGR) of 7.45 percent. It has been observed from the table that the growth rates of dividend and price are positive which means they are moving in the same direction and the compound growth rate (CGR) of dividend and price is almost same.

Table: 3.12 Regression Analysis of Trend Growth Rates (TGR) of Cash Dividend and Average Stock Price in Fuel and Power Industry.

Regression of Cash Dividend		Regression of Average Stock Price	
Coefficient	0.0379	Coefficient	0.04922
Prob. (t-statistic)	0.0488	Prob. (t-statistic)	0.0183
TGR	9.12	**TGR**	12.00

Trend Growth Rate (TGR) of dividend and price in fuel industry is shown in Table: 3.12 where the TGR of dividend is placed in the left side and in the right side the TGR of price. In both cases the value of coefficient (B) is statistically significant at 5 percent level of significant. The TGR of dividend is 9.12 percent and the TGR of price is 12.00 percent which express the positive and almost same proportional movement.

3.3.5 Pharmaceuticals and Chemicals Industry

There are 26 companies listed in our capital market under the pharmaceuticals and chemicals industry. Out of these 26 companies only 12 companies declared and paid cash dividend regularly from the beginning of this study period. The cash dividend declared by pharmaceuticals and chemicals industry varies between 5 to 550 percent and average cash dividend was 51.82 percent.

Table: 3.13 Growth Rates of Cash Dividend and Average Stock Price of Pharmaceuticals and Chemicals Industry.

Year	Cash Dividend (Tk.)	Absolute Growth in Dividend	Simple Growth rate (SGR)	Average Stock Price (Tk.)	Absolute Growth in Price	Simple Growth rate (SGR)
2000	32.00			71.64		
2001	33.88	1.88	5.86	61.25	-10.39	-14.51
2002	31.11	-2.76	-8.16	73.09	11.84	19.33
2003	36.25	5.14	16.52	129.54	56.45	77.24
2004	35.78	-0.47	-1.30	146.63	17.08	13.19
2005	34.30	-1.48	-4.13	117.94	-28.69	-19.57
2006	49.40	15.10	44.02	113.29	-4.65	-3.94
2007	53.10	3.70	7.49	200.98	87.69	77.40
2008	50.92	-2.18	-4.11	296.87	95.90	47.71
2009	55.33	4.42	8.67	364.52	67.64	22.79
2010	63.25	7.92	14.31	522.18	157.66	43.25
2011	54.42	-8.83	-13.97	413.52	-108.66	-20.81
2012	50.92	-3.50	-6.43	303.71	-109.81	-26.56
2013	84.33	33.42	65.63	333.17	29.47	9.70
2014	112.33	28.00	33.20	462.18	129.01	38.72
Average	**51.82**		**11.26**	**240.70**		**18.85**
Compound Growth Rate (CGR)		**9.38**		**Compound Growth Rate (CGR)**		**14.24**

Source: Compiled from various issues of DSE Monthly Review and Working Datasheets

With a view to compare the growth in dividend and price in pharmaceuticals and chemicals industry Table: 3.13 has made where the absolute, simple and compound growths are stated. The table shows that dividend of this industry has increased from 32.00 percent in 2000 to 112.33 percent in 2014 which has an average annual simple growth rate (SGR) of 11.26 percent and a compound growth rate (CGR) of 9.38 percent. In the harmony, price has increased from 71.64 in 2000 to 462.18 in 2014 which has an average annual simple growth rate (SGR) of 18.85 percent and a compound growth rate (CGR) of 14.24 percent. Here the relationship of dividend and price is positive.

Table: 3.14 Regression Analysis of Trend Growth Rates (TGR) of Cash Dividend and Average Stock Price in Pharmaceuticals and Chemicals Industry.

Regression of Cash Dividend		Regression of Average Stock Price	
Coefficient	0.0751	Coefficient	0.15
Prob. (t-statistic)	0.00	Prob. (t-statistic)	0.00
TGR	18.88	**TGR**	41.25

The regression output of dividend and price are shown in Table: 3.14 where both coefficients (B) are statistically significant. So, there is a statistically significant relationship between dependent variable Dividend and Time, at the same time there is a statistically significant relationship between dependent variable Price and Time. The Trend Growth Rate (TGR) of dividend is 18.88 percent and for price the Trend Growth Rate (TGR) is 41.25 percent. Over the 15 years dividend and price both have increased.

3.3.6 Services and Real Estate Industry

There are 03 companies listed in our capital market under the services and real estate industry. Out of these 03 companies only 02 companies declared and paid cash dividend regularly from the beginning of this study period. The cash dividend declared by service industry varies between 10 to 25 percent and average cash dividend was 12.30 percent.

Table: 3.15 Growth Rates of Cash Dividend and Average Stock Price of Services and Real Estate Industry.

Year	Cash Dividend (Tk.)	Absolute Growth in Dividend	Simple Growth rate (SGR)	Average Stock Price (Tk.)	Absolute Growth in Price	Simple Growth rate (SGR)
2000	10.00			18.08		
2001	10.00	0.00	0.00	10.47	-7.61	-42.09
2002	10.00	0.00	0.00	8.40	-2.07	-19.75
2003	10.00	0.00	0.00	9.82	1.42	16.90
2004	10.00	0.00	0.00	12.72	2.90	29.52
2005	10.00	0.00	0.00	10.53	-2.20	-17.26
2006	12.00	2.00	20.00	9.23	-1.30	-12.31
2007	15.00	3.00	25.00	15.96	6.73	72.87
2008	12.50	-2.50	-16.67	59.99	44.03	275.93
2009	17.50	5.00	40.00	125.12	65.13	108.57
2010	22.50	5.00	28.57	124.61	-0.51	-0.41
2011	10.00	-12.50	-55.56	77.92	-46.69	-37.47
2012	10.00	0.00	0.00	44.34	-33.59	-43.10
2013	12.50	2.50	25.00	37.08	-7.25	-16.36
2014	12.50	0.00	0.00	70.62	33.54	90.44
Average	**12.30**		**4.74**	**42.33**		**28.96**
Compound Growth Rate (CGR)		**1.61**		**Compound Growth Rate (CGR)**		**10.22**

Source: Compiled from various issues of DSE Monthly Review and Working Datasheets

The growth trend of dividend and price of services and real estate industry is analyzed in Table: 3.15. The table shows that dividend of this industry has increased from 10 percent in 2000 to 12.5 percent in 2014 which has an average annual simple growth rate (SGR) of 4.74 percent and a compound growth rate (CGR) of 1.61 percent. In the same time price has increased from 18.08 in 2000 to 70.62 in 2014 which has an average annual simple growth rate (SGR) of 28.69 percent and a compound growth rate (CGR) of 10.22 percent. It has been observed from the table that the growth rates of dividend and price are positive which means they are moving in the same direction.

Table: 3.16 Regression Analysis of Trend Growth Rates (TGR) of Cash Dividend and Average Stock Price in Service and Real Estate Industry

Regression of Cash Dividend		Regression of Average Stock Price	
Coefficient	0.0751	Coefficient	0.1692
Prob. (t-statistic)	0.00	Prob. (t-statistic)	0.0011
TGR	18.88	**TGR**	47.64

In Table: 3.16 the Trend Growth Rate (TGR) of dividend and price have analyzed for services and real estate industry. In the left side the outcomes of regression of dividend is shown, the probability (prob.) value of t-statistics is 0.00 which means the value of coefficient (B) is statistically significant and there is a significant relationship between dependent variable Dividend and Time. Here the value of the coefficient is 0.0751 and the TGR is 18.88 percent. In case of regression equation of price the coefficient is highly statistically significant with a probability value of 0.0011 and the TGR is 47.64 percent. Here the TGR of price is almost double and they are moving together in the same direction.

3.3.7 Tannery Industry

There are 05 companies listed in our capital market under the tannery industry. Out of these 05 companies only 03 companies declared and paid cash dividend regularly from the beginning of this study period. The cash dividend declared by tannery industry varies between 10 to 300 percent and average cash dividend was 80.20 percent.

Table: 3.17 Growth Rates of Cash Dividend and Average Stock Price of Tannery Industry.

Year	Cash Dividend (Tk.)	Absolute Growth in Dividend	Simple Growth rate (SGR)	Average Stock Price (Tk.)	Absolute Growth in Price	Simple Growth rate (SGR)
2000	61.33			50.93		
2001	40.67	-20.67	-33.70	52.73	1.80	3.54
2002	58.33	17.67	43.44	67.39	14.66	27.81
2003	43.67	-14.67	-25.14	76.81	9.42	13.98
2004	52.33	8.67	19.85	86.98	10.17	13.24
2005	51.67	-0.67	-1.27	70.10	-16.88	-19.40
2006	91.67	40.00	77.42	64.31	-5.79	-8.26
2007	64.00	-27.67	-30.18	130.46	66.14	102.85
2008	55.67	-8.33	-13.02	181.94	51.49	39.47
2009	92.00	36.33	65.27	303.64	121.69	66.88
2010	105.00	13.00	14.13	404.35	100.71	33.17
2011	108.33	3.33	3.17	344.56	-59.79	-14.79
2012	120.00	11.67	10.77	290.26	-54.29	-15.76
2013	131.67	11.67	9.72	396.65	106.39	36.65
2014	126.67	-5.00	-3.80	585.39	188.74	47.58
Average	**80.20**		**9.76**	**207.10**		**23.35**
Compound Growth Rate (CGR)		**5.32**		**Compound Growth Rate (CGR)**		**19.06**

Source: Compiled from various issues of DSE Monthly Review and Working Datasheets

In Table: 3.17 the growth rates of dividend and price of tannery industry have analyzed. The table shows that dividend of this industry has increased from 61.33 percent in 2000 to 126.67 percent in 2014 which has an average annual simple growth rate (SGR) of 9.76 percent and a compound growth rate (CGR) of 5.32 percent. In the same time price has increased from 50.93 in 2000 to 585.39 in 2014 which has an average annual simple growth rate (SGR) of 23.35 percent and a compound growth rate (CGR) of 19.06 percent. Here the relationship of dividend and price is positive, as a result the growth rates of dividend and price grow in the same direction.

Table: 3.18 Regression Analysis of Trend Growth Rates (TGR) of Cash Dividend and Average Stock Price in Tannery Industry

Regression of Cash Dividend		Regression of Average Stock Price	
Coefficient	0.0789	Coefficient	0.182456
Prob. (t-statistic)	0.00	Prob. (t-statistic)	0.00
TGR	19.92	**TGR**	52.21

Regression of dividend contains the probability (prob.) value of t-statistics is 0.00 which means there is a statistically significant relationship between Time and Dividend. The trend growth rate (TGR) of dividend is 19.92 percent. The regression coefficient of price is statistically significant at 01 percent level of significant and the TGR is 52.21 percent. Dividend and price are moving at the same direction in this industry.

3.3.8 Textile Industry

There are 37 companies listed in our capital market under the textile industry. Out of these 37 companies only 8 companies declared and paid cash dividend regularly from the beginning of this study period. The cash dividend declared by textile industry varies between 4 to 70 percent and average cash dividend was 16.22 percent.

Table: 3.19 Growth Rates of Cash Dividend and Average Stock Price of Textile Industry.

Year	Cash Dividend (Tk.)	Absolute Growth in Dividend	Simple Growth rate (SGR)	Average Stock Price (Tk.)	Absolute Growth in Price	Simple Growth rate (SGR)
2000	12.40			16.93		
2001	15.00	2.60	20.97	17.53	0.60	3.52
2002	16.14	1.14	7.62	22.01	4.48	25.57
2003	16.33	0.19	1.18	28.49	6.48	29.43
2004	15.29	-1.05	-6.41	41.51	13.02	45.72
2005	13.57	-1.71	-11.21	36.63	-4.88	-11.75
2006	13.57	0.00	0.00	397.09	360.46	984.01
2007	18.00	4.43	32.63	38.91	-358.18	-90.20
2008	14.00	-4.00	-22.22	58.27	19.36	49.76
2009	12.86	-1.14	-8.16	59.95	1.69	2.89
2010	14.50	1.64	12.78	112.75	52.80	88.06
2011	17.57	3.07	21.18	162.55	49.80	44.17
2012	18.29	0.71	4.07	134.87	-27.68	-17.03
2013	26.43	8.14	44.53	158.08	23.22	17.21
2014	19.29	-7.14	-27.03	198.39	40.30	25.50
Average	**16.22**		**5.00**	**98.93**		**85.49**
Compound Growth Rate (CGR)		**3.21**		**Compound Growth Rate (CGR)**		**19.22**

Source: Compiled from various issues of DSE Monthly Review and Working Datasheets

In Table: 3.19 it is clear that the trend of dividend is increasing in textile industry. In the same time the trend of price is also positive. The dividend was 12.40 percent in 2000 which has increased to 19.29 percent in 2014. In case of price, it was 16.93 in 2000 which has been increased to 198.39 in 2014. The average annual simple growth rate (SGR) of dividend is 5.00 percent and a compound growth rate (CGR) of 3.21 percent. Price has an average annual simple growth rate (SGR) of 85.49 percent and a compound growth rate (CGR) of 19.22 percent. It has observed from the table that the growth rates of dividend and price are positive which means they are moving in the same direction and the compound growth rate (CGR) of price is almost 6th times that of dividend.

Table: 3.20 Regression Analysis of Trend Growth Rates (TGR) of Cash Dividend and Average Stock Price in Textile Industry.

Regression of Cash Dividend		Regression of Average Stock Price	
Coefficient	0.0256	Coefficient	0.1732
Prob. (t-statistic)	0.0207	Prob. (t-statistic)	0.0004
TGR	6.07	**TGR**	49.00

The regression output of dividend and price are shown in Table: 3.20 where both coefficients (B) are statistically significant at 05 percent level of significant. So, there is a statistically significant relationship between dependent variable Dividend and Time in the same time, there is a statistically significant relationship between dependent variable Price and Time. The Trend Growth Rate (TGR) of dividend is 6.07 percent and for price the Trend Growth Rate (TGR) is 49.00 percent. Over the 14 years dividend and price both have increased.

3.3.9 Miscellaneous Industry

There are 10 companies listed in our capital market under the miscellaneous industry. Out of these 10 companies only 04 companies declared and paid cash dividend regularly from the beginning of this study period. The cash dividend declared by miscellaneous industry varies between 5 to 220 percent and average cash dividend was 54.19 percent.

Table: 3.21 Growth Rates of Cash Dividend and Average Stock Price of Miscellaneous Industry.

Year	Cash Dividend (Tk.)	Absolute Growth in Dividend	Simple Growth rate (SGR)	Average Stock Price (Tk.)	Absolute Growth in Price	Simple Growth rate (SGR)
2000	22.50			27.89		
2001	23.50	1.00	4.44	34.94	7.04	25.25
2002	21.50	-2.00	-8.51	34.80	-0.14	-0.39
2003	33.00	11.50	53.49	37.60	2.80	8.05
2004	20.00	-13.00	-39.39	35.96	-1.64	-4.35
2005	48.00	28.00	140.00	60.74	24.78	68.90
2006	50.67	2.67	5.56	75.40	14.66	24.14
2007	53.33	2.67	5.26	132.12	56.71	75.21
2008	60.00	6.67	12.50	201.20	69.09	52.29
2009	56.67	-3.33	-5.56	376.08	174.88	86.92
2010	76.67	20.00	35.29	465.95	89.87	23.90
2011	80.00	3.33	4.35	286.90	-179.05	-38.43
2012	80.33	0.33	0.42	257.19	-29.72	-10.36
2013	93.33	13.00	16.18	409.27	152.09	59.14
2014	93.33	0.00	0.00	581.46	172.19	42.07
Average	**54.19**		**16.00**	**201.17**		**29.45**
Compound Growth Rate (CGR)		**10.70**		**Compound Growth Rate (CGR)**		**24.23**

Source: Compiled from various issues of DSE Monthly Review and Working Datasheets

With a view to compare the growth in dividend and price in miscellaneous industry Table: 3.21 has made where the absolute, simple and compound growths are stated. The table shows that dividend of this industry has increased from 22.50 percent in 2000 to 93.33 percent in 2014 which has an average annual simple growth rate (SGR) of 16.00 percent and a compound growth rate (CGR) of 10.70 percent. In the harmony, price has increased from 27.89 in 2000 to 581046 in 2014 which has an average annual simple growth rate (SGR) of 29.45 percent and a compound growth rate (CGR) of 24.23 percent. Here the relationship of dividend and price is positive.

Table: 3.22 Regression Analysis of Trend Growth Rates (TGR) of Cash Dividend and Average Stock Price in Miscellaneous Industry.

Regression of Cash Dividend		Regression of Average Stock Price	
Coefficient	0.1174	Coefficient	0.2373
Prob. (t-statistic)	0.00	Prob. (t-statistic)	0.00
TGR	31.04	**TGR**	72.70

To compare the growth of dividend and price Table: 3.22 is prepared. The regression output of dividend and price are shown in the left and right side respectively, where both coefficients (B) are statistically significant. So, there is a significant relationship between dependent variable Dividend and Time, at the same time there is a significant relationship between dependent variable Price and Time. The Trend Growth Rate (TGR) of dividend is 31.04 percent and for price the Trend Growth Rate (TGR) is 72.70 percent. Over the 15 years dividend and price both have increased.

3.3.10 Summary of Industry Wise Growth Analysis of Cash Dividend and Stock Price

From the above discussion and analysis we summarized the Table 3.5 to 3.22 which describe the industry wise growth trends of cash dividend and stock price of cash dividend paying companies into the following table:

Table 3.23: 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	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
Average	**6.09**	**15.88**	**15.13**	**43.51**

Source: Table 3.5 to 3.22.

After analyzing the industry wise growth trends (Table:3.23) 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%.

3.3.11 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 overall the market.

Table: 3.24 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		13.86765
F-statistic	215.2292	Durbin-Watson stat		1.006917
Prob (F-statistic)	0			

In Table: 3.24 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 real 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 –

$$LOG\,(PRICE) = 108.1779 + 1.665079\,LOG\,(DIVIDEND)$$

3.4 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 (Cement, Ceramics, Engineering, Food and Allied, Fuel and Power, IT, Jute, Textile, Pharmaceuticals and Chemicals, Paper and Printing, Services and Real Estate, Tannery, Telecommunication, Travel and Leisure and Miscellaneous sector). However, for our analysis all these 38 nonfinancial sector companies are classified into nine sectors as engineering, food and allied, fuel and power, textile, pharmaceuticals and chemicals, services & real estate, tannery, and miscellaneous sectors.

3.4.1 Engineering Industry

The Engineering Industry of Bangladesh includes seven companies which are listed in our capital market. Out of these seven companies only five companies declared and paid bonus dividend regularly from the beginning of this study period. The bonus dividend declared by engineering industry varies between 5 to 50 percent and average bonus dividend was 20.70 percent.

Table: 3.25 Growth Rates of Bonus Dividend and Average Stock Price of Engineering Industry

Year	Bonus Dividend (in %)	Absolute Growth in Dividend	Simple Growth rate (SGR)	Average Stock Price (Tk.)	Absolute Growth in Price	Simple Growth rate (SGR)
2000	20.00			32.45		
2001		-20.00	-100.00	26.91	-5.54	-17.09
2002		0.00		26.00	-0.91	-3.37
2003		0.00		25.35	-0.65	-2.50
2004	40.00	40.00		64.99	39.64	156.36
2005	33.00	-7.00	-17.50	89.09	24.10	37.08
2006		-33.00	-100.00	50.48	-38.61	-43.34
2007	20.00	20.00		67.59	17.11	33.90
2008	26.25	6.25	31.25	83.20	15.61	23.10
2009	18.50	-7.75	-29.52	89.06	5.86	7.04
2010	19.00	0.50	2.70	128.51	39.45	44.29
2011	15.00	-4.00	-21.05	108.78	-19.73	-15.35
2012	13.00	-2.00	-13.33	62.84	-45.94	-42.23
2013	12.40	-0.60	-4.62	51.54	-11.30	-17.98
2014	10.50	-1.90	-15.32	75.34	23.80	46.18
Average	**20.70**		**-26.74**	**65.47**		**14.72**
Compound Growth Rate (CGR)		**-4.50**		**Compound Growth Rate (CGR)**		**6.20**

Source: Compiled from various issues of DSE Monthly Review and Working Datasheets.

In Table: 3.25 the growth rates of bonus dividend and price of engineering industry is analyzed. The table shows that bonus dividend of this industry has decreased from 20.00 percent in 2000 to 10.50 percent in 2014 which has an average annual simple growth rate (SGR) of -26.74 percent and a compound growth rate (CGR) of -4.50 percent. In contrast, price has increased from 32.45 in 2000 to 75.34 in 2014 which has an average annual simple growth rate (SGR) of 14.72 percent and a compound growth rate (CGR) of 6.20 percent. Here the CGR is very small in figure and if an investor holds the stock for 15 years then he will receive only 6.20 percent as capital gain.

Table: 3.26 Regression Analysis of Trend Growth Rates (TGR) of Bonus Dividend and Average Stock Price in Engineering Industry.

Regression of Bonus Dividend		Regression of Average Stock Price	
Coefficient	-0.07312	Coefficient	0.08064
Prob. (t-statistic)	0.008	Prob. (t-statistic)	0.0052
TGR	-15.50	**TGR**	20.40

Here regression of bonus dividend contains the probability (prob.) value of t-statistics is 0.008 which means there is a statistically significant relationship between time and bonus dividend. The trend growth rate (TGR) of bonus dividend is -15.50 percent. In case of regression of price coefficient is also statistically significant at 05 percent level of significant and the TGR is 20.40 percent. Dividend and price are moving in opposite direction in this industry.

3.4.2 Food and Allied Industry

The Food and Allied Industry of Bangladesh includes eighteen companies which are listed in our capital market. Out of these eighteen companies only four companies declared and paid bonus dividend regularly from the beginning of this study period. The bonus dividend declared by food and allied industry varies between 2 to 70 percent and average bonus dividend was 19.40 percent.

Table: 3.27 Growth Rates of Bonus Dividend and Average Stock Price of Food and Allied Industry.

Year	Bonus Dividend (in %)	Absolute Growth in Dividend	Simple Growth rate (SGR)	Average Stock Price (Tk.)	Absolute Growth in Price	Simple Growth rate (SGR)
2000				16.16		
2001		0.00		14.20	-1.96	-12.14
2002		0.00		38.56	24.36	171.52
2003		0.00		14.16	-24.39	-63.27
2004		0.00		15.26	1.09	7.72
2005		0.00		17.68	2.42	15.87
2006		0.00		15.24	-2.44	-13.80
2007		0.00		22.24	7.00	45.94
2008	10.00	10.00		37.41	15.18	68.24
2009	12.33	2.33	23.33	101.01	63.60	170.00
2010	21.25	8.92	72.30	83.71	-17.31	-17.13
2011	18.75	-2.50	-11.76	82.90	-0.81	-0.96
2012	19.25	0.50	2.67	50.25	-32.65	-39.38
2013	24.25	5.00	25.97	129.80	79.55	158.31
2014	30.00	5.75	23.71	143.75	13.95	10.75
Average	**19.40**		**22.70**	**52.15**		**35.83**
Compound Growth Rate (CGR)		**20.09**		**Compound Growth Rate (CGR)**		**16.89**

Source: Compiled from various issues of DSE Monthly Review and Working Datasheets.

To see the trend of bonus dividend and price of food and allied industry, growth rates are summarized in Table: 3.27. The table shows that bonus dividend of this industry has increased from 10.00 percent in 2008 to 30.00 percent in 2014 which has an average annual simple growth rate (SGR) of 22.70 percent and a compound growth rate (CGR) of 19.40 percent. In the same time price has increased from 16.16 in 2000 to 143.75 in 2014 which has an average annual simple growth rate (SGR) of 35.83 percent and a compound growth rate (CGR) of 16.89 percent. It has observed from the table that the growth rates of dividend and price are positive which means they are moving in the same direction.

Table: 3.28 Regression Analysis of Trend Growth Rates (TGR) of Bonus Dividend and Average Stock Price in Food and Allied Industry.

Regression of Bonus Dividend		Regression of Average Stock Price	
Coefficient	0.162472	Coefficient	0.165921
Prob. (t-statistic)	0.0032	Prob. (t-statistic)	0.0001
TGR	45.37	**TGR**	46.53

In Table: 3.28 the Trend Growth Rates (TGR) of bonus dividend and price have analyzed for food and allied industry. In the left side the result of regression of bonus dividend is shown, the probability (prob.) value of t-statistics is 0.0032 which means the value of coefficient (B) is statistically significant and there is a significant relationship between dependent variable bonus dividend and time. Here the value of the coefficient is 0.162472 and the TGR is 45.37 percent. In case of regression equation of price the coefficient is highly statistically significant with a probability value of 0.0001 and the TGR is 46.53 percent.

3.4.3 Fuel and Power Industry

The Fuel and Power Industry of Bangladesh includes sixteen companies which are listed in our capital market. Out of these sixteen companies only three companies declared and paid bonus dividend regularly from the beginning of this study period. The bonus dividend declared by fuel and power industry varies between 5 to 30 percent and average bonus dividend was 15.42 percent.

Table: 3.29 Growth Rates of Bonus Dividend and Average Stock Price of Fuel and Power Industry.

Year	Bonus Dividend (in %)	Absolute Growth in Dividend	Simple Growth rate (SGR)	Average Stock Price (Tk.)	Absolute Growth in Price	Simple Growth rate (SGR)
2000				10.38		
2001		0.00		8.20	-2.18	-20.96
2002		0.00		15.00	6.80	82.93
2003		0.00		25.25	10.25	68.33
2004		0.00		35.00	9.75	38.61
2005	10.00	10.00		50.25	15.25	43.57
2006	20.00	10.00	100.00	52.76	2.51	5.00
2007	20.00	0.00	0.00	95.29	42.53	80.60
2008	20.00	0.00	0.00	90.98	-4.31	-4.53
2009	18.33	-1.67	-8.33	136.81	45.84	50.38
2010	20.00	1.67	9.09	144.56	7.75	5.66
2011	18.33	-1.67	-8.33	69.33	-75.23	-52.04
2012	12.50	-5.83	-31.82	45.80	-23.53	-33.94
2013	10.00	-2.50	-20.00	36.77	-9.03	-19.72
2014	5.00	-5.00	-50.00	31.50	-5.27	-14.32
Average	**15.42**		**-1.04**	**56.53**		**16.40**
Compound Growth Rate (CGR)		**-7.41**		**Compound Growth Rate (CGR)**		**8.26**

Source: Compiled from various issues of DSE Monthly Review and Working Datasheets.

From Table: 3.29 it is clear that the trend of bonus dividend is decreasing in fuel and power industry. On the other hand, the trend of price is positive. The bonus dividend was 10.00 percent in 2005 which has decreased to 5.00 percent in 2014. If we look at the price then we see that it was 10.38 in 2000 which has increased to 31.50 in 2014.

The average annual simple growth rate (SGR) of bonus dividend is -1.04 percent and a compound growth rate (CGR) of -15.42 percent. Price has an average annual simple growth rate (SGR) of 16.40 percent and a compound growth rate (CGR) of 8.26 percent. Here the CGR of price is very low in some cases the rate of inflation grows faster than that. If an investor holds the stock for 15 years then he will receive only 8.26 percent of his investment as capital gain.

Table: 3.30 Regression Analysis of Trend Growth Rates (TGR) of Bonus Dividend and Average Stock Price in Fuel and Power Industry.

Regression of Bonus Dividend		Regression of Average Stock Price	
Coefficient	-0.08251	Coefficient	0.118577
Prob. (t-statistic)	0.1099	Prob. (t-statistic)	0.01159
TGR	-17.30	**TGR**	31.39

Trend Growth Rate (TGR) of dividend and price in fuel and power industry is shown in Table: 3.30 where the TGR of dividend is placed in the left side and in the right side the TGR of price. In both cases the value of coefficient (B) is statistically significant at 10 percent level of significant. The TGR of bonus dividend is -17.30 percent and the TGR of price is 31.39 percent.

3.4.4 IT Industry

The IT Industry of Bangladesh includes six companies which are listed in our capital market. Out of these six companies five companies declared and paid bonus dividend regularly from the beginning of this study period. The bonus dividend declared by IT industry varies between 4 and 15 percent and average bonus dividend was 10.59 percent.

Table: 3.31 Growth Rates of Bonus Dividend and Average Stock Price of IT Industry.

Year	Bonus Dividend (in %)	Absolute Growth in Dividend	Simple Growth rate (SGR)	Average Stock Price (Tk.)	Absolute Growth in Price	Simple Growth rate (SGR)
2002				12.00	12.00	
2003				15.77	3.77	31.39
2004	15.00	15.00		14.00	-1.77	-11.21
2005	12.50	-2.50	-16.67	26.28	12.28	87.68
2006	10.00	-2.50	-20.00	15.50	-10.78	-41.01
2007	11.80	1.80	18.00	24.99	9.49	61.23
2008	10.25	-1.55	-13.14	29.88	4.89	19.57
2009	11.13	0.88	8.54	43.94	14.06	47.05
2010	9.60	-1.53	-13.71	44.80	0.86	1.96
2011	5.80	-3.80	-39.58	32.72	-12.08	-26.96
2012	8.75	2.95	50.86	20.82	-11.90	-36.37
2013	10.00	1.25	14.29	18.28	-2.54	-12.20
2014	11.67	1.67	16.67	16.96	-1.32	-7.22
Average	**10.59**		**0.53**	**24.30**		**-18.5967**
Compound Growth Rate (CGR)		**-2.48**		**Compound Growth Rate (CGR)**		**2.92**

Source: Compiled from various issues of DSE Monthly Review and Working Datasheets.

The growth trend of bonus dividend and price of IT industry is analyzed in Table: 3.31. The table shows that dividend of this industry is decreasing from 15.00 percent in 2004 to 11.67 percent in 2014 which has an average annual simple growth rate (SGR) of 0.53 percent and a compound growth rate (CGR) of -2.48 percent. In the same time price has increased from 12.00 in 2002 to 16.96 in 2014 which has an average annual simple growth rate (SGR) of -18.5967 percent and a compound growth rate (CGR) of 2.92 percent. Here the CGR of price is negligible and most of the cases the rate of inflation grows faster than that of price. In the economy the risk free rate of investment is around 6 percent which is much more than the growth of the price. If an investor holds the stock for 13 years then he will receive only 2.92 percent of his investment as capital gain.

Table: 3.32 Regression Analysis of Trend Growth Rates (TGR) of Bonus Dividend and Average Stock Price in IT Industry.

Regression of Bonus Dividend		**Regression of Average Stock Price**	
Coefficient	-0.03669	Coefficient	0.042571
Prob. (t-statistic)	0.1135	Prob. (t-statistic)	0.1902
TGR	-8.10	**TGR**	10.30

If we see the probability (prob.) value of t-statistics of the regression model of bonus dividend then we find it as 0.1135 which means the value of coefficient (B) is not statistically significant at 05 percent level of significant. And the Trend Growth Rate (TGR) is -8.10 percent. In case of regression model of price the coefficient is not statistically significant at 05 percent level of significant and the Trend Growth Rate (TGR) is 10.30 percent. Over the 13 years price only increased 10.30 percent.

3.4.5 Pharmaceuticals and Chemical Industry

The Pharmaceuticals and Chemical Industry of Bangladesh includes twenty six companies which are listed in our capital market. Out of these twenty six companies only four companies declared and paid bonus dividend regularly from the beginning of this study period. The bonus dividend declared by pharmaceuticals and chemical industry varies between 5 and 50 percent and average bonus dividend was 14.74 percent.

Table: 3.33 Growth Rates of Bonus Dividend and Average Stock Price of Pharmaceuticals and Chemical Industry

Year	Bonus Dividend (in %)	Absolute Growth in Dividend	Simple Growth rate (SGR)	Average Stock Price (Tk.)	Absolute Growth in Price	Simple Growth rate (SGR)
2000				32.52		
2001	5.00	5.00		30.93	-1.58	-4.87
2002	15.00	10.00	200.00	21.18	-9.75	-31.52
2003	10.00	-5.00	-33.33	18.93	-2.25	-10.62
2004	17.50	7.50	75.00	29.22	10.28	54.31
2005	30.00	12.50	71.43	46.87	17.65	60.41
2006	12.50	-17.50	-58.33	27.33	-19.54	-41.70
2007	10.00	-2.50	-20.00	28.72	1.39	5.09
2008	17.50	7.50	75.00	43.42	14.70	51.19
2009	11.25	-6.25	-35.71	101.83	58.42	134.55
2010	16.67	5.42	48.15	96.48	-5.36	-5.26
2011	19.25	2.58	15.50	64.61	-31.86	-33.03
2012	15.00	-4.25	-22.08	44.38	-20.24	-31.32
2013	11.67	-3.33	-22.22	42.93	-1.45	-3.27
2014	15.00	3.33	28.57	36.05	-6.88	-16.02
Average	**14.74**		**24.77**	**44.36**		**9.14**
Compound Growth Rate (CGR)		**8.82**		**Compound Growth Rate (CGR)**		**0.74**

Source: Compiled from various issues of DSE Monthly Review and Working Datasheets.

With a view to compare the growth in bonus dividend and price in pharmaceuticals and chemicals industry Table: 3.33 has made where the absolute, simple and compound growths are stated. The table shows that dividend of this industry has increased from 5.00 percent in 2001 to 15.00 percent in 2014 which has an average annual simple growth rate (SGR) of 24.77 percent and a compound growth rate (CGR) of 8.82 percent. In the harmony, price has increased from 32.52 in 2000 to 36.05 in 2014 which has an average annual simple growth rate (SGR) of 9.14 percent and a compound growth rate (CGR) of 0.74 percent. . Here the CGR of price is very little in figure and most of the cases the rate of inflation grows faster than that of price. In the economy the risk free rate of investment is around 6 percent which is quite more than the growth of the price. If an investor holds the stock for 15 years then he will receive only 0.74 percent of his investment as capital gain.

Table: 3.34 Regression Analysis of Trend Growth Rates (TGR) of Bonus Dividend and Average Stock Price in Pharmaceuticals and Chemical Industry.

Regression of Bonus Dividend		Regression of Average Stock Price	
Coefficient	0.0288760	Coefficient	0.060336
Prob. (t-statistic)	0.3082	Prob. (t-statistic)	0.0333
TGR	6.07	**TGR**	14.90

The regression output of bonus dividend and price are shown in Table: 3.34 where the coefficient (B) of bonus dividend is not statistically significant but in case of price the coefficient is statistically significant at 05 percent level of significant. The Trend Growth Rate (TGR) of bonus dividend is 6.07 percent and for price the Trend Growth Rate (TGR) is 14.90 percent. Over the 15 years dividend and price both have increased.

3.4.6 Textile Industry

The Textile Industry of Bangladesh includes thirty seven companies which are listed in our capital market. Out of these thirty seven companies only seven companies declared and paid bonus dividend regularly from the beginning of this study period. The bonus dividend declared by textile industry varies between 5 and 25 percent and average bonus dividend was 16.36 percent.

Table: 3.35 Growth Rates of Bonus Dividend and Average Stock Price of Textile Industry.

Year	Bonus Dividend (in %)	Absolute Growth in Dividend	Simple Growth rate (SGR)	Average Stock Price (Tk.)	Absolute Growth in Price	Simple Growth rate (SGR)
2000	14.00			8.81		
2001		-14.00	-100.00	9.30	0.49	5.61
2002		0.00		11.35	2.05	22.04
2003		0.00		10.79	-0.56	-4.96
2004	20.00	20.00		12.27	1.48	13.72
2005	20.00	0.00	0.00	13.26	0.99	8.11
2006	20.00	0.00	0.00	13.53	0.26	1.98
2007	20.00	0.00	0.00	13.55	0.02	0.15
2008	16.67	-3.33	-16.67	24.79	11.24	83.00
2009	16.25	-0.42	-2.50	53.29	28.51	115.00
2010	18.42	2.17	13.33	69.56	16.27	30.53
2011	14.79	-3.63	-19.72	66.71	-2.86	-4.10
2012	11.71	-3.07	-20.77	33.57	-33.14	-49.67
2013	12.64	0.93	7.93	33.81	0.24	0.72
2014	11.79	-0.86	-6.78	59.27	25.46	75.29
Average	**16.36**		-13.20	**28.92**		**21.24**
Compound Growth Rate (CGR)		**-0.73**		**Compound Growth Rate (CGR)**		**14.59**

Source: Compiled from various issues of DSE Monthly Review and Working Datasheets.

In Table: 3.35 it is clear that the trend of dividend is decreasing in textile industry. In the contrary the trend of price is positive. The dividend was 14.00 percent in 2000 which has increased to 11.79 percent in 2014. In case of price, it was 8.81 in 2000 which has increased to 59.27 in 2014. The average annual simple growth rate (SGR) of bonus dividend is -13.20 percent and a compound growth rate (CGR) of -0.73 percent. Price has an average annual simple growth rate (SGR) of 21.24 percent and a compound growth rate (CGR) of 14.59 percent. Here the growth rate of price is handsome.

Table: 3.36 Regression Analysis of Trend Growth Rates (TGR) of Bonus Dividend and Average Stock Price in Textile Industry.

Regression of Bonus Dividend		Regression of Average Stock Price	
Coefficient	-0.02913	Coefficient	0.151412
Prob. (t-statistic)	0.0559	Prob. (t-statistic)	0.00
TGR	-6.49	**TGR**	41.71

Here regression of bonus dividend contains the probability (prob.) value of t-statistics is 0.0559 which means there is a statistically significant relationship between time and bonus dividend. The trend growth rate (TGR) of bonus dividend is -6.49 percent. In case of regression of price coefficient is also statistically significant at 05 percent level of significant and the TGR is 41.71 percent. Dividend and price are moving in opposite direction in this industry.

3.4.7 Travel and Leisure Industry

The Travel and Leisure Industry of Bangladesh includes three companies which are listed in our capital market. Out of these three companies only two companies declared and paid bonus dividend regularly from the beginning of this study period. The bonus dividend declared by travel and leisure industry varies between 5 and 20 percent and average bonus dividend was 13.17 percent

Table: 3.37 Growth Rates of Bonus Dividend and Average Stock Price of Travel and Leisure Industry.

Year	Bonus Dividend (in %)	Absolute Growth in Dividend	Simple Growth rate (SGR)	Average Stock Price (Tk.)	Absolute Growth in Price	Simple Growth rate (SGR)
2000	25.00					
2001		-25.00	-100.00			
2002		0.00				
2003		0.00				
2004		0.00				
2005		0.00				
2006	5.00	5.00				
2007		-5.00	-100.00			
2008	5.00	5.00				
2009	15.00	10.00	200.00			
2010	12.50	-2.50	-16.67			
2011	15.00	2.50	20.00	28.95	28.95	
2012	17.50	2.50	16.67	13.05	-15.90	-54.92
2013	13.50	-4.00	-22.86	13.90	0.85	6.51
2014	10.00	-3.50	-25.93	10.25	-3.65	-26.26
Average	**13.17**		-3.60	**16.54**		**-24.89**
Compound Growth Rate (CGR)		**-4.31**		**Compound Growth Rate (CGR)**		**-29.26**

Source: Compiled from various issues of DSE Monthly Review and Working Datasheets.

In Table: 3.37 the growth rates of dividend and price of travel and leisure industry are analyzed. The table shows that dividend of this industry has decreased from 25.00 percent in 2000 to 10.00 percent in 2014 which has an average annual simple growth rate (SGR) of -3.60 percent and a compound growth rate (CGR) of -4.31 percent. In the same time price has decreased from 28.95 in 2011 to 10.25 in 2014 which has an average annual simple growth rate (SGR) of -24.89 percent and a compound growth rate (CGR) of -29.26 percent. Here the relationship of dividend and price is positive as a result the growth rates of dividend and price grow in the same direction. Here the price grows negatively and an investor will be penalized if he holds the stock as capital loss.

Table: 3.38 Regression Analysis of Trend Growth Rates (TGR) of Bonus Dividend and Average Stock Price in Travel and Leisure Industry.

Regression of Bonus Dividend		Regression of Average Stock Price	
Coefficient	-0.0129	Coefficient	-0.30518
Prob. (t-statistic)	0.7953	Prob. (t-statistic)	0.1202
TGR	-2.93	**TGR**	-50.48

Regression of bonus dividend contains the probability (prob.) value of t-statistics is 0.7953 which means there is no statistically significant relationship between Time and Dividend. The trend growth rate (TGR) of dividend is -2.93 percent but it is not reliable. The regression coefficient of price is also statistically insignificant at 10 percent level of significant and the TGR is -50.48 percent. Here the price grows negatively as a result investors will face capital lose by holding the stock.

3.4.8 Miscellaneous Industry

The Miscellaneous Industry of Bangladesh includes ten companies which are listed in our capital market. Out of these ten companies only four companies declared and paid bonus dividend regularly from the beginning of this study period. The bonus dividend declared by miscellaneous industry varies between 5 and 30 percent and average bonus dividend was 22.40 percent

Table: 3.39 Growth Rates of Bonus Dividend and Average Stock Price of Miscellaneous Industry.

Year	Bonus Dividend (in %)	Absolute Growth in Dividend	Simple Growth rate (SGR)	Average Stock Price (Tk.)	Absolute Growth in Price	Simple Growth rate (SGR)
2000				39.39		
2001		0.00		43.96	4.56	11.59
2002		0.00		43.43	-0.52	-1.19
2003	20.00	20.00		54.48	11.04	25.43
2004	13.75	-6.25	-31.25	62.15	7.68	14.09
2005	20.00	6.25	45.45	77.82	15.67	25.21
2006	15.00	-5.00	-25.00	44.99	-32.83	-42.19
2007	12.50	-2.50	-16.67	62.28	17.29	38.44
2008	50.00	37.50	300.00	119.11	56.83	91.25
2009	60.00	10.00	20.00	175.10	55.99	47.00
2010	23.75	-36.25	-60.42	197.46	22.36	12.77
2011	17.50	-6.25	-26.32	137.43	-60.03	-30.40
2012	15.00	-2.50	-14.29	92.70	-44.73	-32.55
2013	11.25	-3.75	-25.00	74.23	-18.48	-19.93
2014	10.00	-1.25	-11.11	78.50	4.28	5.76
Average	**22.40**		**14.13**	**86.87**		**10.38**
Compound Growth Rate (CGR)		**-6.11**		**Compound Growth Rate (CGR)**		**5.05**

Source: Compiled from various issues of DSE Monthly Review and Working Datasheets.

With a view to compare the growth in bonus dividend and price in miscellaneous industry Table: 3.39 has made where the absolute, simple and compound growths are stated. The table shows that dividend of this industry has decreased from 20.00 percent in 2003 to 10.00 percent in 2014 which has an average annual simple growth rate (SGR) of 14.13

percent and a compound growth rate (CGR) of -6.11 percent. In the contrary price has increased from 39.39 in 2000 to 78.50 in 2014 which has an average annual simple growth rate (SGR) of 10.38 percent and a compound growth rate (CGR) of 5.05 percent. The CGR of price is nominal which is lower than risk free rate of investment and most of the cases the rate of inflation grows faster than that of price. If an investor holds this industry's stock for 14 years then he will receive only 5.05 percent of his investment as capital gain.

Table: 3.39 Trend Growth Rates (TGR) of Bonus Dividend and Average Stock Price in Miscellaneous Industry.

Regression of Bonus Dividend		**Regression of Average Stock Price**	
Coefficient	-0.02995	Coefficient	0.07688
Prob. (t-statistic)	0.5452	Prob. (t-statistic)	0.0065
TGR	-6.66	**TGR**	19.37

To compare the growth of bonus dividend and price Table: 3.39 is prepared. The regression output of dividend and price are shown in the left and right sides respectively, where the coefficient (B) of bonus dividend is not statistically significant on the other hand the coefficient of price is statistically significant at 5 percent level of significant. The Trend Growth Rate (TGR) of dividend is -6.66 percent and for price the Trend Growth Rate (TGR) is 19.3 percent. Here the growth rate of bonus dividend is negative but the price grows positively.

3.4.9 Summary of Industry Wise Growth Analysis of Bonus Dividend and Stock Price

From the above discussion and analysis we summarized the Table 3.25 to 3.39 which describe the industry wise growth trends of bonus dividend and stock price of bonus dividend paying companies into the following table:

Table 3.40: 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	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
Average	**0.42**	**-0.69**	**3.17**	**16.77**

Source: Table 3.25 to 3.39

From the above Table: 3.40, 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 it 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.

3.4.10 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 shows the regression equation of bonus dividend and average stock price of overall market.

Table: 3.41 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: 3.41 a regression equation is made where bonus dividend is taken as the explanatory variable and price as explained 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 not spurious. 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-

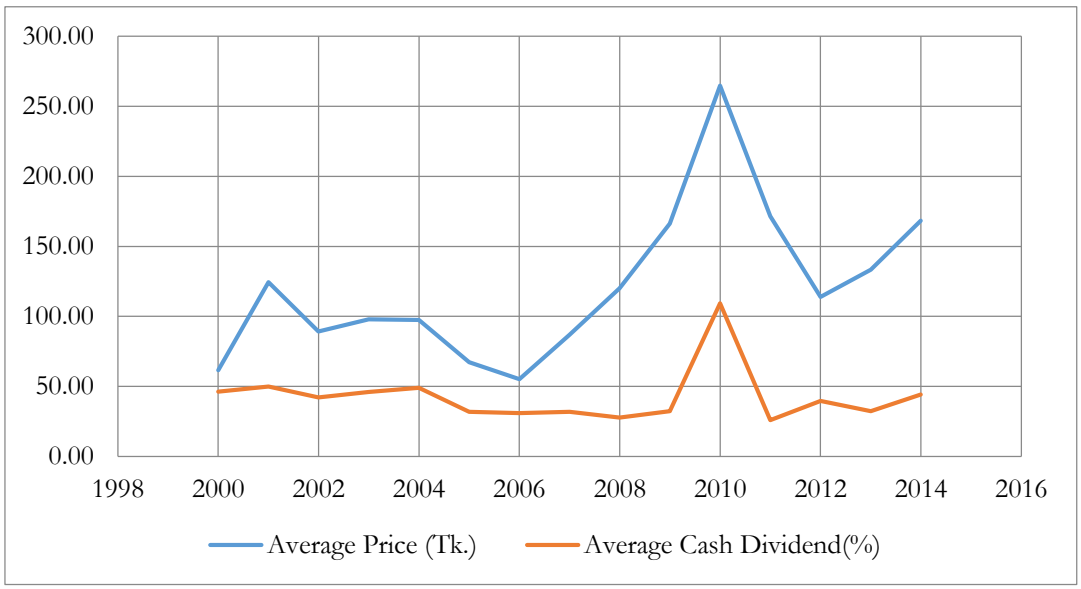
$$LOG\,(PRICE) = 1.6087708 + 0.855755\,LOG\,(DIVIDEND)$$

3.5 Graphical Representations of Stock Price and Dividend

The following section shows the movement of industry wise average stock prices along with cash and stock dividend paid companies in Bangladesh which are listed with the DSE during the last fifteen years.

3.5.1 Engineering Industry

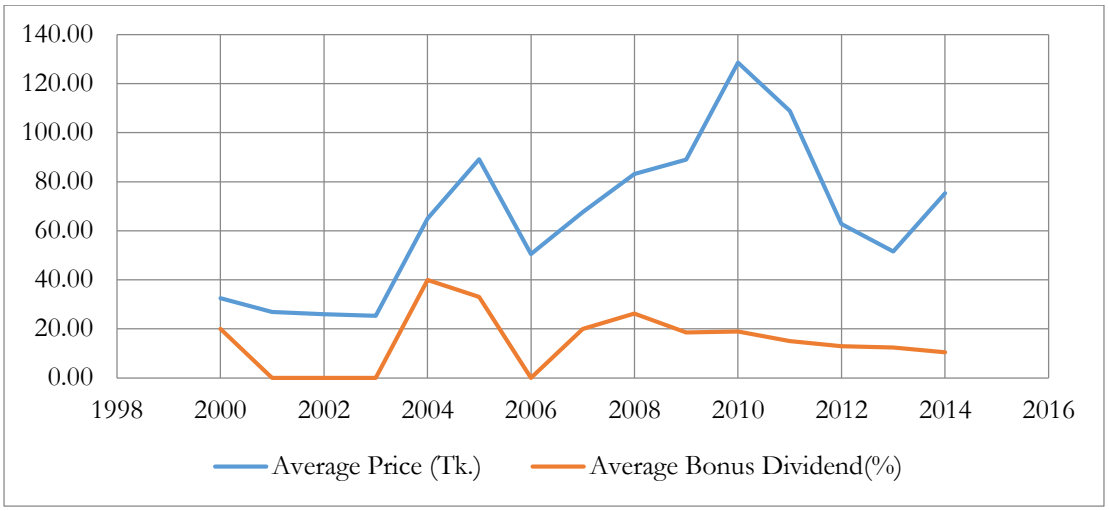
Figure 3.4: The Average Stock Price and Cash Dividend Movement of Engineering Industry.



Source: Table: 3.7

Cash dividend paying companies of Engineering Industry are successful in case of maximizing their wealth. In 2000 the average stock price was close to 52 taka and in later period it was always greater than that. At the last period of the time horizon the price was apparently 170 taka which is much more than the starting price. If we see the average price carve of their stock then it is clear that the trend is increasing though there is a massive downfall in 2010 when the overall market collapsed. But these stocks were able to achieve their loosed value with a very short period of time.

Figure 3.5: The Average Stock Price and Bonus Dividend Movement of Engineering Industry.

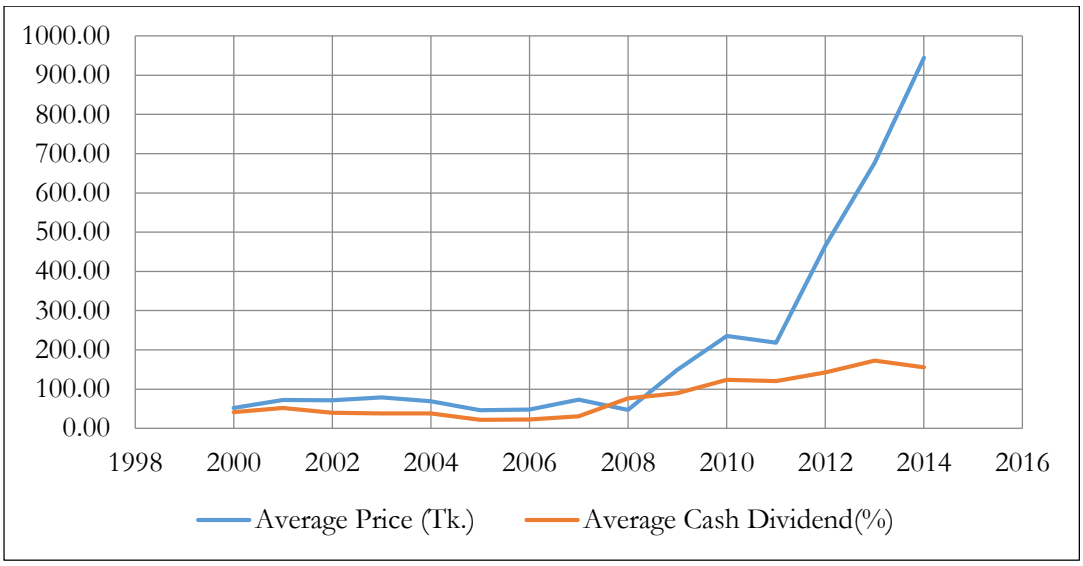


Source: Table: 3.25

Here the price movement of bonus dividend paying companies is more volatile than that of cash dividend paying companies. When we look at the price curve above then we see it started at approximately 32 taka in 2000 and it grew almost 127 taka in 2010 but the matter of fact is that companies were failed to sustain that growth. As a result price had fallen in apparently 68 taka in 2014.

3.5.2 Food and Allied Industry

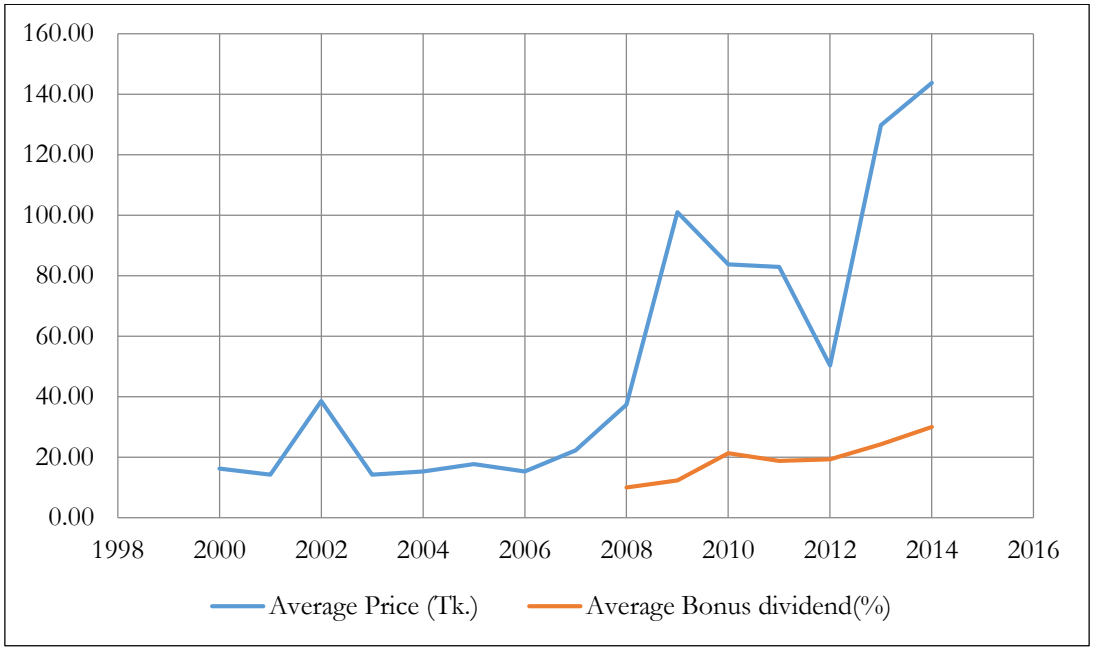
Figure 3.6: The Average Stock Price and Cash Dividend Movement of Food and Allied Industry.



Source: Table: 3.9

Cash dividend paying companies of Food and Allied industry are successful in case of maximizing their stock price. In 2000 the average stock price was close to 50 taka and in later period it was always greater than that. At the last period of the time horizon the price was apparently 950 taka which is much more than the starting price. If we see the average price carve of their stock then it is clear that the trend is increasing though there is a slide downfall in 2010 when the overall market collapsed. But these stocks were able to achieve their loosed value with a very short while.

Figure 3.7: The Average Stock Price and Bonus Dividend Movement of Food and Allied Industry.

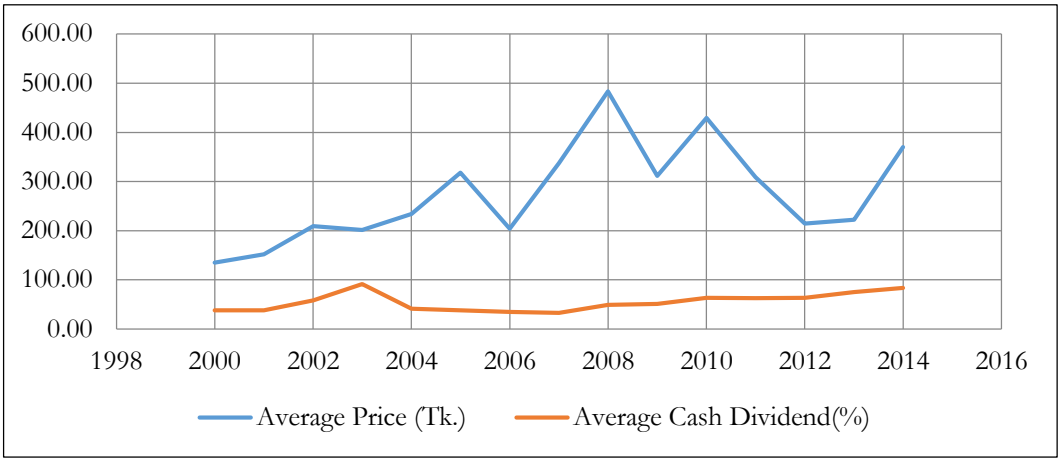


Source: Table: 3.27

Food and Allied industry has been paying bonus dividend only for last six years. The trend of stock price in this industry is increasing. Price was only 18 taka at the beginning of the time horizon but it is the highest in the last year. As we know there is a massive downfall in 2010 which leads a substantial decrease but the mead way of 2012 industry was able to regain the loosed price.

3.5.3 Fuel and Power Industry

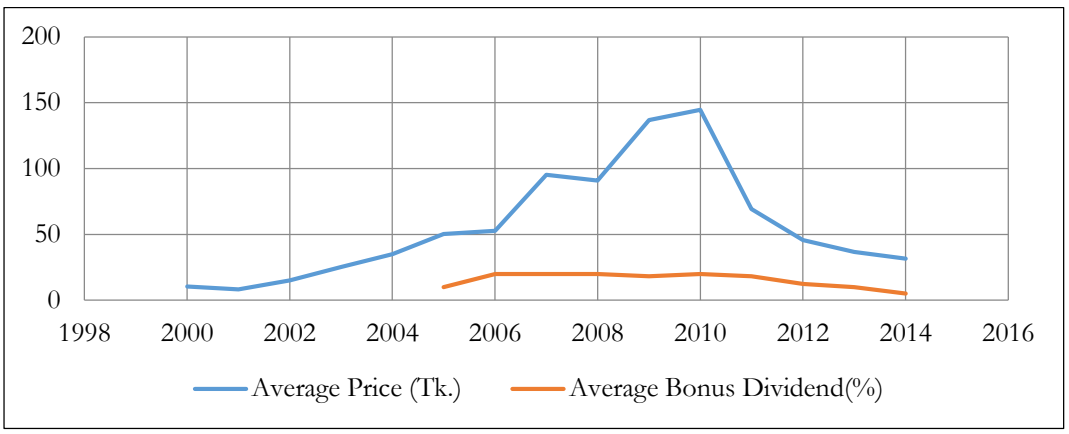
Figure 3.8: The Average Stock Price and Cash Dividend Movement of Fuel and Power Industry.



Source: Table: 3.11

Cash dividend paying companies of Fuel and Power industry are successful in case of maximizing their wealth. In 2000 the average stock price was close to 125 taka and in later period it was always greater than that. At the last period of the time horizon the price was apparently 375 taka which is much more than the starting price. If we see the average price carve of their stock then it is clear that the trend is increasing though there is a massive downfall in 2010 when the overall market collapsed. But these stocks were able to achieve their loosed value with a very short period of time.

Figure 3.9: The Average Stock Price and Bonus Dividend Movement of Fuel and Power Industry.

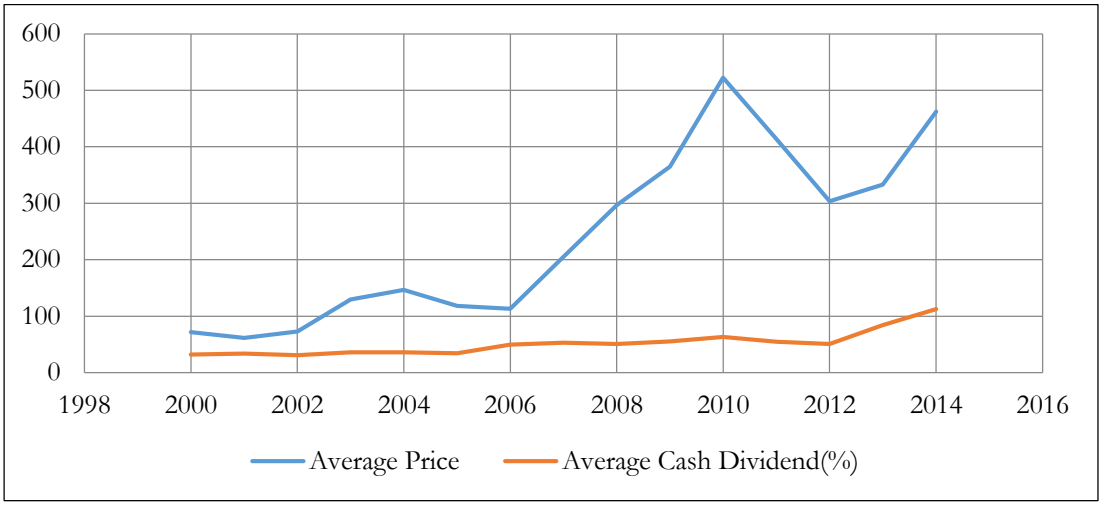


Source: Table: 3.29

There are three companies who were paying bonus dividend consistently in the last 5 years. If we give concentration on the movement of stock price then we get an unstable situation. At the very beginning of the time horizon the price was almost 12 taka and at the end of the horizon it was approximately 23 taka but in the intermediary period it was too high sometimes particularly in 2010. After 2010 the whole market collapsed and these company also went with that but the fact is that these companies were not able to recapture there loosed value which resulting a continuous downfall of the stock price up to 2014.

3.5.4 Pharmaceuticals and Chemicals Industry

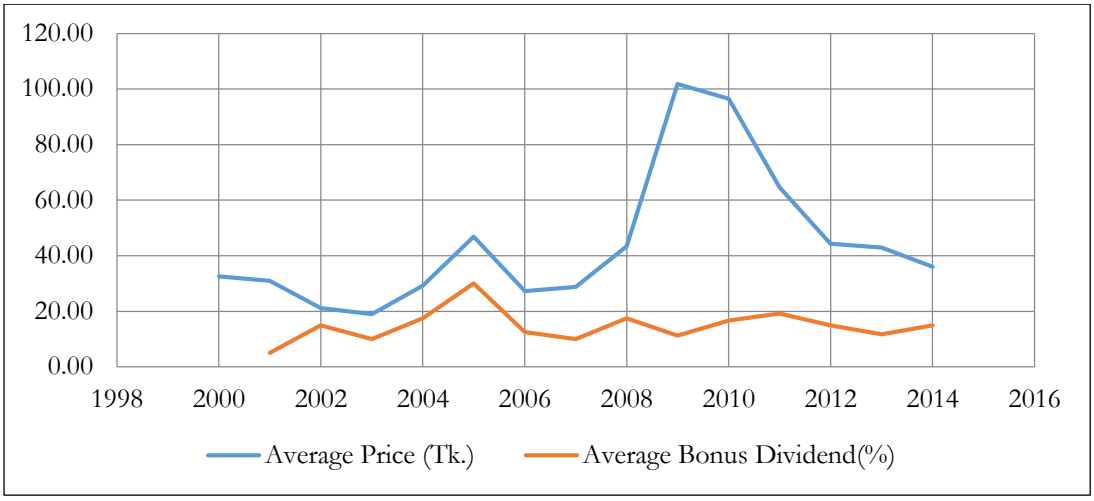
Figure 3.10: The Average Stock Price and Cash Dividend Movement of Pharmaceuticals and Chemicals Industry.



Source: Table: 3.13

Pharmaceuticals and Chemical industry is one the most uprising industries observed over the last few years. The product quality of this industry is standard enough for the international market. Now a days Bangladesh is exporting medicine product to almost hundred countries including the United States of America. The cash dividend paying companies in this industry have a very satisfactory price movement. Price started eighty taka at the beginning of the time period while it reached four hundred and seventy taka at the end of the time horizon. Though there is a downfall of price in 2010. In the same time the dividend is increasing.

Figure 3.11: The Average Stock Price and Bonus Dividend Movement of Pharmaceuticals and Chemical Industry.

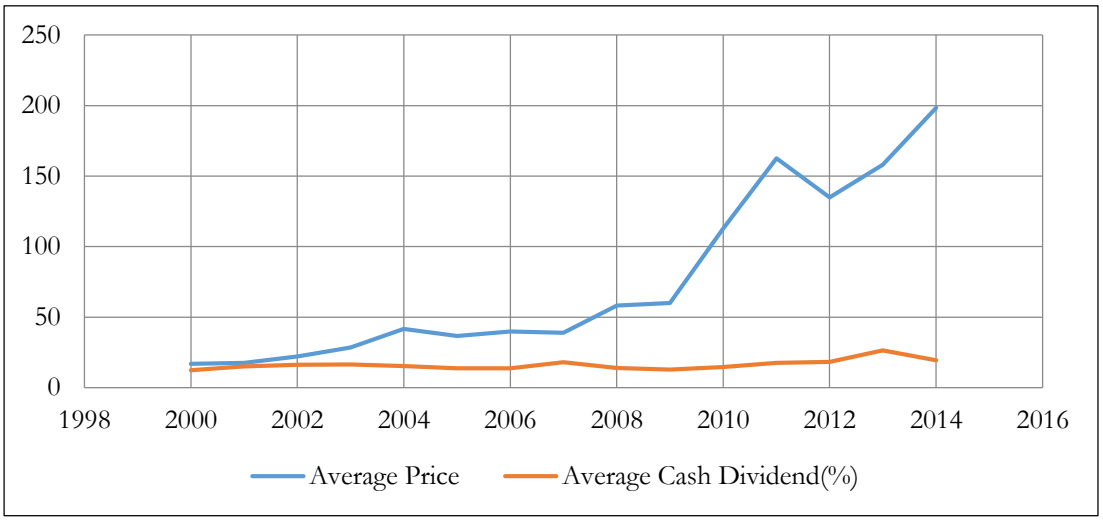


Source: Table: 3.33

It would be quite difficult to predict the average stock price of bonus dividend paying companies in this industry. Price movement of these stocks are more unstable and not maintaining any trend. The price was highest in 2010 as the overall market went up but it had fallen down and reached thirty eight taka which is almost equal to the price from where it started.

3.5.5 Textile Industry

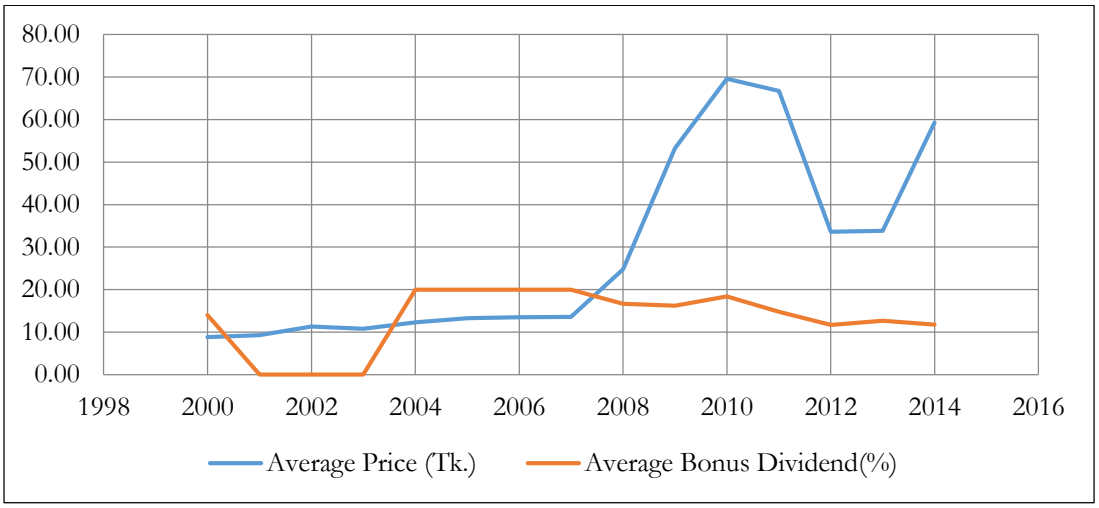
Figure 3.12: The Average Stock Price and Cash Dividend Movement of Textile Industry.



Source: Table: 3.19

The trend of stock price in Textile industry perhaps is standing in the most optimal condition. Because price was only 20 taka in the beginning of the time horizon but it is the highest in the last year. As we know there is a massive downfall in 2010 which leads a substantial decrease but within 2012 industry was able to regain the loosed price. This happened because of the increasing trend of cash dividend observed over the fifteen year time horizon. At the very beginning the cash dividend was apparently ten percent which has increased to almost twenty percent at the last time period in the same time the cash dividend payment is stable.

Figure 3.13: The Average Stock Price and Bonus Dividend Movement of Textile Industry.

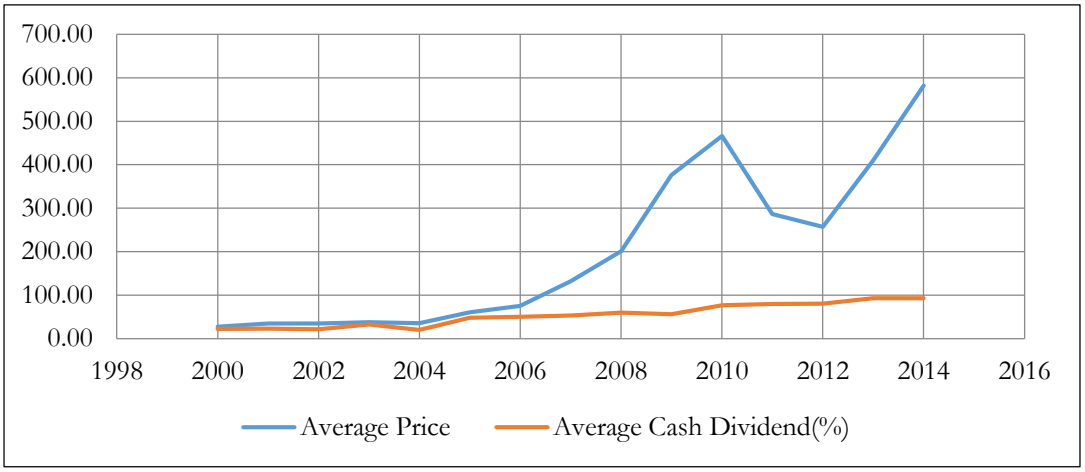


Source: Table: 3.35

There are 7 companies which are paying bonus dividend consistently for last 5 years. If we give concentration on the movement of stock price then we get an unstable situation. At the very beginning of the time horizon the price was almost 08 taka and at the end of the horizon it was approximately 58 taka but in the intermediary period it was too high sometimes particularly in 2010. After 2010 the whole market collapsed and these company also went with that but the fact is that these companies were not able to recapture their loosed value which resulting a continuous downfall of the stock price up to 2013. But within last one year these companies' stock price increased.

3.5.6 Miscellaneous Industry

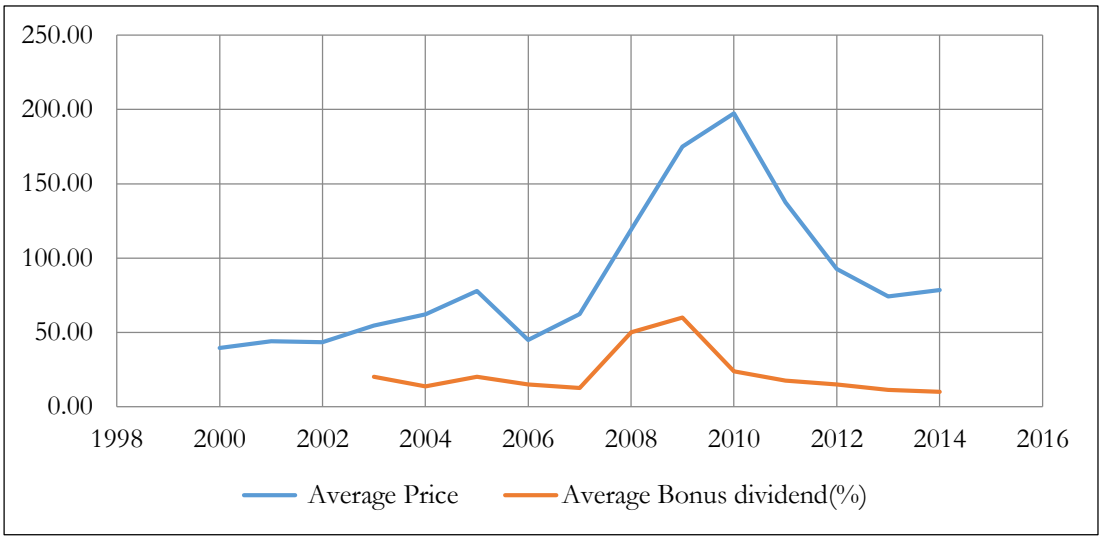
Figure 3.14: The Average Stock Price and Cash Dividend Movement of Miscellaneous Industry.



Source: Table: 3.21

The trend of stock price in miscellaneous industry perhaps is standing in the most optimal condition. Because price was only 20 taka in the beginning of the time horizon but it is the highest in the last year. As we know there is a massive downfall in 2010 which leads a substantial decrease but the mead way of 2012 industry was able to regain the loosed price. This happened because of the increasing trend of cash dividend observed over the fifteen year time horizon. At the very beginning the cash dividend was apparently fifteen percent which has increased to almost hundred percent at the last time period.

Figure 3.15: The Average Stock Price and Bonus Dividend Movement of Miscellaneous Industry.



Source: Table: 3.39

Here the price movement of bonus dividend paying companies is more volatile than that of cash dividend paying companies. In this industry while the price movement of cash dividend paying companies is in an increasing trend, the price of bonus dividend paying companies is unpredictable. When we look at the price curve above, then we see it started at approximately forty five taka in 2000 and it grew almost two hundred in 2010 but the matter of fact is that companies were failed to sustain that growth. As a result price had fallen in apparently seventy five taka in 2014.

3.6 Recapitulation of the Chapter

Meanwhile we have observed the trend of price movement industry wise for both cash dividend paying and bonus dividend paying companies. Result from our study is clear in that sense the companies which are paying cash dividend are able to maximize their share values in a greater extent on the other hand companies which are paying bonus dividend are able to maximize their share values in very few extent. 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 and their Compound Growth Rates (CGRs) are 23.09%, 19.22% and 24.23% respectively. And the cash dividend paying companies in case of Fuel and Power industry the stock price growth is 7.45% which is the minimum CGR among these industries. 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 Compound Growth Rates (CGRs) are 16.89%, 14.59% and 8.26% respectively. And the bonus dividend paying companies in case of

Travel and Leisure industry the stock price growth is -29.26% which is the minimum CGR among these industries. Average CGR of bonus dividend paying companies is only 3.17% and it 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. That means investors who invested in the bonus dividend paying companies will prefer to invest in risk free assets or no investment at all.

The next chapter captioned "Determinants of Dividend Policy of Corporate Firms of Bangladesh" examines to what extent various determinants of dividend policy can explain the dividend decisions of corporate firms of Bangladesh.

Chapter

4

Determinants of Dividend Policy of Corporate Firms of Bangladesh

Chapter Four

Determinants of Dividend Policy of Corporate Firms of Bangladesh

4.1. Introduction

One of the central issues of corporate finance has been the dividend decision of a firm, which has always been studied in relation to a firm's financing and investment decisions. The association amongst these two decisions has posed various questions. How much should a firm pay as dividend? How does a dividend payout policy influence the valuation of a firm? Does a firm's decision to distribute cash correspond to its financing and investing decisions? What is the outcome of changes in the dividend policy assuming steady financing and investment decisions of a firm? That why Dividend policy is one of the most controversial topics and researched areas of corporate finance. Many implausible reasons are given for why dividend policy might be important and many of the claims made about the dividend policy are economically illogical. Even so, in the real world of corporate finance, determining the most appropriate dividend policy is considered a most important issue. In fact, the dividend issue is quite challenging. The important elements are not difficult to identify but the interactions between those elements are complex and no easy answer exists. Many dividend theories have been propounded to give the explanation on how the dividend decisions are being undertaken and whether it has an influence on the value of the firm. There are three different approaches in this regard.

On the right, there is a conservative group that believes an increase in dividend payout increases the value of the firm. On the left, there is a radical group that believes a higher dividend payout reduces the value of the firm. And, in the center, there is a middle of the road party, founded in 1961 by Miller and Modigliani (MM), which claims that the payout policy makes no difference (Meyers & Allen 2010). In a theoretical paper MM showed the irrelevance of the dividend decision in the world without taxes, transaction cost or other market imperfections. (Miller & Modigliani 1961). Ever since the publishing of the MM paper, the researchers have focused on finding out how the dividend policy affects the value of the firm and what are those determinants which affect the dividend decisions. The dividend policy determinants have been well documented and researched in developed countries (US, Canada, UK, Germany, France and Japan) USA and European markets (Lintner 1956, Modigliani and Miller 1961, Pettit 1972, Black & Scholes 1973, Amibud & Murgia 1997). A few empirical investigations have been undertaken in emerging markets or developing countries. Very limited research work is available on this issue in Bangladesh. So there is a need to examine the determinants which affect the dividend payout decisions of DSE listed firms. The current study adds to the existing body of knowledge by empirically chalking out the important determinants which affect the dividend payout decisions of DSE listed firms.

The primary objective of this study is to find out whether several determinants as per the available literature have any influence on the dividend payout polices of DSE listed firms.

This chapter examines to what extent various determinants of dividend payout policy can explain the dividend decisions of DSE listed companies.

This current chapter has been organized into the following parts. Section 4.2 describes empirical findings on corporate dividend decisions which have been divided between various studies done in developed countries and developing countries. Section 4.3 describes inferential statistics used in this chapter, section 4.4 presents the finding of the empirical research and section 4.5 presents the conclusions that have been drawn from the results of the study.

4.2 Empirical Findings on Corporate Dividend Decisions in Emerging Countries

Although many theories and models have been attempted to examine the determinants of the dividend policy, the roots of the empirical literature has been credited to John Lintner (1956) who conducted his study on American companies in the middle of 1950s. He concluded that the dividend decision is based upon the current profitability and the previous year's dividends. Subsequently, there has been an ongoing debate on the dividend policy resulting controversial and inconclusive results. Many researchers tested Lintner's model ability to explain the dividend decision process in U.S firms (Darling, 1957; Dhrymes & Kurz, 1964; Fama & Babiak, 1968; Baker et al., 1985; Fama & French, 1997; Shirvani & Wilbratte, 1997) and in emerging economies (Mookerjee, 1992; Glen et al., 1995; Aivazian et al., 1999). For example, Fama and Babiak (1968) tested the Lintner model on the dividend data of 392 major North American industrial firms and

concluded that Lintner's dividend model has succeeded well in explaining the dividend changes of individual firms.

The ground breaking seminal article by Miller & Modigliani (MM) in 1961 that introduced the dividend irrelevance theory altered the mentality of many researchers regarding the dividend policy. MM argued that in a perfect market condition the dividend decision is irrelevant since it has no impact on the value of the firm or on the shareholders' wealth. However, the presence of market imperfections has provided the basis for the development of various theories which undermined the dividend irrelevance theory. Therefore, since Miller & Modigliani (1961) introduced the dividend irrelevance hypothesis and Black (1976) addressed the "Dividend Puzzle" in their studies, a number of researchers tried to solve this puzzle to learn the most important determinants of the dividend policy. Many of the studies concluded that dividend payment behavior in emerging countries is significantly different than that of developed markets. Factors such as culture, perceptions, market size, market depth, efficiency, regulations and taxation, make emerging countries a special case. The details review of the empirical studies has been discussed in the first chapter as under review of literature.

4.3 Inferential Statistics: Hypotheses Testing

4.3.1 Unit-Root Test (Stationary Test)

Stationarity implies that the mean, variance, and autocorrelation of a variable do not change over time. The absence of stationarity-nonstationarity- can strongly influence the behavior and properties of the series, so that the tests about the regression parameters

cannot be validated (Sarbapriya, 2012). In this study, stationarity of the data is tested by using Fisher test-a unit root test for unbalanced panels as suggested by Maddala and Wu (1999), where a p-value greater than 5% indicates that the data has a unit root test and is non-stationary. The Fisher test can be calculated in two methods: taking into consideration the augmented Dickey-Fuller (ADF) test or taking into consideration the Philips Perron test (PP). According to Sarbapriya (2012), the PP test provides better results than ADF test and it attempts to satisfy the stationarity conditions for all the variables. Therefore, PP test is used to check the stationarity of this study, although both methods gave similar results.

Results reported in Table: 4.1 indicates that all the variables are stationary, except NAVPS and SIZE, which are stationary only at lag 1. Since including NAVPS and SIZE variables as one lag in the regression will make us lose some observations.

Table 4.1: Fisher-Type Unit-Root Test Based on Phillips-Perron Tests

Variables	Order of	chi-squared	p-value	Remark
CASHDIV	I(0)	135.928	0.0266	Stationary
CASHDIV(-1)	I(0)	137.750	0.0207	Stationary
EPS	I(0)	180.878	0.0000	Stationary
ROE	I(0)	196.746	0.0000	Stationary
D(NAVPS)	I(1)	442.141	0.0000	Stationary
D(SIZE)	I(1)	110.079	0.0000	Stationary

Source: Appendix B.65 – B.70

Computed in using Eviews. Ho: All panels contain unit roots, Number of panels = 54; Ha: At least one panel is stationary, Number of periods = 15.

4.3.2 The Normality Test

The normality assumption assumes that the errors of prediction are normally distributed. The Skewness-Kurtosis and Jarque-Bera Statistics might be used to check the null hypothesis that the sample is drawn from a normally distributed population (Park, 2002). The Jarque-Bera statistic would not be significant and p-value should be greater than 5% if the residuals are normally distributed (Brooks, 2008). The results in Table: 4.2 report a P-value of 0.35, higher than 0.05, suggesting that normality assumption holds.

Table 4.2: Jarque-Bera Test

Skewness/Kurtosis tests for Normality					
Variable	**Obs**	**Skewness**	**Kurtosis**	**Jarque-Bera**	**Prob**
Residuals	626	3.675305	0.7232	2.07	0.35490

Source: Appendix B.60

4.3.3 Serial Correlation Test

In the presence of residuals serial correlation, statistical inferences can be misleading. Since the Durbin Watson test is only applicable to test serial correlation in time series, this study uses GMM (Arellano-Bond) serial correlation test which is appropriate in panel-data models where a significant test statistic indicates the presence of serial correlation. The P-value of the test is greater than 5% as shown in Table 4.3, suggesting the presence of no serial correlation of errors.

Table 4.3: GMM Serial Correlation Test

Arellano-Bond Serial Correlation Test Equation: EQ02 Sample: 2000-2014 Included observations: 572				
Test order	**m-Statistic**	**Rho**	**SE(rho)**	**Prob.**
AR(1)	0.293548	2.772025	1.878	0.5985
AR(2)	0.04939	0.120335	2.436427	0.9606

Source: Appendix B.61

4.3.4 Multicollinearity Test

Multicollinearity refers to the situation in which independent variables are highly correlated; resulting in a paradoxical effect, whereby the regression model fits the data well, but none of the independent variables has a significant impact in predicting the dependent variable (Gujarati, 2004). Among several ways of multicollinearity tests, Pearson coefficient of correlation between variables is used to detect any problem. Table 4.4 reports the Pearson correlation of the variables used in the regressions. As observed from the table, multicollinearity is not a serious problem since majority of correlation coefficients are below 0.75 (Malhotra, 2004).

Table 4.4: Pearson Correlation Test of Explanatory Variables

	CASHDIV(-1)	EPS	ROE	D(NAV)	D(SIZE)
CASHDIV(-1)	1				
EPS	0.1463	1			
ROE	0.0986	0.1184	1		
D(NAVPS)	0.0283	0.1820	0.0247	1	
D(SIZE)	-0.0600	-0.0002	0.0227	-0.0868	1

4.3.5 Choice of Regression

Since this study uses a panel data, there are two types of panel estimator approaches that can be employed, namely: fixed effects models (FEM) and random effects models (REM) (Brooks, 2008). To examine whether individual effects are fixed or random, a Hausman specification test (Baltagi, 2005) was conducted providing evidence in favor of the FEM model as presented in Table 4.5 (p-value for tests is 0.07%). This result supports Baltagi's (2005) recommendation that the fixed effects (FE) method is an efficient estimator for the unbalanced panel models (Baltagi, 2005).

Table 4.5: Hausman Test of Linter's Model and Proposed Model

Model	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Lintner's Model	22.5970	2	0.0000
Proposed Model	21.4434	5	0.0007

Source: Appendix B.56, B.57

4.3.6 Dynamic Panel Data

Since non-financial companies listed in Dhaka Stock Exchange dividend payout ratio may exhibit a certain degree of persistence over time, the lagged dividend payout is included in the independent variables. The magnitude and the significance of this variable might suggest the presence of a dynamic nature of the model. Therefore, GMM test is run where the declared endogenous variable occurs as an explanatory variable in a delayed form

4.4 Empirical Results and Discussion

4.4.1 Descriptive Statistics

Table: 4.6 provides a summary of the descriptive statistics of all variables for the 54 listed Bangladeshi company for a period of 15 years from year 2000 to 2014 with a total of more than 641 unbalanced observations. The table reports the mean, standard deviation, number of observations, minimum and maximum of all variables to give an overall description of data used and to serve as data screening tool to spot unreasonable figure.

Table 4.6: Descriptive Statistics of all Variables

	CASHDIV	CASHDIV(-1)	EPS	ROE	NAVPS	SIZE
Mean	0.463	0.433	26.268	0.110	194.206	731
Median	0.220	0.220	10.480	0.129	75.265	190
Maximum	6.200	6.200	456.520	2.910	2547	13503
Minimum	0.000	0.000	-107.370	-27.679	-323.090	4
Std. Dev.	0.749	0.673	52.438	1.054	355.480	1943
Skewness	3.832	3.88	3.725	-24.643	3.6186	4.9569
Kurtosis	20.74	22.20	21.000	649.397	18.0127	29.897
Observations	695	641	751	747	748	759

Source: Appendix B.55

According to the Table: 4.6, most variables comprise more than 700 observations except the CASHDIV and CASHDIV (-1). This is due to missing reported figure from BSEC. Variables with any missing values are dropped, leading to lessen observations, which are used in the regression. Variables of SIZE and NAVPS present larger standard deviation as compared with other variables. The means of the dividend payout ratio and the previous year dividend payout ratio are similar, being 46.3 and 43.3 percent, respectively.

4.4.2 Regression Results

After testing all hypotheses, three econometric models were used to find the determinants of dividend policy of non-financial companies listed in Dhaka Stock Exchange. First, Lintner's model is replicated by using the data obtained from non-financial companies listed in Dhaka Stock Exchange (Model 1). Then, Models 2 Lintner's Model is used by including additional explanatory variables. All these models are based on OLS regression. Finally, the regression results show a Dynamic Panel Model by using GMM.

4.4.2.1 Lintner's Dividend Model

To replicate Lintner's model in the non-financial companies listed in Dhaka Stock Exchange, the only variables included are the earning per share and its lagged dividend payments, with dividends used as a dependent variable.

Table 4.7: OLS Regression- Lintner's Model

	Fixed Effect			Random Effect		
Variable	Coefficient	t-Statistic	Prob.	Coefficient	t-Statistic	Prob.
C	0.056	3.004	0.003	0.019	1.256	0.210
CASHDIV(-1)	0.961	34.732	0.000	1.060	59.264	0.000
EPS	0.000	0.879	0.380	0.000	0.107	0.915
R-Squared	0.864			0.853		
Adjusted R squared	0.851			0.852		
F-statistic	66.142			1808.23		
Prob(F-statistic)	0.000			0.000		
Observation	628			628		

Source: Appendix B.58

The results in Table: 4.7 show that the coefficient of lagged dividend payments is positive and statistically significant both, consistent with previous studies in emerging markets (Ahmed & Javid, 2009; Al-Ajmi & Hussain, 2011). However, the coefficient of EPS, although positive, is statistically insignificant. These findings are consistent with those reported by Aivazian et al. (2003) who find that firms in some emerging capital markets do not follow a stable dividend policy. The result clearly indicates the importance of lagged dividends on current year's dividend decisions. The adjusted value reveals that the existing model explains 86.4 (fixed effect) percent of the dividend payout pattern of the non-financial companies listed in Dhaka Stock Exchange.

4.4.2.2 Determinants of the Dividend Payout Ratio

Selected model try to investigate what are the determinants of dividend payouts by including several additional variables. The pooled OLS regression was used as an extension of Lintner's model to examine whether CASHDIV(-1), EPS, ROE, NAVPS, SIZE are significant determinants of the dividend payments.

Regression analysis has been applied to test the significance of the model and the explanatory power of the independent variables. The results pooled dynamic OLS multiple linear regression are shown in Table: 4.8. The results, as depicted by Table: 4.8, clearly shows that the regression model containing all the explanatory variables explains 86.6% (Fixed effect) of the total variation of Dividend payout policy in the Bangladesh. The F value (61.5) of the overall model is found to be significant, showing the applicability of the overall model.

Table 4.8: Determinants of Cash Dividend OLS (Fixed & Random Effect) and GMM Regression

	Fixed Effect			Random Effect			GMM		
Variable	Coefficient	t-Statistic	Prob.	Coefficient	t-Statistic	Prob.	Coefficient	t-Statistic	Prob.
C	0.058	2.788	0.006	0.023	1.428	0.154	NA	NA	NA
CASHDIV(-1)	0.961	34.388	0.000	1.059	58.289	0.000	0.855	2107	0.000
EPS	0.000	0.660	0.509	0.000	0.018	0.985	0.001	78.338	0.000
ROE	0.003	0.227	0.820	0.005	0.461	0.645	-0.001	-0.410	0.682
D(NAVPS)	0.000	0.189	0.850	0.000	0.455	0.650	0.000	-11.339	0.000
D(SIZE)	0.000	-0.154	0.878	0.000	-0.837	0.403	0.000	60.343	0.000
R-Squared		0.864			0.853				
Adjusted R-squared		0.850			0.852				
F-statistic		61.560			712.81				
Prob(F-statistic)		0.000			0.000				
J-statistic								50.94534	
Prob(J-statistic)								0.396986	
Obs.		621			621			572	

Source: Appendix B.62, B.63, B.64

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The use of dynamic OLS multiple linear regression results, as given in Table: 4.8 where the explanatory variables are previous year dividend, Earning per share, Return on Equity, Net Asset Value per share, Size of the firm. Among five independent variable only previous year dividend is statistically significant and Earning per share, Return on Equity, Net Asset Value per Share, Size of the firm are statistically insignificant. Though in this study, we showed fixed and random effect of dynamic OLS, Fixed effect of dynamic OLS is more preferable because of Hausman test suggested fixed effect of dynamic OLS.

The comparison between empirical evidence and results concerning the determinants of Dividend policy of Bangladesh as found in this study is summarized in Table: 4.9.

Table: 4.9 Comparison between Empirical Evidence and Results in the Study (Fixed Effect)

Comparison between empirical evidence and results in the study		
Variable	Previous empirical evidence from other studies	Result from this study
CASHDIV(-1)	Positive	Positive
EPS	Positive	No Relation
ROE	Positive	No Relation
NAVPS	Have Relation	No Relation
SIZE	Positive/Negative	No Relation

In presence of lagged dependent variable as a regressor, the usual ordinary least squares (OLS) estimator suffers from biases due to unobserved heterogeneity and possible endogeneity of the regressors. Since non-financial companies listed in Dhaka Stock Exchange dividend payout ratio may exhibit a certain degree of persistence over time, the lagged dividend payout is included in the independent variables. The magnitude and the significance of this variable might suggest the presence of a dynamic nature of the model.

Therefore, we run GMM to better control for endogeneity of the entire explanatory variable.

The results of GMM are shown in Table 4.8. The J value (50.94) of the overall model is found to be significant, showing the applicability of the overall model.

The use of GMM linear regression results, as given in Table: 4.8 where the explanatory variables are previous year dividend, Earning per share, Return on Equity, Net Asset Value Per share, Size of the firm. Among five independent variable four variable previous year dividend, Earning per share, Net Asset Value, Size of the firm are statistically significant and only Return on Equity is statistically insignificant.

The comparison between empirical evidence and results concerning the determinants of Dividend policy of Bangladesh as found in this study is summarized in Table: 4.10.

Table 4.10: Comparison between Empirical Evidence and Results in the Study (GMM)

Comparison between empirical evidence and results in the study		
Variable	Previous empirical evidence from other studies	Result from this study
CASHDIV(-1)	Positive	Positive
EPS	Positive	Positive
ROE	Positive	No Relation
NAVPS	Have Relation	Positive
SIZE	positive/Negative	Positive

4.5 Recapitulation of the Chapter

This research uses Multiple Regression Model in Eviews 8 software to examine the determinants of dividend policy in Bangladesh based on a sample of 54 companies which are paying cash dividend listed in the DSE. The study aimed at establishing variables affecting dividend policies of listed non-financial companies in Dhaka Stock Exchange. The results shows statistically significant and positive relationship among earnings per share, NAVPS, previous year dividend, size of the firm but found statistically insignificant relationship with return on equity on dividend payment. Therefore, the major determinants of dividend policy of non-financial companies in Bangladesh are earnings per share, NAVPS, previous year dividend and size of the firm.

In next chapter efforts are made to analyze the impact of dividend payment practices on share price of the companies listed in the Dhaka Stock Exchange.

Chapter

5

Impact of Dividend Payment Practices on Share Price of the Companies Listed in DSE

Chapter Five

Impact of Dividend Payment Practices on Share Price of the Companies Listed in Dhaka Stock Exchange

5.1. Introduction

Dividends are payments made by a corporation to its shareholder members. It is the portion of corporate profits paid out to stockholders. When a corporation earns a profit or surplus, that money can be put to two uses; it can either be reinvested in the business (called retained earnings), or it can be distributed to shareholder[138]. Corporations declare dividend for the benefit of its shareholders. They may either declare cash dividend or stock dividend. As it is with the objective of the corporations to increase the shareholders' wealth, they declare dividends as a part of the income to them besides capital gain they achieve through appreciation of the prices of their stocks. When cash dividends are given the shareholders directly benefit from the cash income as part of their cash income after taxes are deducted from it. On the other hand when stock dividends are declared the shareholders of a company may keep the shares and hope that the company will be able to utilize the money not paid out in cash dividend to earn a better rate of return in the future. They may also sell some of their new shares to create their own cash dividend which are basically tax exempted.

[138] Arther Sullivan and M. Steven, *Economics: Principles in Action*. Upper Saddle River, New Jersey 07458: Pearson Prentice Hall, (2003), p. 273. ISBN 0-13-063085-3: http://en.wikipedia.org/wiki/Dividend

In the capital market, all firms operate in order to generate earnings. Shareholders make investment in equity capital with the expectation of making earnings in the form of dividends or capital gains. Thus, shareholders' wealth can increase through either dividend or capital gain. Once the company earns a profit, it should decide on what to do with the profit. It could be continued to retain the profit within the company, or it could pay out the profit to the owners of the company in the form of dividend. Dividends are payment made to stockholders from a firm's earning in return to their investment. Dividend policy is to determine the amount of earnings to be distributed among shareholders and the amount to be retained or reinvestment in the firm. The objective of a dividend policy should be to maximize shareholder's wealth position. To maintain the competitiveness of the companies, today finance managers have to make critical financial decisions which will lead to long-run perspective with the objective of maximizing the shareholders' wealth. Investors expect dividend from the companies in order to maintain their regular income and participate actively in trading as the companies declare the dividend to maximize their gain in near future.

Corporations declare dividend for the benefit of its shareholders. They may either declare cash dividend or stock dividend. As it is with the objective of the corporations to increase the share holders' wealth, they declare dividend as a part of the income to them beside capital gain they can achieve through appreciation of the prices of their stocks. When cash dividends are given the shareholders directly benefited from the cash income as a part of their cash income after taxes are deducted from it. On the other hand, when stock

dividends are declared the shareholders of a company may keep the shares and hope that the company will be able to utilize the money not paid out in cash dividend to earn a better rate of return in the future. They may also sell some of their new shares to create their own cash dividend which are basically tax exempted.

However, as a result of the dividend declaration, the question arises on its effects on the capital gain (or loss) measured by the share price appreciation (or depreciation).

The earlier studies on Dhaka Stock Exchange find that dividend does not add values to the investors as far as cumulative returns are concerned. However, studies done by previous authors did not differentiate the effects between cash and stock dividends. Study done by Rahman and Amin (2009)[139] on DSE found that positive returns are reported prior to the dividend announcements irrespective of the nature of the dividends due to speculative trading and insider information regarding the announcements. Using the Cumulative Average Abnormal Returns (CAARs) attributed to the announcement the study also concluded that the investors loss up to 7% of their invested capital. The authors also recognized that the returns are highly volatile around the announcement date and suggested a study may be conducted to analyze if the declaration of stock dividend in isolation results in any gain to the investors. The present study aims to examine the stock return behavior around dividend announcements for both the cash and stock dividend in DSE during mid-2014 to 2015.

[139] M. L. Rahman and M. R. Amin, "Effects of Dividend Declaration on the Security Price Performance Using Dhaka Stock Exchange Limited: Event Study Method", *Journal of Business and Technology*, Vol. IV, Issue I, (2009), pp. 30-47.

Dividend announcements made by companies have been taken for the study and this has been done by identifying actively traded 30 companies that have provided only cash dividend and 30 actively traded companies that have provided stock dividend only for the year 2014.

After the implementation of the criteria the event study methodology has been used for calculating the abnormal returns and the paired t-test for means has been used to test the impact of announcement on share price.

5.2 Findings and Interpretation

This section entails all the findings and results of the study and the interpretation of the test results. The calculated numerical values in tabular form can be found in Appendix at the end of the thesis. For better understanding for the reader a few graphs and some numerical values for interpretation are included in this section.

5.2.1 Test Results for Heteroscedasticity

The test result shown in Appendix C.1 indicates that both the data are homoscedastic. There are two groups, one is companies paying only cash dividend and the other is paying only stock dividend. So we have two test results for the two groups.

First, the test result in Appendix C.1 (A) for the companies paying only cash dividend indicates an F-statistic of 0.092356 which has a p value of 0.7635 which is greater than 0.05. It indicates that the null hypothesis of homoscedasticity cannot be rejected. That means the data is free from Heteroscedasticity or in other way the data has an equal variance. Again, Obs*R-squared which follows a Chi-Square distribution has a value of

0.098627 and a corresponding p value of 0.7535 which also indicates that the data is homoscedastic.

Second, the test result in Appendix C.I (B) for the companies paying only stock dividend shows an F-statistic of 0.27084 which has a significantly high p value of 0.6069 which is greater than 0.05. It indicates that the null hypothesis of homoscedasticity cannot be rejected. That means the data is free from Heteroscedasticity or in other way the data has an equal variance. Again, Obs*R-squared which follows a Chi-Square distribution has a value of 0.287406 and a corresponding p value of 0.5919 which also signifies the evidence for homoscedasticity.

5.2.2 Interpretation of Regression Output

The output result of the regression can be found in Appendix C.2. As said earlier that in the present study the companies are divided into two groups one is paying only cash dividend and other is only stock dividend.

In the first case, we have taken only cash dividend payment as independent variable (x) and average market adjusted abnormal return (MAAR) as the dependent variable (Y). Here we try to observe the impact of cash dividend on MAAR of selected sample companies.

In the output result in Appendix C.2 (A) R^2 measures the proportion or percentage of the total variation in Y explained by the regression model. The table shows that R^2 is 0.000244 or 0.02% only, thus it implies that in this regression model the independent

variable x has explained only 0.02% variation of Y. That means the model which has only one independent variable (cash dividend) alone cannot explain much about stock price other variables significantly affects stock price.

The Standard error of regression model indicates the likely accuracy of the regression model. Here we have standard error of 0.06197 .It is a relatively low value of standard error and we can rely on the output of the model.

We have an Adjusted R-squared of -0.035461 and residual sum of square of0.107529. Here our calculated F value is 0.006844 which has a p value of 0.934658. So we cannot reject the null hypothesis that is cash dividend cannot significantly affect the Market Adjusted Abnormal Return for the event window studied here. This may be due to weak form of efficient capital market.

T test is conducted to estimate the statistical significance of each regression coefficient. Here our calculated t statistic is -0.08273 which has a corresponding p value of 0.9347. So we cannot reject our null hypothesis, and the variable cash dividend is statistically insignificant in explaining stock price. That is cash dividend alone cannot significantly affect share prices.

In the second case, we have taken stock dividend payment as independent variable (X) and average market adjusted abnormal return (MAAR) for the companies that provided stock dividend as the dependent variable (Y). Here we try to perceive the effect of cash dividend on MAAR of selected companies.

As said earlier R^2 measures the proportion or percentage of the total variation in Y explained by the regression model. The output table in Appendix C.2 (B) shows that R^2 is 0.046748 or 4.67% only, thus it suggests that in this regression model the independent variable X has (stock dividend) explained only 4.67% variation of independent variable Y (stock price). That means the model which has only sole independent variable (stock dividend) alone cannot explain much about stock price and other variables significantly shakes stock price.

The Standard error of regression model indicates the likely accuracy of the regression model. Here we have standard error of 0.005824. It is a relatively low value of standard error and we can depend on the output of the model.

We have an Adjusted R-squared of 0.012703 and residual sum of square of 0.00095. Here our calculated F value is 1.373133 which has a p value of 0.251149 which is greater than rejection mark of 0.05. So we cannot reject the null hypothesis, that is stock dividend don't significantly affect the Market Adjusted Abnormal Return for the event window studied here. This may be due to weak form of efficient capital market.

T test is conducted to estimate the statistical significance of each regression coefficient. Here our calculated t statistic is -1.17181 which has a corresponding p value of 0.2511 which is greater than 0.05. So we cannot reject our null hypothesis, and the variable stock dividend is statistically insignificant in explaining stock price. That is stock dividend alone cannot significantly explain share prices.

5.2.3 Results in Event Study

In the above discussion we have found that neither cash nor stock dividend has statistical significance in explaining stock price. But in theoretical stand point as well as many practical confirmation from many well-known stock exchanges all over the world suggest that dividend has some important implication in stock price at least in the short run. That's why we are motivated to conduct further study to justify the impact of dividend on the stock price. Also we tried to unveil the impact of cash and stock dividend separately.

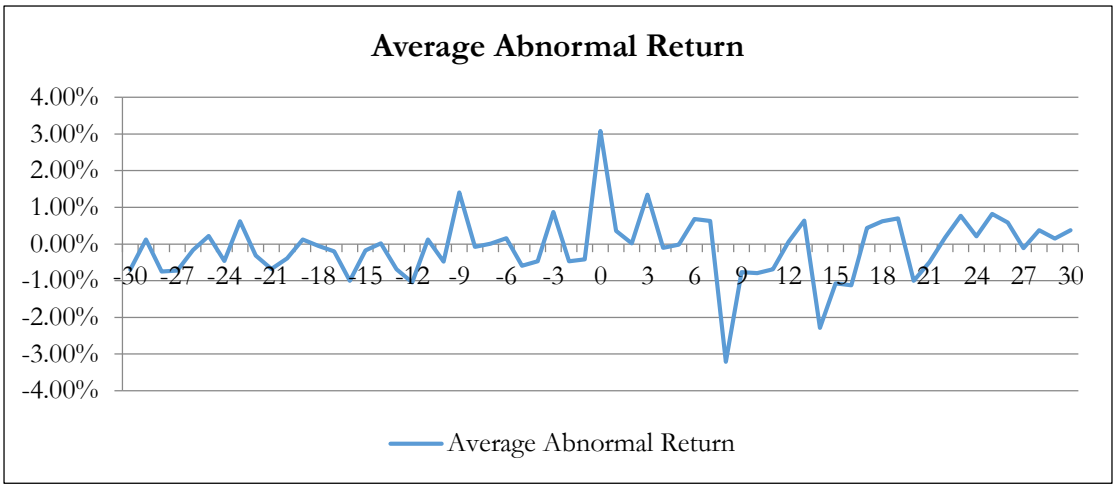
5.2.4 Comparing Market Adjusted Abnormal Returns (MAAR)

Comparison between the market adjusted average abnormal returns (MAAR) for stock dividend and the MAAR for the cash dividend is shown with their respective t values with n-I degrees of freedom (n=30 for stock and n=30 for cash). The findings have reported under Appendix C.3. The numerical values highlighted with a dark background indicates that the corresponding abnormal returns are statistically significant at 90% confidence level (reject the null hypothesis of 0 abnormal return) and those are highlighted with red border are statistically significant at 95% confidence level.

The present study has found that the market adjusted average abnormal returns attributed solely to the dividend announcement day is statistically insignificant for both stock and cash dividends. Thus, it is evident that there are no differences in the impact of cash or stock dividend as far as the announcement day is concerned.

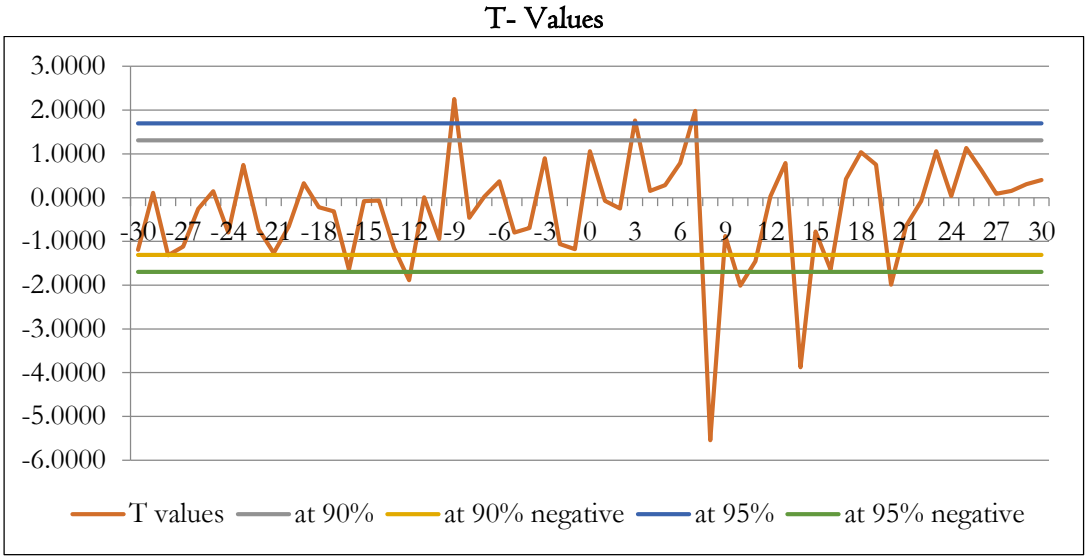
However, the significant negative returns for stock dividend prior to the announcement day (such as day-28, - 16, -12 and -9) indicate speculative nature of the investors' behavior. As it is with the nature of weak form efficient market to predict the returns around an upcoming event, the rumors and hearsay dominates the market. It is also possible that the news has been leaked out earlier resulting in the negative effect of the event. In such a case the negative returns associated prior to the announcement justify that the speculators are in action with negative news about the announcement. On the other hand positive returns for stock dividends are reported for short run after the announcement, (such as day 3 and 7) and again bounces back with the negative return during days 8, 10, 11, 14, 16, and 20 indicating a negative attitude during the post announcement period. The negative returns could be attributed to the unfulfilled expectation of the investor. Again the fact may indicate that the investors lose their faith on the management of the companies' ability after hearing the news of stock dividend. The daily average abnormal returns during the event window for stock dividend and the calculated value of the t stats are portrayed in the following graphs (Fig. 5.1 and 5.2).

Figure 5.1: The daily abnormal return during the event window for the stock dividend announcement



Source: Working Datasheet

Figure 5.2: T - values of the daily abnormal return in the event window for stock dividend.

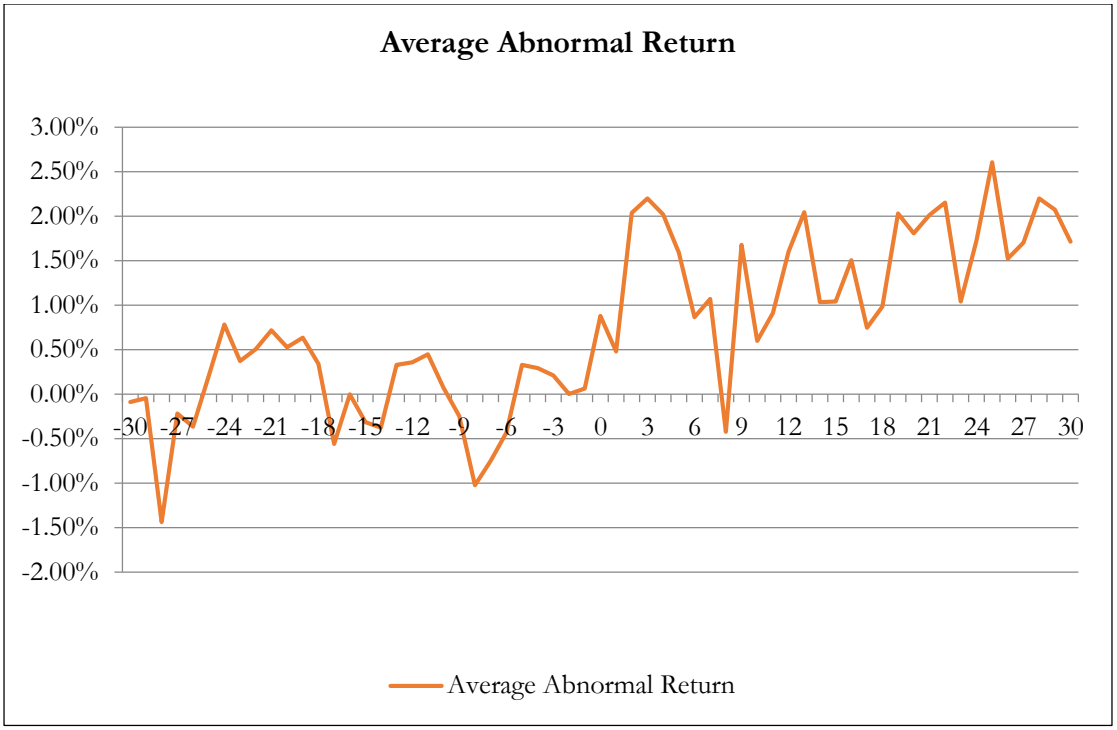


As far as cash dividend is concerned, there is no significant returns exist for the announcement day. However, considerable negative returns are reported prior to the announcement day (such as days -28, -17, -14 and -8). This is a clear signpost of speculative nature in the market. As it is with the nature of weak form efficient market to predict the returns around an upcoming event, the rumors and hearsay dominates the market. It is also possible that the news has been leaked out earlier resulting in the negative effect of the event. In such a case the negative returns associated prior to the announcement justify that the speculators are in action with negative news about the announcement. On the other hand positive returns are reported on the 2nd and 3rd day following the announcement of cash dividend. During day 8 after the announcement, there is an odd negative return and after that the market bounces back with the positive return again during days 10, 11, 18, 23 and 25. The positive returns could be attributed to the lag between the announcement day and the record day. As the record day becomes

nearer, the stock indicates some positive returns, though the length of the lag may vary for A, B or Z categories of companies as far as the DSE is concerned. Therefore, the investors in general shows more positive attitude towards cash dividends rather than stock dividend. Again, this fact may indicate that investors perceive cash dividend as good and positive sign and they gain their faith on the management of the companies.

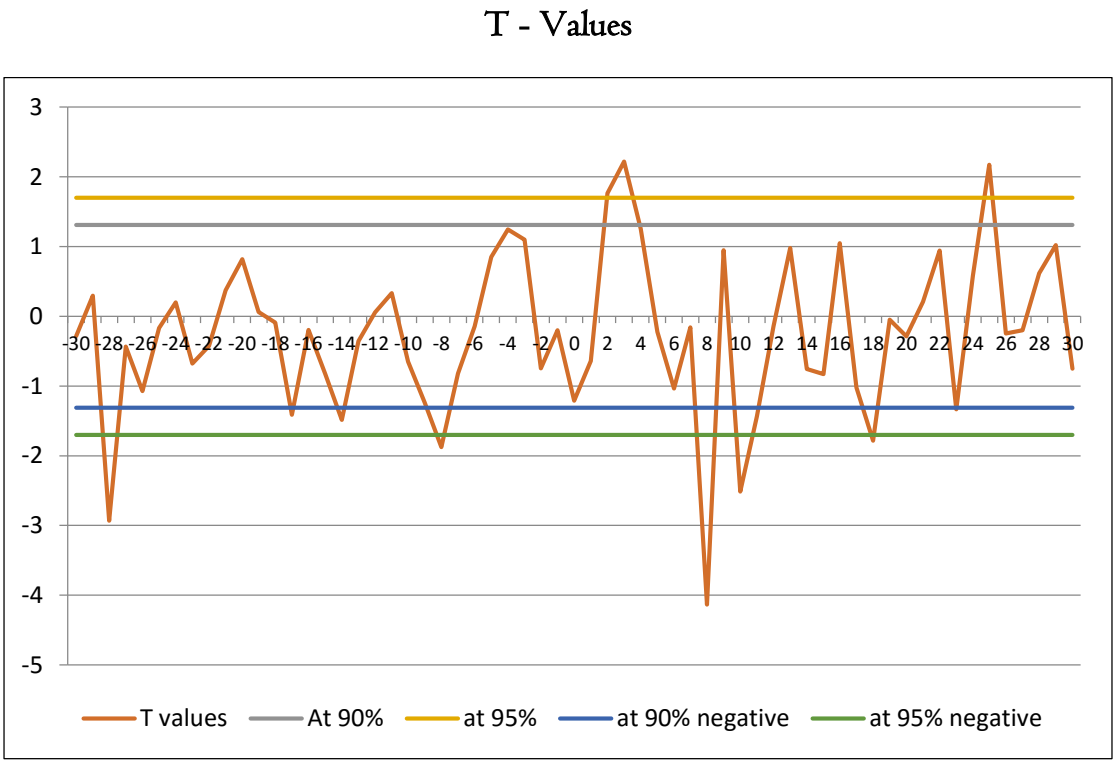
The daily average abnormal returns during the event window for cash dividend and the calculated value of the t statistics are displayed in the following graphs (Fig. 5.3 and 5.4).

Figure 5.3: The daily abnormal return during the event window for the cash dividend announcement.



Source: Working Datasheet

Figure 5.4: T -values of the daily abnormal return in the event window for cash dividend.



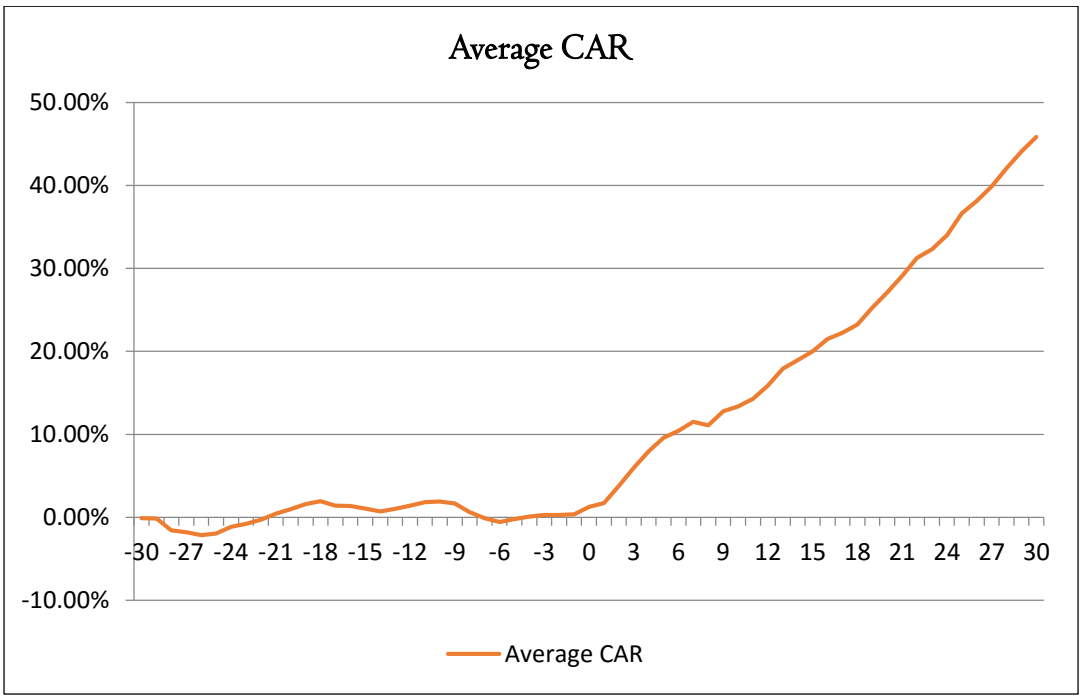
5.2.5 Comparing Cumulative Abnormal Returns (CAR)

The average cumulative abnormal return and their corresponding t values can be found in Appendix C.5. We have a surprising finding regarding cumulative abnormal return for cash dividend. Significant negative abnormal return has been reported during days -28 to -22 prior to the announcement. However, after that significant positive return has been found till day -8. Days -7, -6 and -5 reported negative return and after that considerable significant positive return has been experienced. The highest cumulative abnormal return is 45.83% which is nearly 50%. But positive return was reported at the last day (30) of the event window. That means if an investor holds the portfolio of securities that pays only cash dividend, on an average will end up a positive return of

45.83%! This is a huge return within short time, so it will be a cash-cow for a speculator. This indicates that investors prefer securities that provides cash dividend. The fact also indicates that as the record day for entitlement of the dividend approaches nearer, the stock price goes up considerably. It also would like to conclude that the record day plays a very important indicator for realizing the abnormal returns for cash dividend.

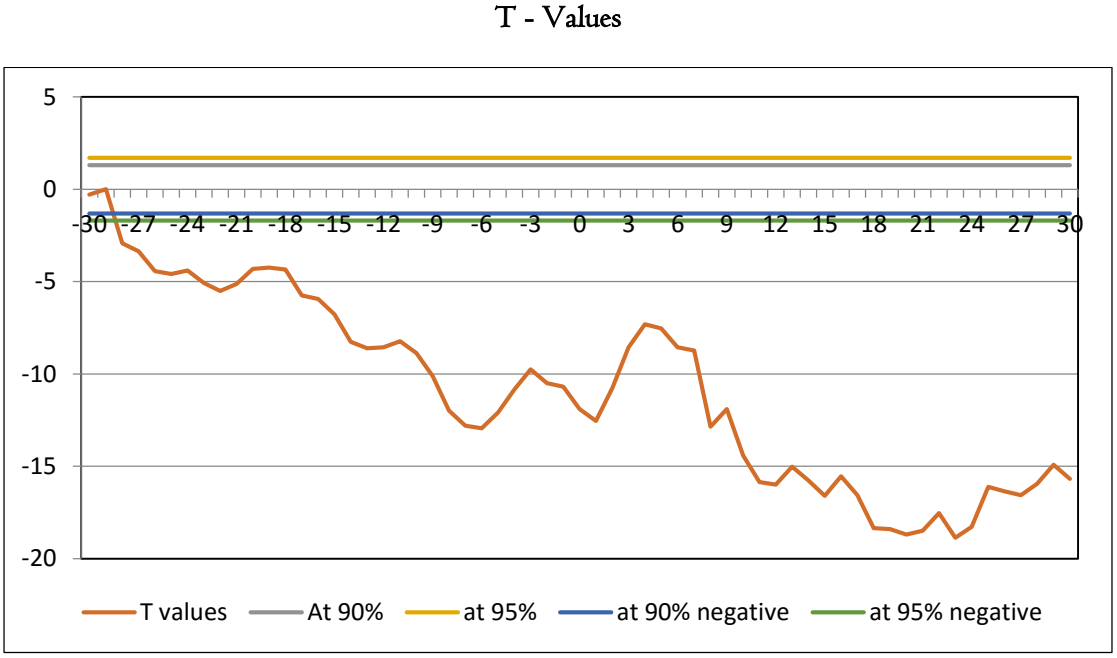
The daily average cumulative abnormal returns during the event window for cash dividend and the calculated value of the t statistics are displayed in the following graphs (Fig. 5.5 and 5.6).

Figure 5.5: The daily average cumulative abnormal return during the event window for the cash dividend.



Source: Appendix C.5

Figure 5.6: T - values of the daily average cumulative abnormal return in the event window for cash dividend.

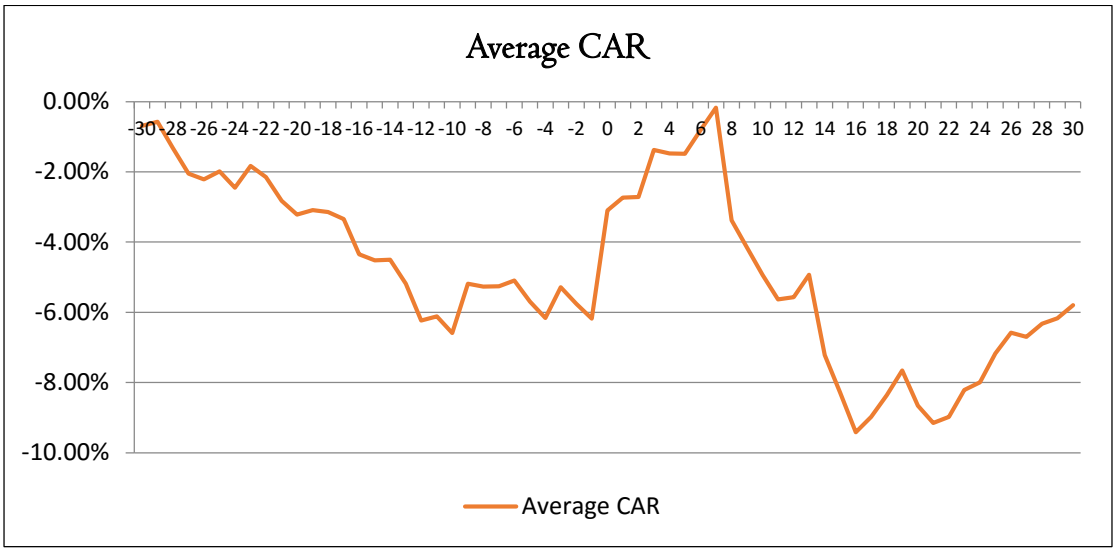


Source: Appendix C.5

On the other extreme considerable significant negative return was reported during the pre-announcement period for stock dividend, even this negative return continues throughout the whole window. At the final day of the window an average cumulative return of -5.80% was reported which indicates that if an investor holds a portfolio which pays only stock dividend, on an average will lose -5.80% of his investment. This fact also indicates that investors prefer cash dividend than stock dividend.

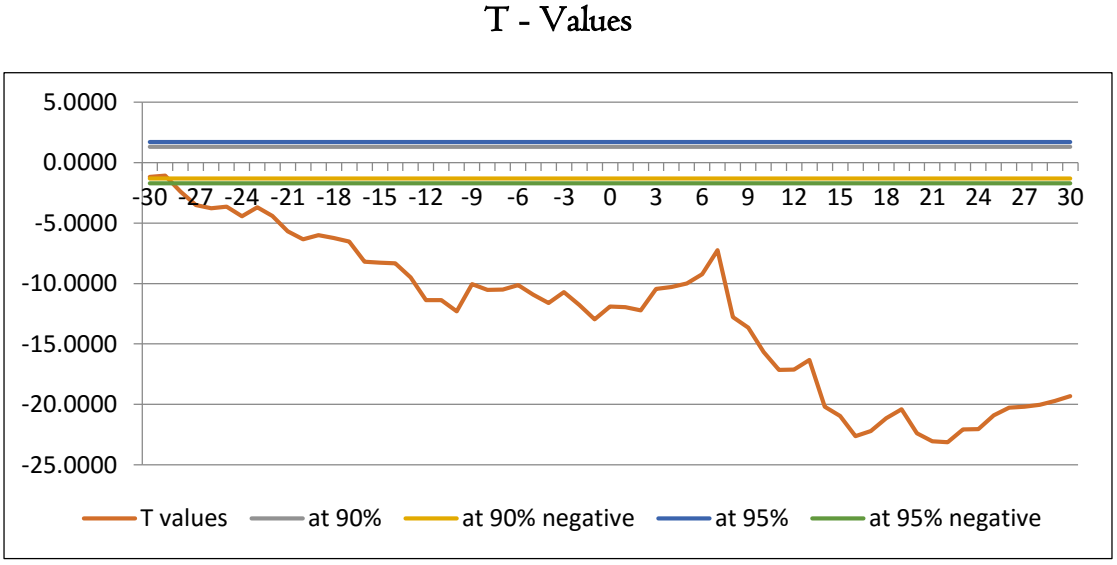
The daily average cumulative abnormal returns during the event window for stock dividend and the calculated value of the t statistics are displayed in the following graphs (Fig. 5.7 and 5.8).

Figure 5.7: The daily average cumulative abnormal return during the event window for the Stock dividend.



Source: Appendix C.5

Figure 5.8: T - values of the daily average cumulative abnormal return in the event window for Stock dividend.



Source: Appendix C.5

So, finally, from the above findings in this study it can be concluded that the investors should prefer cash dividend rather than stock dividend because in the long run share prices generally be maximized if companies pay cash dividend but it generally be reverse or lower if companies pay bonus share as dividend. In addition it has been observed that as the record day for entitlement of the dividend approaches nearer, the investors will have the opportunity to realize the cash dividend within very shortest possible time. That is why from our findings we would like to conclude that record day plays an important indicator for realizing the abnormal returns for cash dividend paying companies indeed.

5.3 Recapitulation of the Chapter

The present study has found that the market adjusted average abnormal returns attributed solely to the dividend announcement day is statistically insignificant for both stock and cash dividends. Thus, it is evident that there are no differences in the impact of cash or stock dividend as far as the announcement day is concerned.

However, the significant negative returns for stock dividend prior to the announcement day (such as day-28, - 16, -12 and -9) indicate speculative nature of the investors' behavior. On the other hand positive returns for stock dividends are reported for short run after the announcement, (such as day 3 and 7) and again bounces back with the negative return during days 8, 10, 11, 14, 16, and 20 indicating a negative attitude during the post announcement period. The negative returns could be attributed to the unfulfilled

expectation of the investor. Again the fact may indicate that the investors lose their faith on the management of the companies' ability after hearing the news of stock dividend. As far as cash dividend is concerned, there is no significant returns exist for the announcement day. However, considerable negative returns are reported prior to the announcement day (such as days -28, -17, -14 and -8). This is a clear signpost of speculative nature in the market. On the other hand, positive returns are reported on the 2nd and 3rd day following the announcement of cash dividend. During day 8 after the announcement there is an odd negative return and after that the market bounces back with the positive return again during days 10, 11, 18, 23 and 25. Therefore, the investors in general show more positive attitude towards cash dividends rather than stock dividend. Again, this fact may indicate that investors perceive cash dividend as good and positive sign and they gain their faith on the management of the companies.

The average cumulative abnormal return shows significant negative abnormal during days -28 to -22 prior to the announcement. However, after that significant positive return has been found till day -8. Days -7, -6 and -5 reported negative return and after that considerable significant positive return has been experienced. The highest cumulative abnormal return is 45.83% which is nearly 50%! That means if an investor holds the portfolio of securities that pays only cash dividend, on an average will end up a positive return of 45.83%! On the other extreme, considerable significant negative return was reported during the pre-announcement period for stock dividend, even this negative

return continues throughout the whole window. This fact also indicates that investor prefer cash dividend than stock dividend.

To evaluate the impact of dividend payment on security price our findings suggest that the investors in general show more positive attitude towards cash dividends rather than stock dividend. Again, this fact may indicate that investor perceive cash dividend as good and positive sign and they gain their faith on the management of the companies.

An elaborate prospect is published in the national dailies inviting the common people to purchase shares. It is published so widely but confusing in some cases and as such the actual matter is not properly described and for this reason the investors fail to understand the realities. This creates the dilemma to the investors and as such they cannot take wise decision in investing their capital in the Initial Public Offerings (IPOs). Bangladeshi stock markets are unpredictable for upbringing initial investment in stock market. Exclusively, accepted in DSE, there is no theory which we can apply effectively to prove truthiness in the long run. The market which is not efficient in terms of relative information, government control is no longer affected by these determinants. Due to inefficient market, the study may provide plenty of evidence that determinants of stock price (such as dividend, any specific news, economic factors etc.) have a very little effect on share price. The result of the study reinforce that many factors have relationships, both positive and negative with share market. The study is not 100% error free for selecting variables but it includes a set of determinants that are important.

The findings do not reject our null hypothesis and provide no strong evidence that stock price reacts significantly with dividend. It also does not reject our null hypothesis of zero abnormal return and provide no strong evidence that stock price reacts significantly on the announcement day of dividend. However, there are some evidence of positive return after the announcement of cash dividend and some negative return before and after the announcement of stock dividend but no significant change on the announcement day. This also indicates that market reacts slowly to the announcement information.

The next chapter deals with summary, recommendations and conclusions.

Chapter

6

Summary, Recommendation and Conclusions

Chapter Six

Summary, Recommendation and Conclusions

6.1 The Preamble

This thesis entitled "Dividend Policy Practices in Corporate Firms of Bangladesh: Trends and Determinants" attempts to identify the dividend policy practices by the corporate firms of Bangladesh by analyzing the trends and growth of dividend and also attempts to find the relationship with the trends and growth of the prices of the shares. This study also tries to identify the significant factors which are the prominent determinants of the dividend policy of the corporate firms and lastly attempts to identify the security prices reaction to the dividend announcement of corporate firms of Bangladesh in the Dhaka Stock Exchange Ltd. To realize those objectives, this study is divided into six chapters, which are as follows: (1) Introduction, (2) Research Methodology, (3) Dividend Payment Practices and Analysis of Trends of Dividend, (4) Determinants of Dividend Policy of Corporate Firms of Bangladesh, (5) Impact of Dividend Payment Practices on Share Price of the Companies Listed in Dhaka Stock Exchange, and finally (6) Summary, Recommendations and Conclusions.

In order to solve the research problems in the capital market, this study employs content analysis and quantitative research methods and collects secondary data from the annual

reports of relevant companies, different issues of monthly reviews of Dhaka Stock Exchange Limited.

Data collected from different sources are computed and analyzed by the researcher by applying Eviews 8 Software. Computer software MS Excel 13 is also used for detail statistical analysis. To make the data more meaningful, those were analyzed in tabular forms, percentages, mean, median, standard deviation, time series and in some other statistical forms according to their suitability and needs of the study.

An event methodology is employed to measure security price reactions around the time of the event of dividend announcement. Thirty days (-30) before the announcement day were selected as the observation period whereas, thirty days (+30) after the announcement day were selected as the comparison period. To test for statistical significant security price movement around dividend announcement date, the Student Test was employed to measure the significance among the means of the samples, observation period, and comparison period.

6.2 Chapter Three: Dividend Payment Practices and Analysis of trends of Dividend

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, the comprises which give the dividends that received by the shareholders and they get capital gain or loss during 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.

Dividend policy constitutes a major financial decision for corporate business undertaking. It is obligatory for the firms to take 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 available literature on the impact of dividend on the valuation of firms' wealth of shareholders, the broad consensus and evidence seems to be in the favor of relevance of dividends.

From the practitioners' viewpoint, dividend policy practices of a firm has great impact on implications for investors whether they should invest or not or hold the share for short term or long term. For this reason, one of the major objectives of the present study is to analyze and evaluate the dividend payment patterns of corporate firms of Bangladesh. This chapter is therefore, designed to look into the detailed dividend payment practice and to find out whether there is any relationship between the trends of dividend and the security prices of the listed companies of the DSE over the long run. For the purpose of this study, only final cash and bonus dividends are considered and stock repurchases are not considered.

In this chapter we have observed the trend of price movement, industry wise for both cash dividend paying and bonus dividend paying companies. Result from our study is clear in the sense that the companies which are paying cash dividend are able to maximize

their share values in a greater extent; on the other hand, companies which are paying bonus dividend are able to maximize their share values in very few extent. 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 and their Compound Growth Rates (CGRs) are 23.09%, 19.22% and 24.23% respectively. And the cash dividend paying companies in case of Fuel and Power industry the stock price growth is 7.45% which is the minimum CGR among these industries. 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 values and their Compound Growth Rates (CGRs) are 16.89%, 14.59% and 8.26% respectively. And the bonus dividend paying companies in case of Travel and Leisure industry the stock price growth is -29.26% which is the minimum CGR among these industries. Average CGR of bonus dividend paying companies is 3.17% and it 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.

6.3 Chapter Four: Determinants of Dividend Policy of Corporate Firms of Bangladesh

The primary objective of the forth chapter of this study is to find out whether several determinants as per the available literature have any influence on the dividend payout polices of DSE listed firms. This chapter examines to what extent various determinants of dividend payout policy can explain the dividend decisions of DSE listed companies.

This research uses Multiple Regression Model in Eviews 8 software to examine the determinants of dividend policy in Bangladesh based on a sample of 54 companies which are paying cash dividend listed on the DSE. The study was aimed at establishing variables affecting dividend policies of listed non-financial companies in Dhaka Stock Exchange.

In this study, stationarity of the data is tested by using Fisher test-a unit root test for unbalanced panels as suggested by Maddala and Wu (1999), where a p-value greater than 5% indicates that the data has a unit root test and is non-stationary. The Fisher test can be calculated in two methods: taking into consideration the augmented Dickey-Fuller (ADF) test or taking into consideration the Philips Perron test (PP). According to Sarbapriya (2012), the PP test provides better results than ADF test and it attempts to satisfy the stationarity conditions for all the variables. Therefore, PP test is used to check the stationarity of this study, although both methods gave similar results. Results reported in chapter indicates that all the variables are stationary, except NAVPS and SIZE, which are stationary only at lag 1. Since including NAVPS and SIZE variables as one lag in the regression will make us lose some observations.

By using the Normality Test, the normality assumption assumes that the errors of prediction are normally distributed. The Skewness-Kurtosis and Jarque-Bera Statistics might be used to check the null hypothesis that the sample is drawn from a normally distributed population (Park, 2002). The Jarque-Bera statistic would not be significant and p-value should be greater than 5% if the residuals are normally distributed (Brooks, 2008). The results in Table: 4.2 report a P-value of 0.35, higher than 0.05, suggesting that normality assumption holds.

In the presence of residuals serial correlation, statistical inferences can be misleading. Since the Durbin Watson test is only applicable to test serial correlation in time series, this study uses GMM (Arellano-Bond) serial correlation test appropriate in panel-data models where a significant test statistic indicates the presence of serial correlation. The P-value of the test is greater than 5% as shown in Table: 4.3, suggesting the presence of no serial correlation of errors.

Multicollinearity refers to the situation in which independent variables are highly correlated; resulting in a paradoxical effect, whereby the regression model fits the data well, but none of the independent variables has a significant impact in predicting the dependent variable (Gujarati, 2004). Among several ways of multicollinearity tests, Pearson coefficient of correlation between variables is used to detect any problem. Table: 4.4 reports the Pearson correlation of the variables used in the regressions. As observed from the table, multicollinearity is not a serious problem since majority of correlation coefficients are below 0.75 (Malhotra, 2004).

At the end, the findings of the chapter four shows statistically significant and positive relationship among earnings per share (EPS), NAVPS, previous year dividend, size of the firm but found statistically insignificant relationship with return on equity (ROE) on dividend payment. Therefore, the major determinants of dividend policy of non-financial companies in Bangladesh are earnings per share, NAVPS, previous year dividend and size of the firm.

6.4 Chapter Five: Impact of Dividend Payment Practices on Share Price of the Companies

Corporations declare dividend for the benefit of its shareholders. They may either declare cash dividend or stock dividend. As it is with the objective of the corporations to increase the share holders' wealth, they declare dividend as a part of the income to them beside capital gain they can achieve through appreciation of the prices of their stocks. When cash dividends are given the shareholders directly benefited from the cash income as a part of their cash income after taxes are deducted from it. On the other hand, when stock dividends are declared the shareholders of a company may keep the shares and hope that the company will be able to utilize the money not paid out in cash dividend to earn a better rate of return in the future. They may also sell some of their new shares to create their own cash dividend which are basically tax exempted.

However, as a result of the dividend declaration, the question arises on its effects on the capital gain (or loss) measured by the share price appreciation (or depreciation).

In chapter five of this study we found that the market adjusted average abnormal returns attributed solely to the dividend announcement day is statistically insignificant for both stock and cash dividends. Thus, it is evident that there are no differences in the impact of cash or stock dividend as far as the announcement day is concerned.

However, the significant negative returns for stock dividend prior to the announcement day (such as day-28, - 16, -12 and -9) indicate speculative nature of the investors' behavior. On the other hand positive returns for stock dividends are reported for short run after the announcement, (such as day 3 and 7) and again bounces back with the negative return during days 8, 10, 11, 14, 16, and 20 indicating a negative attitude during

the post announcement period. The negative returns could be attributed to the unfulfilled expectation of the investor. Again the fact may indicate that the investors lose their faith on the management of the companies' ability after hearing the news of stock dividend. As far as cash dividend is concerned, there is no significant returns exist for the announcement day. However considerable negative return are reported prior to the announcement day (such as days -28, -17, -14 and -8). This is a clear signpost of speculative nature in the market. On the other hand, positive returns are reported on the 2nd and 3rd day following the announcement of cash dividend. During day 8 after the announcement there is an odd negative return and after that the market bounces back with the positive return again during days 10, 11, 18, 23 and 25. Therefore, the investors in general shows more positive attitude towards cash dividends rather than stock dividend. Again this fact may indicate that investor perceive cash dividend as good and positive sign and they gain their faith on the management of the companies.

The average cumulative abnormal return shows significant negative abnormal during days -28 to -22 prior to the announcement. However, after then significant positive return has been found till day -8. Days -7, -6 and -5 reported negative return and after that considerable significant positive return has been experienced. The highest cumulative abnormal return is 45.83% which is nearly 50%! That means if an investor holds the portfolio of securities that pays only cash dividend, on an average will end up a positive return of 45.83%. On the other extreme, considerable significant negative return was reported during the pre-announcement period for stock dividend, even this negative return continues throughout the whole window. This fact also indicates that investor prefer cash dividend than stock dividend.

6.5 Policy Recommendations

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. From the Table: 3.1 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.

From the Table: 3.3 and Figure: 3.2 we can see that only 32.6% of the total number of non-financial companies listed in DSE paid cash dividend and 67.4% were not paid any cash dividend whereas 67.20% of total companies listed in DSE (Table: 3.1) paid dividend in the form of either cash or bonus.

From the Tables: 3.3 and 3.4 it appear 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., 32.6% 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 which is less than 10%. 31% companies were paying 10-20%, 19% companies

were paying 20 to 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 numbers of dividend paid companies are too low i.e., only 32.6% which seems a little bit risky for the investors.

Since, the primary goal of companies' dividend policy is to pay benefits to the shareholders as a whole, so the regulatory body, the management of the companies listed in the DSE and the general investors connecting themselves in the capital market of our country should be very judicious for their respective involvement so as to maximize the interest of the concerned stakeholders and they should not keep themselves intriguingly poised with respect to their pervasion in the capital market of our country. With such a stand, BSEC should take adequate measures to increase the number of firms to declare dividend regularly based on their financial performances for the establishing our capital market into emerging and healthy and also to attract the investors towards the capital marker for secure investment.

Actually dividend policy of corporate firms determines how much of a company's earnings will be paid to shareholders and how much will be retained. But in our capital market evidences show most of the firms declared bonus stock instead of cash dividend which causes dilute of earning per share and net asset value of the firm. Several

explanations for investors preferring stable Taka dividends have been suggested and one of the major one is many investors may use dividends to cover living expenses, which are usually rather stable from year to year. So, management of the companies need to be very expeditions to declare cash dividend to ensure a sound grownup of their financial earmarks which intern contributes in strengthening a solid capital market in our country. Moreover, the interest of the general investors must not be kept far from the above discussion. They should be timely informed with proper information to take a suitable decision with regard to their financial involvement in the capital market of our country.

The study also shows that during the last 15 years non-financial corporate firm's growth trends of cash dividend were more or less sound and smooth. After analyzing the industry wise growth trends we have found a positive relationship between dividend and price. Most interestingly it is evident from the study that general investors can have prior idea about the prices of shares of companies which are declaring either cash or stock dividend. So, the investors could apply the findings of this study which is a regression model based on the last fifteen year's cash dividend and bonus dividend declared by the corporate firms and the market average price of the respective firms.

6.6 Conclusion

This study on "Dividend Policy Practices in Corporate Firms of Bangladesh: Trends and Determinants" was basically designed to identify the trends and growth of dividends and to examine the relationship between growth trends of dividend and market price of the listed companies and the determinants of the dividend policy practices by the corporate firms and finally its impact on security price to appraise overall performance of corporate firms regarding declaration of dividend practices to the general investors. Although the study was based on the secondary data, but some primary data and information were collected for this work. Personal experiences and observations of the researcher were also utilized here.

In this study, we have observed the trend of price movement of industry wise for both cash dividend paying and bonus dividend paying companies. Result from our study is clear in the sense that the companies which are paying cash dividend are able to maximize their share values in a greater extent; on the other hand, companies which are paying bonus dividend are able to maximize their share values in very few extent.

This study also examines to what extent various determinants of dividend payout policy can explain the dividend decisions of DSE listed companies. The findings of the study shows statistically significant and positive relationship among earnings per share, NAVPS, previous year dividend, size of the firm but found statistically insignificant relationship with return on equity on dividend payment. Therefore, the major determinants of dividend policy of non-financial companies in Bangladesh are earnings per share (EPS), NAVPS, previous year dividend and size of the firm.

Dividend policy of a company has great impact on the share price of a company. Event study methodology is employed to measure the security price performance. Dividend announcement is an instrument, which reflects information about the company. In this analysis, we find that the market adjusted average abnormal returns attributed solely to the dividend announcement day which is statistically insignificant for both stock and cash dividends. Thus, the evidence is that there are no differences in the impact of cash or stock dividend as far as the announcement day is concerned.

6.7 Suggestions for Further Research

This study was particularly based on non-financial corporate firms of Bangladesh regarding the dividend policy practices. It is suggested to conduct further research on dividend policy by incorporating the financial sector. It is also suggested to conduct further research on primary data, which will provide management and investors views about the dividend policy and behavior, and security price reaction to the announcement of dividends in an emerging market. It is also suggested to conduct further studies on the different emerging market such as India, Pakistan or Sri Lanka, which will strengthen the empirical findings of this study.

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Appendix A

Appendices to Chapter 3

Appendices A.1-A.9 The regression outputs of price and time, where the logarithmic value of price is used as an explained variable and time as an explanatory variable.

Appendix A.1: Cement Industry

Dependent Variable: LOG(PRICE)				
Method: Least Squares				
Sample: 2000 2014				
Included observations: 15				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
T	0.168206	0.036051	4.665757	0.0004
C	3.096285	0.327782	9.446159	0
R-squared	0.626107	Mean dependent var		4.441937
Adjusted R-squared	0.597346	S.D. dependent var		0.950678
S.E. of regression	0.603253	Akaike info criterion		1.950606
Sum squared residual	4.730885	Schwarz criterion		2.045013
Log likelihood	-12.62954	Hannan-Quinn criter.		1.9496
F-statistic	21.76929	Durbin-Watson stat		0.971701
Prob(F-statistic)	0.000442			

Appendix A.2: Engineering Industry

Dependent Variable: LOG(PRICE)				
Method: Least Squares				
Sample: 2000-2014				
Included observations: 15				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
T	0.058974	0.020911	2.820289	0.0145
C	4.238935	0.190121	22.29597	0
R-squared	0.379594	Mean dependent var		4.710725
Adjusted R-squared	0.331871	S.D. dependent var		0.428069
S.E. of regression	0.3499	Akaike info criterion		0.861228
Sum squared residual	1.591591	Schwarz criterion		0.955635
Log likelihood	-4.45921	Hannan-Quinn criter.		0.860222
F-statistic	7.954028	Durbin-Watson stat		1.126356
Prob(F-statistic)	0.014457			

Appendix A.3: Food Industry

Dependent Variable: LOG(PRICE)				
Method: Least Squares				
Sample: 2000-2014				
Included observations: 15				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
T	0.190223	0.034801	5.466005	0.0001
C	3.297995	0.316416	10.42296	0
R-squared	0.696809	Mean dependent var		4.819781
Adjusted R-squared	0.673486	S.D. dependent var		1.019112
S.E. of regression	0.582335	Akaike info criterion		1.880023
Sum squared residual	4.408478	Schwarz criterion		1.97443
Log likelihood	-12.1002	Hannan-Quinn criter.		1.879017
F-statistic	29.87721	Durbin-Watson stat		0.549648
Prob(F-statistic)	0.000108			

Appendix A.4: Fuel and Power Industry

Dependent Variable: LOG(PRICE)				
Method: Least Squares				
Sample: 2000 2014				
Included observations: 15				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
T	0.04922	0.018243	2.698001	0.0183
C	5.162306	0.16587	31.12259	0
R-squared	0.358949	Mean dependent var		5.556069
Adjusted R-squared	0.309638	S.D. dependent var		0.367404
S.E. of regression	0.305268	Akaike info criterion		0.588315
Sum squared residual	1.211454	Schwarz criterion		0.682721
Log likelihood	-2.41236	Hannan-Quinn criter.		0.587309
F-statistic	7.279212	Durbin-Watson stat		1.277823
Prob(F-statistic)	0.018263			

Appendix A.5: Miscellaneous Industry

Dependent Variable: LOG(PRICE)				
Method: Least Squares				
Sample: 2000 2014				
Included observations: 15				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
T	0.237386	0.021234	11.17954	0
C	2.895647	0.193062	14.99853	0
R-squared	0.905785	Mean dependent var		4.794738
Adjusted R-squared	0.898538	S.D. dependent var		1.115471
S.E. of regression	0.355313	Akaike info criterion		0.891929
Sum squared residual	1.641213	Schwarz criterion		0.986336
Log likelihood	-4.68947	Hannan-Quinn criter.		0.890924
F-statistic	124.9822	Durbin-Watson stat		0.75678
Prob(F-statistic)	0			

Appendix A.6: Pharmaceuticals and Chemicals Industry

Dependent Variable: LOG(PRICE)				
Method: Least Squares				
Sample: 2000 2014				
Included observations: 15				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
T	0.150027	0.017616	8.516633	0
C	4.057707	0.160164	25.33465	0
R-squared	0.848012	Mean dependent var		5.25792
Adjusted R-squared	0.836321	S.D. dependent var		0.728589
S.E. of regression	0.294767	Akaike info criterion		0.518306
Sum squared residual	1.129542	Schwarz criterion		0.612712
Log likelihood	-1.88729	Hannan-Quinn criter		0.5173
F-statistic	72.53304	Durbin-Watson stat		0.992433
Prob(F-statistic)	0.000001			

Appendix A.7: Services and Real Estate Industry

Dependent Variable: LOG(PRICE)				
Method: Least Squares				
Sample: 2000 2014				
Included observations: 15				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
T	0.169251	0.040683	4.160265	0.0011
C	1.933534	0.369893	5.227274	0.0002
R-squared	0.571068	Mean dependent var		3.287546
Adjusted R-squared	0.538073	S.D. dependent var		1.001622
S.E. of regression	0.680754	Akaike info criterion		2.192336
Sum squared residual	6.024546	Schwarz criterion		2.286742
Log likelihood	-14.4425	Hannan-Quinn criter.		2.19133
F-statistic	17.3078	Durbin-Watson stat		0.665634
Prob(F-statistic)	0.00112			

Appendix A.8: Tannery Industry

Dependent Variable: LOG(PRICE)				
Method: Least Squares				
Sample: 2000 2014				
Included observations: 15				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
T	0.182456	0.017244	10.58087	0
C	3.539545	0.156784	22.57591	0
R-squared	0.895962	Mean dependent var		4.999194
Adjusted R-squared	0.88796	S.D. dependent var		0.862042
S.E. of regression	0.288547	Akaike info criterion		0.475645
Sum squared residual	1.082369	Schwarz criterion		0.570052
Log likelihood	-1.567339	Hannan-Quinn criter.		0.47464
F-statistic	111.9549	Durbin-Watson stat		0.907422
Prob(F-statistic)	0			

Appendix A.9: Textile Industry

Dependent Variable: LOG(PRICE)
Method: Least Squares
Sample: 2000 2014
Included observations: 15

Variable	Coefficient	Std. Error	t-Statistic	Prob.
T	0.173277	0.036188	4.788258	0.0004
C	2.769684	0.329025	8.417852	0

R-squared	0.638159	Mean dependent var	4.155901
Adjusted R-squared	0.610325	S.D. dependent var	0.970044
S.E. of regression	0.60554	Akaike info criterion	1.958173
Sum squared residual	4.766819	Schwarz criterion	2.052579
Log likelihood	-12.6863	Hannan-Quinn criter.	1.957167
F-statistic	22.92742	Durbin-Watson stat	2.460562
Prob(F-statistic)	0.000354		

Appendices A.10-A.18 The regression outputs of dividend and time of cash dividend paying company, where the logarithmic value of cash dividend is used as explained variable and time as explanatory variable.

Appendix A.10: Cement Industry

Dependent Variable: LOG(D01)
Method: Least Squares
Sample: 2000 2014
Included observations: 15

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	3.650381	0.158701	23.00165	0
T	0.037941	0.017455	2.173654	0.0488

R-squared	0.266563	Mean dependent var	3.953906
Adjusted R-squared	0.210145	S.D. dependent var	0.328639
S.E. of regression	0.292074	Akaike info criterion	0.499948
Sum squared residual	1.108995	Schwarz criterion	0.594354
Log likelihood	-1.749608	Hannan-Quinn criter.	0.498942
F-statistic	4.72477	Durbin-Watson stat	1.118088
Prob(F-statistic)	0.048799		

Appendix A.11: Engineering Industry

Dependent Variable: LOG(D01)				
Method: Least Squares				
Sample: 2000 2014				
Included observations: 15				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	3.776262	0.196233	19.24377	0
T	-0.01144	0.021583	-0.530064	0.605
R-squared	0.021156	Mean dependent var		3.68474
Adjusted R-squared	-0.05414	S.D. dependent var		0.351752
S.E. of regression	0.361149	Akaike info criterion		0.924511
Sum squared residual	1.695567	Schwarz criterion		1.018918
Log likelihood	-4.933832	Hannan-Quinn criter.		0.923505
F-statistic	0.280968	Durbin-Watson stat		2.45548
Prob(F-statistic)	0.605003			

Appendix A.12: Food Industry

Dependent Variable: LOG(D01)				
Method: Least Squares				
Sample: 2000 2014				
Included observations: 15				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	3.121263	0.252851	12.3443	0
T	0.125122	0.02781	4.499193	0.0006
R-squared	0.608937	Mean dependent var		4.122238
Adjusted R-squared	0.578855	S.D. dependent var		0.717071
S.E. of regression	0.465348	Akaike info criterion		1.431503
Sum squared residual	2.815132	Schwarz criterion		1.525909
Log likelihood	-8.73627	Hannan-Quinn criter.		1.430497
F-statistic	20.24274	Durbin-Watson stat		0.517742
Prob(F-statistic)	0.000598			

Appendix A.13: Fuel and Power Industry

Dependent Variable: LOG(D01)
Method: Least Squares
Sample: 2000 2014
Included observations: 15

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	3.650381	0.158701	23.00165	0
T	0.037941	0.017455	2.173654	0.0488

R-squared	0.266563	Mean dependent var	3.953906
Adjusted R-squared	0.210145	S.D. dependent var	0.328639
S.E. of regression	0.292074	Akaike info criterion	0.499948
Sum squared residual	1.108995	Schwarz criterion	0.594354
Log likelihood	-1.749608	Hannan-Quinn criter.	0.498942
F-statistic	4.72477	Durbin-Watson stat	1.118088
Prob(F-statistic)	0.048799		

Appendix A.14: Pharmaceuticals and Chemicals Industry

Dependent Variable: LOG(D01)
Method: Least Squares
Sample: 2000 2014
Included observations: 15

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	3.276982	0.087857	37.29907	0
T	0.075167	0.009663	7.778881	0

R-squared	0.823156	Mean dependent var	3.878319
Adjusted R-squared	0.809552	S.D. dependent var	0.370512
S.E. of regression	0.161692	Akaike info criterion	0.682675
Sum squared residual	0.339878	Schwarz criterion	0.588268
Log likelihood	7.120063	Hannan-Quinn criter.	0.683681
F-statistic	60.51099	Durbin-Watson stat	1.338247
Prob(F-statistic)	0.000003		

Appendix A.15: Services and Real Estate Industry

Dependent Variable: LOG(D01)
Method: Least Squares
Sample: 2000 2014
Included observations: 15

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	3.276982	0.087857	37.29907	0
T	0.075167	0.009663	7.778881	0

R-squared	0.823156	Mean dependent var	3.878319
Adjusted R-squared	0.809552	S.D. dependent var	0.370512
S.E. of regression	0.161692	Akaike info criterion	-0.68268
Sum squared residual	0.339878	Schwarz criterion	-0.58827
Log likelihood	7.120063	Hannan-Quinn criter.	-0.68368
F-statistic	60.51099	Durbin-Watson stat	1.338247
Prob(F-statistic)	0.000003		

Appendix A.16: Tannery Industry

Dependent Variable: LOG(D01)
Method: Least Squares
Sample: 2000 2014
Included observations: 15

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	3.677164	0.11164	32.9377	0
T	0.078968	0.012279	6.431285	0

R-squared	0.76086	Mean dependent var	4.30891
Adjusted R-squared	0.742464	S.D. dependent var	0.404869
S.E. of regression	0.205463	Akaike info criterion	-0.20354
Sum squared residual	0.548795	Schwarz criterion	-0.10913
Log likelihood	3.526522	Hannan-Quinn criter.	-0.20454
F-statistic	41.36142	Durbin-Watson stat	2.108731
Prob(F-statistic)	0.000022		

Appendix A.17: Textile Industry

Dependent Variable: LOG(D01)				
Method: Least Squares				
Sample: 2000 2014				
Included observations: 15				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	2.562269	0.088445	28.97036	0
T	0.025608	0.009728	2.632484	0.0207
R-squared	0.347716	Mean dependent var		2.767131
Adjusted R-squared	0.29754	S.D. dependent var		0.194211
S.E. of regression	0.162774	Akaike info criterion		-0.66934
Sum squared residual	0.344439	Schwarz criterion		-0.57494
Log likelihood	7.02008	Hannan-Quinn criter.		-0.67035
F-statistic	6.929974	Durbin-Watson stat		1.407886
Prob(F-statistic)	0.020689			

Appendix A.18: Miscellaneous Industry

Dependent Variable: LOG(D01)				
Method: Least Squares				
Sample: 2000 2014				
Included observations: 15				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	2.921065	0.105517	27.68347	0
T	0.117495	0.011605	10.1243	0
R-squared	0.887447	Mean dependent var		3.861027
Adjusted R-squared	0.878789	S.D. dependent var		0.557782
S.E. of regression	0.194193	Akaike info criterion		-0.31636
Sum squared residual	0.490244	Schwarz criterion		-0.22195
Log likelihood	4.372687	Hannan-Quinn criter.		-0.31736
F-statistic	102.5014	Durbin-Watson stat		2.46398
Prob(F-statistic)	0			

Appendices A.19-A.26 The regression outputs of price and time of bonus dividend paying companies, where the "logarithmic value of price" is used as explained variable and "time" as explanatory variable

Appendix A.19: Engineering Industry

Dependent Variable: LOG(P)				
Method: Least Squares				
Sample: 2000 2014				
Included observations: 15				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
T	0.08064	0.024055	3.352322	0.0052
C	3.416378	0.21871	15.62056	0
R-squared	0.463653	Mean dependent var		4.061496
Adjusted R-squared	0.422396	S.D. dependent var		0.529624
S.E. of regression	0.402516	Akaike info criterion		1.141401
Sum squared residual	2.106247	Schwarz criterion		1.235808
Log likelihood	-6.56051	Hannan-Quinn criter.		1.140396
F-statistic	11.23806	Durbin-Watson stat		0.987738
Prob(F-statistic)	0.005197			

Appendix A.20: Food Industry

Dependent Variable: LOG(P)				
Method: Least Squares				
Sample: 2000 2014				
Included observations: 15				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
T	0.165921	0.028853	5.750516	0.0001
C	2.272281	0.262337	8.661675	0
R-squared	0.717811	Mean dependent var		3.59965
Adjusted R-squared	0.696104	S.D. dependent var		0.875814
S.E. of regression	0.482807	Akaike info criterion		1.505168
Sum squared residual	3.030339	Schwarz criterion		1.599575
Log likelihood	-9.288761	Hannan-Quinn criter.		1.504162
F-statistic	33.06844	Durbin-Watson stat		1.426953
Prob(F-statistic)	0.000067			

Appendix A.21: Fuel and Power Industry

Dependent Variable: LOG(P)				
Method: Least Squares				
Sample: 2000 2014				
Included observations: 15				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
T	0.118577	0.042811	2.76975	0.0159
C	2.777796	0.389246	7.136348	0
R-squared	0.371115	Mean dependent var		3.726411
Adjusted R-squared	0.32274	S.D. dependent var		0.870483
S.E. of regression	0.716371	Akaike info criterion		2.29433
Sum squared residual	6.671442	Schwarz criterion		2.388736
Log likelihood	-15.20747	Hannan-Quinn criter.		2.293324
F-statistic	7.671517	Durbin-Watson stat		0.325208
Prob(F-statistic)	0.015925			

Appendix A.22: IT Industry

Dependent Variable: LOG(P)				
Method: Least Squares				
Sample: 2000 2014				
Included observations: 13				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
T	0.042571	0.030495	1.396002	0.1902
C	2.80605	0.242044	11.59312	0
R-squared	0.150502	Mean dependent var		3.104045
Adjusted R-squared	0.073275	S.D. dependent var		0.427351
S.E. of regression	0.411396	Akaike info criterion		1.20212
Sum squared residual	1.861718	Schwarz criterion		1.289035
Log likelihood	-5.813777	Hannan-Quinn criter.		1.184255
F-statistic	1.948823	Durbin-Watson stat		0.800686
Prob(F-statistic)	0.190249			

Appendix A.23: Miscellaneous Industry

Dependent Variable: LOG(P)				
Method: Least Squares				
Sample: 2000 2014				
Included observations: 15				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
T	0.07688	0.02378	3.232959	0.0065
C	3.718382	0.216211	17.19792	0
R-squared	0.445677	Mean dependent var		4.333422
Adjusted R-squared	0.403037	S.D. dependent var		0.515013
S.E. of regression	0.397916	Akaike info criterion		1.118416
Sum squared resid	2.058387	Schwarz criterion		1.212823
Log likelihood	-6.388121	Hannan-Quinn criter.		1.117411
F-statistic	10.45203	Durbin-Watson stat		0.697881
Prob(F-statistic)	0.006539			

Appendix A.24: Pharmaceuticals and Chemicals Industry

Dependent Variable: LOG(P)				
Method: Least Squares				
Sample: 2000 2014				
Included observations: 15				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
T	0.060336	0.025348	2.380317	0.0333
C	3.188243	0.230465	13.83396	0
R-squared	0.303543	Mean dependent var		3.670929
Adjusted R-squared	0.24997	S.D. dependent var		0.489755
S.E. of regression	0.424149	Akaike info criterion		1.246103
Sum squared residual	2.338733	Schwarz criterion		1.34051
Log likelihood	-7.345772	Hannan-Quinn criter.		1.245097
F-statistic	5.665911	Durbin-Watson stat		0.913314
Prob(F-statistic)	0.033288			

Appendix A.25: Textile Industry

Dependent Variable: LOG(P)				
Method: Least Squares				
Sample: 2000 2014				
Included observations: 15				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
T	0.151412	0.022686	6.674278	0
C	1.872769	0.206262	9.079548	0
R-squared	0.774094	Mean dependent var		3.084061
Adjusted R-squared	0.756716	S.D. dependent var		0.769622
S.E. of regression	0.379607	Akaike info criterion		1.024203
Sum squared residual	1.873315	Schwarz criterion		1.11861
Log likelihood	-5.681523	Hannan-Quinn criter.		1.023197
F-statistic	44.54598	Durbin-Watson stat		0.865964
Prob(F-statistic)	0.000015			

Appendix A.26: Travel Industry

Dependent Variable: LOG(P)				
Method: Least Squares				
Sample: 2000 2014				
Included observations: 14				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
T	-0.305178	0.116579	-2.617768	0.1202
C	3.486325	0.319266	10.91982	0.0083
R-squared	0.77408	Mean dependent var		2.723381
Adjusted R-squared	0.661121	S.D. dependent var		0.4478
S.E. of regression	0.260679	Akaike info criterion		0.455802
Sum squared residual	0.135907	Schwarz criterion		0.148949
Log likelihood	1.088396	Hannan-Quinn criter.		-0.21756
F-statistic	6.852707	Durbin-Watson stat		2.776184
Prob(F-statistic)	0.120182			

Appendices A.27-A.34 The regression outputs of bonus dividend and time of bonus dividend paying companies, where the logarithmic value of bonus dividend is used as explained variable and time as explanatory variable.

Appendix A.27: Engineering Industry

Dependent Variable: LOG(D01)				
Method: Least Squares				
Sample: 2000 2014				
Included observations: 11				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
T	-0.073121	0.021553	-3.39263	0.008
C	3.641219	0.22152	16.43742	0
R-squared	0.561189	Mean dependent var		2.949891
Adjusted R-squared	0.512432	S.D. dependent var		0.412652
S.E. of regression	0.288139	Akaike info criterion		0.512217
Sum squared residual	0.747216	Schwarz criterion		0.584562
Log likelihood	-0.817194	Hannan-Quinn criter.		0.466614
F-statistic	11.50996	Durbin-Watson stat		0.426516
Prob(F-statistic)	0.007966			

Appendix A.28: Food Industry

Dependent Variable: LOG(D01)				
Method: Least Squares				
Sample: 2008 2014				
Included observations: 7				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
T	0.162472	0.030572	5.314368	0.0032
C	2.257193	0.136723	16.50924	0
R-squared	0.84959	Mean dependent var		2.907081
Adjusted R-squared	0.819508	S.D. dependent var		0.380782
S.E. of regression	0.161773	Akaike info criterion		-0.57029
Sum squared residual	0.130852	Schwarz criterion		-0.58575
Log likelihood	3.996016	Hannan-Quinn criter.		-0.7613
F-statistic	28.2425	Durbin-Watson stat		1.958861
Prob(F-statistic)	0.003155			

Appendix A.29: Fuel and Power Industry

Dependent Variable: LOG(D01)
Method: Least Squares
Sample: 2005 2014
Included observations: 10

Variable	Coefficient	Std. Error	t-Statistic	Prob.
T	-0.082511	0.045888	-1.79811	0.1099
C	3.107884	0.284727	10.9153	0
R-squared	0.287825	Mean dependent var		2.654071
Adjusted R-squared	0.198803	S.D. dependent var		0.465646
S.E. of regression	0.416798	Akaike info criterion		1.264427
Sum squared residual	1.389765	Schwarz criterion		1.324944
Log likelihood	-4.322134	Hannan-Quinn criter.		1.19804
F-statistic	3.233191	Durbin-Watson stat		0.810916
Prob(F-statistic)	0.10987			

Appendix A.30: IT Industry

Dependent Variable: LOG(D01)
Method: Least Squares
Sample: 2004 2014
Included observations: 11

Variable	Coefficient	Std. Error	t-Statistic	Prob.
T	-0.036689	0.02093	-1.752938	0.1135
C	2.555489	0.141952	18.00244	0
R-squared	0.254522	Mean dependent var		2.335357
Adjusted R-squared	0.171691	S.D. dependent var		0.241193
S.E. of regression	0.219513	Akaike info criterion		-0.03185
Sum squared residual	0.433673	Schwarz criterion		0.040499
Log likelihood	2.175153	Hannan-Quinn criter.		-0.07745
F-statistic	3.072791	Durbin-Watson stat		1.425778
Prob(F-statistic)	0.113518			

Appendix A.31: Miscellaneous Industry

Dependent Variable: LOG(D01)				
Method: Least Squares				
Sample: 2003 2014				
Included observations: 12				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
T	-0.02995	0.047822	-0.62629	0.5452
C	3.137464	0.351959	8.914285	0
R-squared	0.037743	Mean dependent var		2.942786
Adjusted R-squared	-0.05848	S.D. dependent var		0.555843
S.E. of regression	0.571866	Akaike info criterion		1.871187
Sum squared residual	3.270305	Schwarz criterion		1.952005
Log likelihood	-9.22712	Hannan-Quinn criter.		1.841265
F-statistic	0.392239	Durbin-Watson stat		1.037437
Prob(F-statistic)	0.545155			

Appendix A.32: Pharmaceuticals and Chemicals Industry

Dependent Variable: LOG(D01)				
Method: Least Squares				
Sample: 2001 2014				
Included observations: 14				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
T	0.028876	0.027137	1.064054	0.3082
C	2.40044	0.231067	10.38848	0
R-squared	0.086216	Mean dependent var		2.617008
Adjusted R-squared	0.010068	S.D. dependent var		0.411394
S.E. of regression	0.409318	Akaike info criterion		1.182913
Sum squared residual	2.01049	Schwarz criterion		1.274207
Log likelihood	-6.280389	Hannan-Quinn criter.		1.174462
F-statistic	1.13221	Durbin-Watson stat		1.796005
Prob(F-statistic)	0.308248			

Appendix A.33: Textile Industry

Dependent Variable: LOG(D01)				
Method: Least Squares				
Sample: 2000 2014				
Included observations: 12				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
T	-0.029134	0.013476	-2.161921	0.0559
C	3.044091	0.135377	22.48608	0
R-squared	0.318518	Mean dependent var		2.7746
Adjusted R-squared	0.25037	S.D. dependent var		0.211272
S.E. of regression	0.182922	Akaike info criterion		-0.4085
Sum squared residual	0.334605	Schwarz criterion		-0.32768
Log likelihood	4.451008	Hannan-Quinn criter.		-0.43842
F-statistic	4.673901	Durbin-Watson stat		0.45778
Prob(F-statistic)	0.055928			

Appendix A.34: Travel Industry

Dependent Variable: LOG(D01)				
Method: Least Squares				
Sample: 2000 2014				
Included observations: 9				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
T	-0.012896	0.04785	-0.269509	0.7953
C	2.59261	0.525625	4.932433	0.0017
R-squared	0.01027	Mean dependent var		2.460784
Adjusted R-squared	-0.13112	S.D. dependent var		0.542803
S.E. of regression	0.577294	Akaike info criterion		1.932198
Sum squared residual	2.332875	Schwarz criterion		1.976026
Log likelihood	-6.694893	Hannan-Quinn criter.		1.837618
F-statistic	0.072635	Durbin-Watson stat		0.812076
Prob(F-statistic)	0.79531			

Appendix A.35: The Regression Outputs of Cash Dividend and Price of Cash Dividend Paying Companies

Dependent Variable: PRICE Method: Panel Least Squares Sample: 2000 2014 Periods included: 15 Cross-sections included: 54 Total panel (unbalanced) observations: 670				
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 criter.		13.86765
F-statistic	215.2292	Durbin-Watson stat		1.006917
Prob(F-statistic)	0			

Appendix A.36: Normality Test the Regression Model 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

Appendix A.37: PP Fisher Unit Root Test on CASH DIVIDEND of Cash Dividend Paying Companies.

Null Hypothesis: Unit root (individual unit root process)
Series: CASH DIVIDEND
Sample: 2000 2014
Exogenous variables: Individual effects
Newey-West automatic bandwidth selection and Bartlett kernel
Total number of observations: 560
Cross-sections included: 53 (1 dropped)

Method	Statistic	Prob.**
PP - Fisher Chi-square	437.563	0
PP - Choi Z-stat	-12.9254	0

** Probabilities for Fisher tests are computed using an asymptotic Chi-square distribution. All other tests assume asymptotic normality.

Intermediate Phillips-Perron test results DIVIDEND

Cross section	Prob.	Bandwidth	Obs
1	0.012	2	10
2		Dropped from Test	
3	0.0564	1	7
4	0.0008	1	8
5	0.1859	4	5
6	0.0545	2	3
7	0.5212	1	10
8	0	3	10
9	0.0248	0	3
10	0.375	3	8
11	0.8294	0	11
12	0.0131	1	10
13	0.9853	3	4
14	0.5568	4	5
15	0.1682	9	10
16	0.2331	0	4
17	0.3574	3	5
18	0.5337	0	10
19	0	4	10
20	0.3575	0	4
21	0.3002	1	9
22	0.0003	1	10
23	0.174	1	8
24	0.0957	6	7

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25	0.2098	0	10
26	0	1	10
27	0.3784	1	9
28	0.0915	1	10
29	0.8524	0	9
30	0.0178	1	13
31	0.0001	9	12
32	0.1733	2	12
33	0.0011	1	12
34	0.0044	2	14
35	0.0003	10	14
36	0.0502	1	14
37	0.0144	1	14
38	0.0034	5	14
39	0.0146	3	14
40	0.0001	3	12
41	0.0035	4	14
42	0.0001	13	14
43	0.1037	2	14
44	0.0048	2	14
45	0.006	1	14
46	0.0014	7	14
47	0.0197	1	14
48	0.0158	0	14
49	0.0005	7	14
50	0.0254	4	14
51	0.0165	0	14
52	0.0045	1	14
53	0.1904	4	14
54	0.146	1	14

Appendix A.38: PP Fisher Unit Root Test on Price of Cash Dividend Paying Companies.

Null Hypothesis: Unit root (individual unit root process)
Series: PRICE
Sample: 2000 2014
Exogenous variables: Individual effects
Newey-West automatic bandwidth selection and Bartlett kernel
Total number of observations: 529
Cross-sections included: 50 (4 dropped)

Method	Statistic	Prob.**
PP - Fisher Chi-square	435.921	0
PP - Choi Z-stat	-13.4732	0

** Probabilities for Fisher tests are computed using an asymptotic Chi-square distribution. All other tests assume asymptotic normality.

Intermediate Phillips-Perron test results PRICE

Cross section	Prob.	Bandwidth	Obs
1	0.0088	1	9
2		Dropped from Test	
3	0.1747	1	6
4	0	1	8
5	0.2345	4	5
6		Dropped from Test	
7	0.5679	1	8
8	0.0001	2	9
9		Dropped from Test	
10	0.0223	5	6
11	0.5736	0	11
12	0.0296	1	7
13		Dropped from Test	
14	0.4531	4	5
15	0	1	12
16	0.5225	3	4
17	0.0251	1	3
18	0.1754	4	10
19	0	0	10
20	0.4601	1	4
21	0.3879	3	9
22	0.0052	0	10
23	0.2897	3	10
24	0	5	7
25	0.037	1	10
26	0.0002	0	12

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27	0.0023	2	6
28	0.3598	8	10
29	0.0148	0	11
30	0.0425	1	13
31	0.0348	1	10
32	0.364	2	10
33	0.7703	0	12
34	0.0175	3	12
35	0.0012	11	12
36	0.0001	0	14
37	0	13	14
38	0.0306	3	12
39	0.1923	4	12
40	0.0035	0	14
41	0.0095	1	14
42	0.0091	3	12
43	0.1555	1	14
44	0.0089	2	14
45	0.0125	6	14
46	0.288	6	12
47	0.0149	1	14
48	0.1048	2	14
49	0.1066	4	14
50	0.0699	4	14
51	0.0033	0	14
52	0.0179	2	14
53	0	13	14
54	0.0292	1	14

Appendix A.39: The Regression Outputs of Bonus Dividend and Price of Bonus Dividend Paying Companies.

Dependent Variable: LOG(PRICE)				
Method: Panel Least Squares				
Sample: 2000 2014				
Periods included: 15				
Cross-sections included: 38				
Total panel (unbalanced) observations: 231				
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 criter.		2.115184
F-statistic	116.5259	Durbin-Watson stat		0.827949
Prob(F-statistic)	0			

Appendix A.40: Normality Test the Regression Model 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

Appendix A.41: PP Fisher Unit Root Test on Bonus DIVIDEND of Bonus Dividend Paying Companies.

Null Hypothesis: Unit root (individual unit root process)
Series: Bonus DIVIDEND
Sample: 2000 2014
Exogenous variables: Individual effects
Newey-West automatic bandwidth selection and Bartlett kernel
Total number of observations: 175
Cross-sections included: 33 (5 dropped)

Method	Statistic	Prob.**
PP - Fisher Chi-square	130.424	0
PP - Choi Z-stat	-3.34155	0.0004

** Probabilities for Fisher tests are computed using an asymptotic Chi-square distribution. All other tests assume asymptotic normality.

Intermediate Phillips-Perron test results DIVIDEND

Cross section	Prob.	Bandwidth	Obs
1		Dropped from Test	
2	0.3036	0	6
3	0.6128	4	6
4	0.4853	0	4
5	0.0007	0	3
6	0.654	3	4
7	0.3558	3	4
8	0.1231	4	5
9	0.7623	1	4
10	0.4996	0	5
11	0.1088	2	3
12	0.7792	0	4
13	0.5943	1	9
14	0.5849	6	7
15	0.2091	1	5
16	0.4188	2	4
17	0.002	9	10
18	0.8232	2	3
19	0.5597	0	10
20		Dropped from Test	
21		Dropped from Test	
22	0.9792	2	5
23	0.0622	3	4
24	0.4703	0	10

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25	0.0006	7	8
26	0.1939	2	3
27	0.1408	2	3
28	0.7417	3	4
29		Dropped from Test	
30	0.06	5	8
31	0.0181	4	5
32	0.6281	0	4
33	0.77	2	6
34	0.8264	0	6
35	0	3	4
36		Dropped from Test	
37	0.034	2	5
38	0.1777	1	4

Appendix A.42: PP Fisher Unit Root Test on Price of Bonus Dividend Paying Companies.

Null Hypothesis: Unit root (individual unit root process)
Series: PRICE
Sample: 2000 2014
Exogenous variables: Individual effects
Newey-West automatic bandwidth selection and Bartlett kernel
Total number of observations: 387
Cross-sections included: 38

Method	Statistic	Prob.**
PP - Fisher Chi-square	120.801	0.0008
PP - Choi Z-stat	-2.33366	0.0098

** Probabilities for Fisher tests are computed using an asymptotic Chi-square distribution. All other tests assume asymptotic normality.

Intermediate Phillips-Perron test results PRICE

Cross section	Prob.	Bandwidth	Obs
1	0.5479	0	14
2	0.519	0	14
3	0.501	2	14
4	0.3258	0	6
5	0.2627	4	14
6	0.5329	1	14
7	0.9668	2	14
8	0.5413	1	12
9	0.3419	1	12

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10	0.0153	0	14
11	0.5523	1	14
12	0.0484	2	3
13	0.4066	1	8
14	0.435	1	10
15	0.4801	0	11
16	0.4448	1	8
17	0.2459	1	11
18	0.4682	2	12
19	0.3161	1	14
20	0.5231	1	14
21	0.5448	1	14
22	0.2911	2	14
23	0.2477	0	3
24	0.1824	2	14
25	0.3198	2	14
26	0.4102	1	13
27	0.7891	3	14
28	0.5839	1	14
29	0.2879	2	3
30	0.9591	3	5
31	0	2	3
32	0.0068	2	3
33	0.7219	2	5
34	0.6798	3	12
35	0.7469	4	14
36	0.0004	2	3
37	0.9422	2	3
38	0.0061	2	3

Appendix B

Appendices to Chapter 4

Appendices B.1- B.54 represent the data on dependent and independent variable used in propose model and linters model on determinants of dividend policy. All data collected form DSE website and annual report of sampling company.

Appendix B.1: CONFIDCEM

YEAR	CASH_DIVIDEND	DPS(BDT)	EPS(BDT)	NAVPS(BDT)	ROE	SIZE(BDT)IN MN
2000	30%	3	83.61	363.62	23%	247.04
2001	25%	2.5	84.28	248.51	34%	247.04
2002	20%	2	11.64	355.25	3%	247.04
2003	5%	0.5	9.01	337.98	3%	247.04
2004	5%	0.5	-12.65	319.83	-4%	247.04
2005	5%	0.5	10.95	326.28	3%	247.04
2006	15%	1.5	21.65	332.93	7%	247.04
2007	15%	1.5	27.73	345.66	8%	247.04
2008	0%	0	-14.98	330.67	-5%	271.74
2009	10%	1	6.86	89.48	8%	326.09
2010	25%	2.5	7.39	79.85	9%	375
2011	20%	2	5.29	67.07	8%	450
2012	20%	2	6.23	56.74	11%	450
2013	28%	2.75	8.09	65.11	12%	450
2014	25%	2.5	5.32	64.41	8%	450

Appendix B.2: HEIDELBCEM

YEAR	CASH_DIVIDEND	DPS(BDT)	EPS(BDT)	NAVPS(BDT)	ROE	SIZE(BDT)IN MN
2000	70%	7	172.84	346.39	50%	330.51
2001	30%	3	81.02	446.49	18%	330.51
2002	5%	0.5	18.05	335.79	5%	363.57
2003	0%	0	-15.23	366.4	-4%	418.1
2004	0%	0	-2.86	307.78	-1%	489.18
2005	8%	0.8	31	425.45	7%	538.1
2006	16%	1.6	97	436.37	22%	565
2007	25%	2.5	110	505.6	22%	565
2008	33%	3.3	104.86	585.46	18%	565
2009	38%	3.8	150.59	703.05	21%	565
2010	43%	4.3	17.675	84.18	21%	565
2011	45%	4.5	13.27	93.13	14%	565
2012	50%	5	22.85	111.49	20%	565
2013	380%	38	26.09	132.58	20%	565
2014	380%	38	20.88	115.46	18%	565

Appendix B.3: MEGHNACEM

YEAR	CASH_DIVIDEND	DPS(BDT)	EPS(BDT)	NAVPS(BDT)	ROE	SIZE(BDT)IN MN
2000	20%	2	70.2	209.24	34%	225
2001	25%	2.5	84.28	248.51	34%	225
2002	25%	2.5	38.47	261.9	15%	225
2003	25%	2.5	11.57	273.44	4%	225
2004	25%	2.5	15.25	277.17	6%	225
2005	25%	2.5	33.38	298.15	11%	225
2006	25%	2.5	46.71	320.42	15%	225
2007	30%	3	65.86	275.2	24%	225
2008	15%	1.5	10.28	255.49	4%	225
2009	35%	3.5	5.87	29.92	20%	225
2010	25%	2.5	2.23	29.84	7%	225
2011	25%	2.5	2.96	30.03	10%	225
2012	25%	2.5	6.28	33.81	19%	225
2013	15%	1.5	5.23	36.54	14%	225
2014	15%	1.5	4.48	36.1	12%	225

Appendix B.4: RAKCERAMIC

YEAR	CASH_DIVIDEND	DPS(BDT)	EPS(BDT)	NAVPS(BDT)	ROE	SIZE(BDT)IN MN
2000						
2001						
2002						
2003						
2004						
2005			0.46	18.48	2%	2300.73
2006			0.96	21.23	5%	2300.73
2007			1.63	28.56	6%	2300.73
2008			1.54	11.6	13%	2300.73
2009			1.75	13.6	13%	2300.73
2010	15%	1.5	2.81	21.34	13%	2530.8
2011	15%	1.5	2.99	21.03	14%	2783.88
2012	15%	1.5	2.18	19.94	11%	3062.27
2013	15%	1.5	2.23	18.99	12%	3368.5
2014	25%	2.5	0.12	18.25	1%	3368.5

Appendix B.5: ATLASBANG

YEAR	CASH_DIVIDEND	DPS(BDT)	EPS(BDT)	NAVPS(BDT)	ROE	SIZE(BDT)IN MN
2000	100%	10	8.76	84.89	10%	26.93
2001	125%	12.5	21.01	92.5	23%	26.93
2002	75%	7.5	45.18	59.48	76%	40.4
2003	110%	11	39.94	88.11	45%	53.73
2004	120%	12	25.44	114.29	22%	71.46
2005	100%	10	17.33	95.61	18%	107.19
2006	85%	8.5	11.97	69.1	17%	142.56
2007	125%	12.5	12.63	57.4	22%	178.2
2008	100%	10	9.69	43.62	22%	178.2
2009	75%	7.5	22.39	55.93	40%	178.2
2010	100%	10	21.58	57.85	37%	237
2011	75%	7.5	16.77	52.59	32%	237
2012	75%	7.5	11.98	205.96	6%	237
2013	50%	5	9.14	207.48	4%	237
2014	35%	3.5	5.06	207.42	2%	237

Appendix B.6: ECABLES

YEAR	CASH_DIVIDEND	DPS(BDT)	EPS(BDT)	NAVPS(BDT)	ROE	SIZE(BDT)IN MN
2000	10%	1	8.15	173.16	5%	240
2001	14%	1.4	16.87	181.56	9%	240
2002	10%	1	18.3	194.02	9%	240
2003	10%	1	11.1	141.59	8%	240
2004	0%	0	11.48	153.06	8%	240
2005	10%	1	10.29	152.11	7%	240
2006	10%	1	10.27	153.63	7%	240
2007	10%	1	12.25	155.88	8%	240
2008	10%	1	15.09	170.98	9%	240
2009	5%	0.5	0.78	161.76	0%	240
2010	10%	1	0.68	15.36	4%	240
2011	10%	1	2.47	16.83	15%	240
2012	10%	1	2.04	18.87	11%	240
2013	10%	1	6.1	23.97	25%	240
2014	10%	1	4.95	27.91	18%	240

Appendix B.7: MONNOSTAF

YEAR	CASH_DIVIDEND	DPS(BDT)	EPS(BDT)	NAVPS(BDT)	ROE	SIZE(BDT)IN MN
2000	25%	2.5	27.73	224.76	12%	4
2001	20%	2	22.02	224.24	10%	4
2002	25%	2.5	27.03	224.74	12%	4
2003	20%	2	25.2	230.05	11%	4
2004	25%	2.5	19.68	225.03	9%	4
2005	30%	3	48.35	238.29	20%	4
2006	25%	2.5	55.05	263.62	21%	4
2007	20%	2	42.11	286.18	15%	4
2008	10%	1	54.35	335	16%	4
2009	10%	1	38.82	363.82	11%	4
2010	15%	1.5	3.91	39.29	10%	4
2011	10%	1	2.68	40.47	7%	4
2012	10%	1	5.31	44.78	12%	4
2013	10%	1	4.15	47.93	9%	4
2014	10%	1	2.53	49.46	5%	4

Appendix B.8: RANFOUNDRY

YEAR	CASH_DIVIDEND	DPS(BDT)	EPS(BDT)	NAVPS(BDT)	ROE	SIZE(BDT)IN MN
2000	16%	1.6	1.87	12.34	15%	100
2001	16%	1.6	1.91	12.65	15%	100
2002	16%	1.6	1.93	12.97	15%	100
2003	15%	1.5	1.95	14.92	13%	100
2004	15%	1.5	1.86	15.13	12%	100
2005	16%	1.6	1.89	15.51	12%	100
2006	16%	1.6	1.99	15.9	13%	100
2007	16%	1.6	2.05	16.35	13%	100
2008	18%	1.8	2.07	16.82	12%	100
2009	21%	2.05	2.19	17.21	13%	100
2010	21%	2.1	2.23	17.39	13%	100
2011	21%	2.1	2.6	17.88	15%	100
2012	21%	2.1	2.84	18.62	15%	100
2013	22%	2.2	2.84	19	15%	100
2014	22%	2.2	3.2	20	16%	100

Appendix B.9: RENWICKJA

YEAR	CASH_DIVIDEND	DPS(BDT)	EPS(BDT)	NAVPS(BDT)	ROE	SIZE(BDT)IN MN
2000			-29.46	-102.36	29%	20
2001						20
2002			-19.8	-289.12	7%	20
2003			-10.24	-300.68	3%	20
2004	5%	0.5	6.08	-300.38	-2%	20
2005	6%	0.6	7.08	-300.65	-2%	20
2006			0.05	-305.17	0%	20
2007	6%	0.6	12.89	-323.09	-4%	20
2008	10%	1	30.79	-297.87	-10%	20
2009	10%	1	35.57	-273.62	-13%	20
2010	15%	1.5	54.12	-253.19	-21%	20
2011	20%	2	5.5	-35.21	-16%	20
2012	22%	2.2	5.62	-32.67	-17%	20
2013	22%	2.2	5.77	-31.26	-18%	20
2014	22%	2.2	5.58	-31.51	-18%	20

Appendix B.10: SALAMCRST

YEAR	CASH_DIVIDEND	DPS(BDT)	EPS(BDT)	NAVPS(BDT)	ROE	SIZE(BDT)IN MN
2000						
2001						
2002						
2003						
2004			15.35	275.35	6%	894.27
2005			24.58	299.94	8%	894.27
2006	15%	1.5	10.86	106	10%	894.27
2007	15%	1.5	13.42	103.98	13%	894.27
2008	17%	1.7	22.86	109.85	21%	894.27
2009	15%	1.5	21.85	116.69	19%	894.27
2010	5%	0.5	2.08	16.01	13%	983.7
2011	15%	1.5	2.75	16.59	17%	983.7
2012	15%	1.5	3.31	20	17%	983.7
2013	13%	1.3	1.94	20.44	9%	983.7
2014	15%	1.5	0.98	20.12	5%	983.7

Appendix B.11: SINGERBD

YEAR	CASH_DIVIDEND	DPS(BDT)	EPS(BDT)	NAVPS(BDT)	ROE	SIZE(BDT)IN MN
2000	80%	8	77.27	168.01	46%	166.2
2001	75%	7.5	70.22	163.24	43%	166.2
2002	85%	8.5	85.35	160.58	53%	166.2
2003	75%	7.5	77.78	151.75	51%	166.2
2004	80%	8	47.75	112.61	42%	166.2
2005	30%	3	29.13	127.97	23%	166.2
2006	35%	3.5	70.18	198.15	35%	166.2
2007			61.26	259.4	24%	224.37
2008	30%	3	68.22	278.81	24%	224.37
2009	90%	9	114.36	481.68	24%	224.37
2010	60%	6	15.28	139.96	11%	392.65
2011	30%	3	10.18	55.99	18%	392.65
2012	125%	12.5	12.49	64.67	19%	490.82
2013	100%	10	7.79	53.64	15%	613.52
2014	195%	19.5	5.91	24.89	24%	766.9

Appendix B.12: AMCL (PRAN)

YEAR	CASH_DIVIDEND	DPS(BDT)	EPS(BDT)	NAVPS(BDT)	ROE	SIZE(BDT)IN MN
2000	20%	2	42.2	258.39	16%	80
2001	20%	2	52.48	284.6	18%	80
2002	25%	2.5	54.26	312.82	17%	80
2003	24%	2.4	55.48	343.39	16%	80
2004	24%	2.4	50.39	362.27	14%	80
2005	26%	2.6	50.96	386.55	13%	80
2006	26%	2.6	36.18	396.11	9%	80
2007	26%	2.6	36.66	383.91	10%	80
2008	28%	2.8	44.94	428.39	10%	80
2009	29%	2.9	49.96	449.96	11%	80
2010	30%	3	54.49	475.1	11%	80
2011	31%	3.1	5.69	50.17	11%	80
2012	31%	3.1	6.53	53.37	12%	80
2013	31%	3.1	6.85	57.14	12%	80
2014	32%	3.2	6.93	60.88	11%	80

Appendix B.13: BATBC

YEAR	CASH_DIVIDEND	DPS(BDT)	EPS(BDT)	NAVPS(BDT)	ROE	SIZE(BDT)IN MN
2000	90%	9	5.92	40.87	14%	600.00
2001	120%	12	14.57	33.57	43%	600.00
2002	110%	11	16.52	39.09	42%	600.00
2003	100%	10	14.52	38.48	38%	600.00
2004	100%	10	11.22	38.7	29%	600.00
2005	30%	3	3.88	39.38	10%	600.00
2006	30%	3	6.03	42.4	14%	600.00
2007	70%	7	13.32	54.75	24%	600.00
2008	240%	24	27.81	75.56	37%	600.00
2009	300%	30	34.48	86.04	40%	600.00
2010	430%	43	47.98	104.01	46%	600.00
2011	420%	42	42.51	98.52	43%	600.00
2012	500%	50	65.69	117.22	56%	600.00
2013	620%	62	81.14	148.36	55%	600.00
2014	550%	55	104.7	191.06	55%	600.00

Appendix B.14: NTC

YEAR	CASH_DIVIDEND	DPS(BDT)	EPS(BDT)	NAVPS(BDT)	ROE	SIZE(BDT)IN MN
2000	15%	1.5	-39.5	154.27	-26%	66
2001	15%	1.5	1.29	146.65	1%	66
2002	15%	1.5	19.24	327.81	6%	66
2003	18%	1.8	35.41	186.43	19%	66
2004	18%	1.8	16.28	172.67	9%	66
2005	20%	2	41.23	352.57	12%	66
2006	20%	2	42.67	365.39	12%	66
2007	15%	1.5	40.74	314.27	13%	66
2008	20%	2	110.96	385.88	29%	66
2009	20%	2	156.78	502.87	31%	66
2010	25%	2.5	26.59	74.02	36%	66
2011	20%	2	8.1	83.5	10%	66
2012	30%	3	29.88	110.05	27%	66
2013	30%	3	24.46	125.5	19%	66
2014	20%	2	6.38	126.2	5%	66

Appendix B.15: OLYMPIC

YEAR	CASH_DIVIDEND	DPS(BDT)	EPS(BDT)	NAVPS(BDT)	ROE	SIZE(BDT)IN MN
2000			-2.52	200.75	-1%	193.48
2001			-10.27	186.78	-5%	193.48
2002	10%	1	-10.88	174.88	-6%	193.48
2003	10%	1	6.73	175.02	4%	193.48
2004	10%	1	7.58	179.63	4%	193.48
2005	11%	1.1	7.34	203.44	4%	193.48
2006	13%	1.3	13.96	175.31	8%	193.48
2007	11%	1.1	16.83	163.8	10%	193.48
2008	16%	1.6	23.41	177.38	13%	193.48
2009	10%	1	66.57	183.15	36%	232.18
2010	10%	1	8.23	22.66	36%	348.27
2011	10%	1	7.36	21.35	34%	522.4
2012	10%	1	8.91	22.37	40%	783.6
2013	10%	1	7.85	22.1	36%	1175.41
2014	20%	2	7.39	21.46	34%	1586.8

Appendix B.16: DESCO

YEAR	CASH_DIVIDEND	DPS(BDT)	EPS(BDT)	NAVPS(BDT)	ROE	SIZE(BDT)IN MN
2000						1271.2
2001			-6.28	78.74	-8%	1271.2
2002			-4.23	74.75	-6%	1271.2
2003			0.7	75.41	1%	1271.2
2004			26.59	100.52	26%	1271.2
2005			42.51	141.01	30%	1271.2
2006	20%	2	45.52	138.44	33%	1271.2
2007	25%	2.5	55.94	273.06	20%	1271.2
2008	25%	2.5	78.73			1334.76
2009	25%	2.5	120.42	548.46	22%	1601.71
2010	15%	1.5	11.17	54.69	20%	2082.23
2011	10%	1	7.1	47.64	15%	2602.78
2012	10%	1	3.22	40.55	8%	2993.2
2013	10%	1	2.69	35.97	7%	3442.18
2014	5%	0.5	1.94	32.82	6%	3786.4

Appendix B.17: EASTRNLUB

YEAR	CASH_DIVIDEND	DPS(BDT)	EPS(BDT)	NAVPS(BDT)	ROE	SIZE(BDT)IN MN
2000	25%	2.5	5.73	48.18	12%	10
2001	20%	2	3.61	49.79	7%	10
2002	25%	2.5	3.67	50.96	7%	10
2003	25%	2.5	2.96	51.41	6%	10
2004	25%	2.5	3.1	51.76	6%	10
2005	15%	1.5	1.57	51.83	3%	10
2006	15%	1.5	1.5	51.84	3%	10
2007	15%	1.5	1.53	51.87	3%	10
2008	25%	2.5	4.18	56.04	7%	10
2009	25%	2.5	4.91	55.95	9%	10
2010	30%	3	5	57.96	9%	10
2011	30%	3	7.41	62.36	12%	10
2012	30%	3	6.32	65.68	10%	10
2013	30%	3	5.33	71.01	8%	10
2014	30%	3	4.6	73.03	6%	10

Appendix B.18: JAMUNAOIL

YEAR	CASH_DIVIDEND	DPS(BDT)	EPS(BDT)	NAVPS(BDT)	ROE	SIZE(BDT)IN MN
2000						
2001						
2002			2.03	13.72	15%	449.98
2003			1.09	14.81	7%	449.98
2004			-0.96	13.11	-7%	449.98
2005			0.06	13.17	0%	449.98
2006						449.98
2007	15%	1.5				449.98
2008	40%	4	11.36	32.91	35%	449.98
2009	40%	4	9.32	34.23	27%	449.98
2010	30%	3	12.53	41.76	30%	539.98
2011	30%	3	18.79	49.25	38%	701.97
2012	45%	4.5	29.62	69.81	42%	912.56
2013	90%	9	21.81	72.05	30%	1003.82
2014	90%	9	23.08	118.53	19%	1104.2

Appendix B.19: LINDEBD

YEAR	CASH_DIVIDEND	DPS(BDT)	EPS(BDT)	NAVPS(BDT)	ROE	SIZE(BDT)IN MN
2000	40%	4	13.36	63.04	21%	152.2
2001	44%	4.4	13.28	71.97	18%	152.2
2002	100%	10	13.74	68.84	20%	152.2
2003	200%	20	13.58	62.37	22%	152.2
2004	50%	5	9.41	66.28	14%	152.2
2005	50%	5	10.25	71.58	14%	152.2
2006	70%	7	16.18	75.12	22%	152.2
2007	70%	7	17.32	91.62	19%	152.2
2008	177%	17.7	23.61	99.28	24%	152.2
2009	177%	17.7	40.08	120.85	33%	152.2
2010	350%	35	43.9	131.16	33%	152.2
2011	350%	35	44.78	142.08	32%	152.2
2012	310%	31	31.7	140.85	23%	152.2
2013	310%	31	48.55	161.57	30%	152.2
2014	310%	31	40.74	171.31	24%	152.2

Appendix B.20: MJLBD

YEAR	CASH_DIVIDEND	DPS(BDT)	EPS(BDT)	NAVPS(BDT)	ROE	SIZE(BDT)IN MN
2000						
2001						
2002						
2003						
2004						
2005			1.47	11.4	13%	1803.17
2006			6.06	16.46	37%	1803.17
2007			7.39	25.04	30%	1803.17
2008			11.48	36.46	31%	1803.17
2009			2.45	10.86	23%	1803.17
2010	15%	1.5	3.62	23.17	16%	2073.65
2011	15%	1.5	3.07	33.13	9%	2384.7
2012	25%	2.5	2.73	30.23	9%	2384.7
2013	25%	2.5	2.93	32.63	9%	2384.7
2014	15%	1.5	4.4	35.09	13%	2742.4

Appendix B.21: MPETROLEUM

YEAR	CASH_DIVIDEND	DPS(BDT)	EPS(BDT)	NAVPS(BDT)	ROE	SIZE(BDT)IN MN
2000						
2001						
2002			1.82	9.83	19%	400.01
2003			1.55	10.44	15%	400.01
2004			1.56	11.01	14%	400.01
2005			2.42	12.48	19%	400.01
2006						400.01
2007	20%	2				400.01
2008	25%	2.5	9.53	25.52	37%	440.02
2009	40%	4	8.66	27.86	31%	462.02
2010	45%	4.5	10.06	32.06	31%	485.12
2011	35%	3.5	18.39	48.08	38%	630.65
2012	45%	4.5	22.05	57.12	39%	819.85
2013	70%	7	25.61	70.54	36%	983.82
2014	95%	9.5	23.99	70.78	34%	1082.2

Appendix B.22: PADMAOIL

YEAR	CASH_DIVIDEND	DPS(BDT)	EPS(BDT)	NAVPS(BDT)	ROE	SIZE(BDT)IN MN
2000	50%	5	21.55	111.68	19%	49
2001	50%	5	26.45	133.13	20%	49
2002	50%	5	17.8	145.93	12%	49
2003	50%	5	15.92	156.35	10%	49
2004	50%	5	15.88	157.42	10%	49
2005	50%	5	17.72	179.46	10%	49
2006	60%	6	29.37	196	15%	49
2007	60%	6	35.98	226.28	16%	49
2008	50%	5	47.79	259.07	18%	98
2009	50%	5	46.07	180.61	26%	293.99
2010	50%	5	21.69	80.22	27%	440.99
2011	50%	5	19.88	73.36	27%	661.48
2012	65%	6.5	22.11	65.46	34%	893
2013	90%	9	23.15	66.82	35%	982.3
2014	100%	10	21.66	74.22	29%	982.3

Appendix B.23: POWERGRID

YEAR	CASH_DIVIDEND	DPS(BDT)	EPS(BDT)	NAVPS(BDT)	ROE	SIZE(BDT)IN MN
2000						
2001			4.78	132.32	4%	3643.56
2002			3.86	143.77	3%	3643.56
2003			1.56	155.03	1%	3643.56
2004			2.01	164.22	1%	3643.56
2005			7.24	185.67	4%	3643.56
2006	10%	1	17.01	223	8%	3643.56
2007	25%	2.5	34.41	270.21	13%	3643.56
2008	27%	2.7	46.46	351.55	13%	3643.56
2009	27%	2.7	42.39	390.01	11%	3643.56
2010	10%	1	4.41	44.05	10%	4190.09
2011	15%	1.5	2.21	47.21	5%	4190.09
2012	10%	1	2.82	52.82	5%	4609.1
2013	15%	1.5	2.19	63.69	3%	4609.1
2014	10%	1	-0.06	63.61	0.0%	4609.1

Appendix B.24: TITASGAS

YEAR	CASH_DIVIDEND	DPS(BDT)	EPS(BDT)	NAVPS(BDT)	ROE	SIZE(BDT)IN MN
2000						
2001						
2002						
2003			13.48	53.01	25%	7155.15
2004			13.18	61.35	21%	7155.15
2005			17.46	76.77	23%	7155.15
2006			24.1	93.49	26%	7155.15
2007						7155.15
2008	25%	2.5	49.25	159.88	31%	7155.15
2009	27%	2.7	63.67	194.27	33%	7155.15
2010	25%	2.5	85.62	245.17	35%	7870.67
2011	30%	3	9.74	29.98	32%	7870.67
2012	30%	3	9.46	38.39	25%	8264.2
2013	35%	3.5	9.2	46.26	20%	8264.2
2014	38%	3.8	10.38	53.13	20%	8264.2

Appendix B.25: SONALIANSH

YEAR	CASH_DIVIDEND	DPS(BDT)	EPS(BDT)	NAVPS(BDT)	ROE	SIZE(BDT)IN MN
2000			-42.44	214.81	-20%	22.58
2001			-60.13	196.85	-31%	22.58
2002			-107.37	89.48	-120%	22.58
2003			-86.36	3.12	-2768%	22.58
2004			-90.3	-87.18	104%	22.58
2005			-10.41	-97.59	11%	22.58
2006			52.68	-44.9	-117%	22.58
2007			28.45	2215.01	1%	22.58
2008	10%	1	44	2500.94	2%	22.58
2009	15%	1.5	45.67	2546.61	2%	22.58
2010	10%	1	5.61	258.8	2%	27.1
2011	20%	2	5.54	220.77	3%	27.1
2012	10%	1	5.09	223.86	2%	27.1
2013	10%	1	2.65	225.51	1%	27.1
2014	10%	1	0.6	225.58	0%	27.1

Appendix B. 26: ARAMIT

YEAR	CASH_DIVIDEND	DPS(BDT)	EPS(BDT)	NAVPS(BDT)	ROE	SIZE(BDT)IN MN
2000	30%	3	5.33	75.89	7%	40
2001	32%	3.2	8.63	95.51	9%	40
2002	33%	3.3	6.24	36.69	17%	40
2003	33%	3.3	6.91	39.22	18%	40
2004	35%	3.5	8.33	43.05	19%	40
2005	37%	3.7	10.48	39.58	26%	40
2006	37%	3.7	10.75	54.38	20%	40
2007	45%	4.5	14.1	71.49	20%	40
2008	50%	5	17.72	84.2	21%	40
2009	15%	1.5	20.7	98.4	21%	60
2010	40%	4	9.67	74.61	13%	60
2011	50%	5	14.26	83.86	17%	60
2012	50%	5	16.07	99.93	16%	60
2013	50%	5	11.68	106.6	11%	60
2014	50%	5	12.07	140.32	9%	60

Appendix B.27: BERGERPBL

YEAR	CASH_DIVIDEND	DPS(BDT)	EPS(BDT)	NAVPS(BDT)	ROE	SIZE(BDT)IN MN
2000						
2001						
2002			22.15	63.25	35%	231.9
2003			23.31	63.57	37%	231.9
2004			9.83	15.35	64%	231.9
2005	100%	10	10.28	30.81	33%	231.9
2006	110%	11	13.54	34.34	39%	231.9
2007	110%	11	14.63	37.98	39%	231.9
2008	120%	12	17.28	39.26	44%	231.9
2009	150%	15	25	57.25	44%	231.9
2010	180%	18	30.39	72.64	42%	231.9
2011	180%	18	31.1	84.26	37%	231.9
2012	180%	18	32.46	99.21	33%	231.9
2013	220%	22	38.8	126.41	31%	231.9
2014	220%	22	49.64	154.04	32%	231.9

Appendix B.28: SINOBANGLA

YEAR	CASH_DIVIDEND	DPS(BDT)	EPS(BDT)	NAVPS(BDT)	ROE	SIZE(BDT)IN MN
2000	15%	1.5	2.65	13.48	20%	200
2001	15%	1.5	6.75	15.74	43%	200
2002	10%	1	1.48	17.21	9%	200
2003	0%	0	0.04	17.32	0%	200
2004	5%	0.5	0.08	18.81	0%	200
2005	7%	0.7	0.32	18.95	2%	200
2006	5%	0.5	0.45	19.57	2%	200
2007	5%	0.5	1.93	21	9%	200
2008	10%	1	1.62	22.22	7%	200
2009	5%	0.5	0.56	20.25	3%	200
2010	10%	1	2.38	23.34	10%	200
2011	10%	1	1.84	22.53	8%	200
2012	11%	1.1	1.75	23.01	8%	200
2013	10%	1	1.24	23.65	5%	200
2014	10%	1	1.27	24.34	5%	200

Appendix B.29: HAKKANIPUL

YEAR	CASH_DIVIDEND	DPS(BDT)	EPS(BDT)	NAVPS(BDT)	ROE	SIZE(BDT)IN MN
2000						
2001						
2002						
2003	0%	0	-0.27			190
2004	0%	0	-0.27			190
2005	5%	0.5	0.8	10.32	8%	190
2006	8%	0.8	1.21	10.9	11%	190
2007	8%	0.8	1.65	11.87	14%	190
2008	8%	0.8	1.44	12.51	12%	190
2009	10%	1	1.65	12.86	13%	190
2010	5%	0.5	0.52	12.89	4%	190
2011	5%	0.5	0.96	36.49	3%	190
2012	5%	0.5	0.64	31.9	2%	190
2013	5%	0.5	0.5	31.01	2%	190
2014	5%	0.5	0.4	30.07	1%	190

Appendix B.30: ACI

YEAR	CASH_DIVIDEND	DPS(BDT)	EPS(BDT)	NAVPS(BDT)	ROE	SIZE(BDT)IN MN
2000	35%	3.5	3.97	34.99	11%	167.07
2001	38%	3.75	5.67	33.84	17%	167.07
2002	38%	3.75	6.75	36.51	18%	167.07
2003	40%	4	5.28	37.02	14%	167.07
2004	43%	4.25	5.54	48.6	11%	167.07
2005	45%	4.5	6.94	51.53	13%	167.07
2006	60%	6	10.34	64.89	16%	167.07
2007	85%	8.5	21.04	105.55	20%	167.07
2008	100%	10	57.69	154.85	37%	200.48
2009	105%	10.5	30.64	151.62	20%	200.48
2010	120%	12	11.14	223.04	5%	200.48
2011	80%	8	12.11	212.74	6%	240.58
2012	80%	8	-6.98	159.82	-4%	288.7
2013	85%	8.5	7.13	132.31	5%	346.43
2014	100%	10	16.68	120.3	14%	398.4

Appendix B.31: ACIFORMULA

YEAR	CASH_DIVIDEND	DPS(BDT)	EPS(BDT)	NAVPS(BDT)	ROE	SIZE(BDT)IN MN
2000						
2001						
2002						
2003						
2004	0%	0	2.59	15.35	17%	250
2005	0%	0	3.1	18.46	17%	250
2006	0%	0	2.69	21.15	13%	250
2007	0%	0	2.62	23.77	11%	250
2008	10%	1	8.13	32.32	25%	300
2009	25%	2.5	5.3	31.42	17%	300
2010	30%	3	3.05	52.73	6%	300
2011	25%	2.5	4.89	54.63	9%	450
2012	25%	2.5	3.33	38.08	9%	450
2013	25%	2.5	2.87	38.45	7%	450
2014	30%	3	4.14	40.1	10%	450

Appendix B.32: AMBEEPHA

YEAR	CASH_DIVIDEND	DPS(BDT)	EPS(BDT)	NAVPS(BDT)	ROE	SIZE(BDT)IN MN
2000	30%	3	12.65	26.11	48%	20
2001	21%	2.1	0.64	26.74	2%	20
2002	22%	2.2	2.28	26.92	8%	20
2003	25%	2.5	2.95	42.78	7%	20
2004	25%	2.5	2.71	27.88	10%	20
2005	25%	2.5	1.82	27.2	7%	20
2006	25%	2.5	2.5	22.78	11%	20
2007	30%	3	3.87	24.15	16%	20
2008	30%	3	3.17	23.26	14%	20
2009	30%	3	3.45	23.71	15%	20
2010	30%	3	3.68	24.4	15%	20
2011	30%	3	3.81	25.2	15%	20
2012	33%	3.3	3.94	26.14	15%	20
2013	15%	1.5	3.95	26.79	15%	24
2014	28%	2.8	3.13	24.21	13%	24

Appendix B.33: GLAXOSMITH

YEAR	CASH_DIVIDEND	DPS(BDT)	EPS(BDT)	NAVPS(BDT)	ROE	SIZE(BDT)IN MN
2000	35%	3.5	5.31	49.08	11%	120.5
2001	38%	3.75	5.34	49.85	11%	120.5
2002	40%	4	6	51.84	12%	120.5
2003	40%	4	7.21	54.62	13%	120.5
2004	50%	5	15.23	69.49	22%	120.5
2005	30%	3	4.05	68.05	6%	120.5
2006	10%	1	-1.42	63.62	-2%	120.5
2007	25%	2.5	3.74	66.35	6%	120.5
2008	60%	6	11.87	75.72	16%	120.5
2009	160%	16	26.88	96.6	28%	120.5
2010	200%	20	34.05	114.65	30%	120.5
2011	150%	15	23.42	118.07	20%	120.5
2012	150%	15	20.25	123.32	16%	120.5
2013	300%	30	45.35	153.66	30%	120.5
2014	420%	42	68.63	192.3	36%	120.5

Appendix B.34: IBNSINA

YEAR	CASH_DIVIDEND	DPS(BDT)	EPS(BDT)	NAVPS(BDT)	ROE	SIZE(BDT)IN MN
2000	16%	1.6	21.61	117.51	18%	89.99
2001	18%	1.8	24.56	124.08	20%	89.99
2002	20%	2	31.56	141.22	22%	89.99
2003	20%	2	32.28	151.5	21%	89.99
2004	21%	2.1	31.85	160.24	20%	89.99
2005	21%	2.1	36.4	198.75	18%	89.99
2006	21%	2.1	22.82	179.57	13%	89.99
2007	23%	2.3	31.19	187.75	17%	89.99
2008	25%	2.5	48.09	209.64	23%	89.99
2009	8%	0.75	54.7	239.34	23%	107.98
2010	10%	1	5.562	24.883	22%	129.58
2011	10%	1	5.46	25.37	22%	161.98
2012	15%	1.5	4.13	40.82	10%	194.37
2013	25%	2.5	4.48	36.25	12%	213.81
2014	30%	3	5.95	31.77	19%	224.5

Appendix B.35: JMISMDL

YEAR	CASH_DIVIDEND	DPS(BDT)	EPS(BDT)	NAVPS(BDT)	ROE	SIZE(BDT)IN MN
2000						
2001						
2002						
2003						
2004						
2005						
2006						
2007	5%	0.5	0.71	11.38	6%	110
2008	8%	0.75	1.17	11.8	10%	110
2009	8%	0.75	1.58	12.64	13%	110
2010	10%	1	1.61	13.24	12%	110
2011	12%	1.2	1.05	12.83	8%	110
2012	12%	1.2	1.12	44.61	3%	110
2013	15%	1.5	2.95	46.03	6%	110
2014	20%	2	4.46	48.86	9%	110

Appendix B.36: LIBRAINFU

YEAR	CASH_DIVIDEND	DPS(BDT)	EPS(BDT)	NAVPS(BDT)	ROE	SIZE(BDT)IN MN
2000	5%	0.5	18.42	510.86	4%	12.5
2001	13%	1.25	21.82	515.18	4%	12.5
2002	15%	1.5	30.36	530.55	6%	12.5
2003	15%	1.5	36.33	550.38	7%	12.5
2004	18%	1.75	43.3	531.99	8%	12.5
2005	18%	1.75	45.46	559.94	8%	12.5
2006	18%	1.75	47.36	589.81	8%	12.5
2007	18%	1.75	48.14	637.95	8%	12.5
2008	18%	1.75	51.25	671.7	8%	12.5
2009	15%	1.5	34.93	689.13	5%	12.5
2010	20%	2	6.161	1566.71	0.4%	12.5
2011	20%	2	5.63	1566.48	0.4%	12.5
2012	20%	2	4.64	1565.37	0.3%	12.5
2013	20%	2	4.21	1567.58	0.3%	12.5
2014	20%	2	5.92	1571.5	0.4%	12.5

Appendix B.37: ORIONINFU

YEAR	CASH_DIVIDEND	DPS(BDT)	EPS(BDT)	NAVPS(BDT)	ROE	SIZE(BDT)IN MN
2000			-46.74			203.6
2001	0%	0	-46.74	-47.36	99%	203.6
2002	0%	0	-57.41	-19.73	291%	203.6
2003	0%	0	-10.53	-20.19	52%	203.6
2004	0%	0	3.61	-18.23	-20%	203.6
2005	10%	1	5.76	-12.64	-46%	203.6
2006	10%	1	7.53	-10.36	-73%	203.6
2007	0%	0	6.75	-8.85	-76%	203.6
2008	10%	1	18.61	9.75	191%	203.6
2009	13%	1.25	12.87	99.39	13%	203.6
2010	14%	1.4	1.482	10.124	15%	203.6
2011	15%	1.5	1.61	9.32	17%	203.6
2012	16%	1.6	1.73	8.72	20%	203.6
2013	12%	1.2	1.27	7	18%	203.6
2014	15%	1.5	3.64	8.15	45%	203.6

Appendix B.38: PHARMAID

YEAR	CASH_DIVIDEND	DPS(BDT)	EPS(BDT)	NAVPS(BDT)	ROE	SIZE(BDT)IN MN
2000	0%	0	-2.83	114.78	-2%	5.2
2001	0%	0	-2.83	0.78	-363%	5.2
2002	5%	0.5	17.24	46.24	37%	5.2
2003	0%	0	-19.62	-65.86	30%	5.2
2004	10%	1	23.97	-12.84	-187%	5.2
2005	20%	2	71.18	-38.34	-186%	5.2
2006	25%	2.5	131.74	153.32	86%	5.2
2007	25%	2.5	198.61	298.61	67%	5.2
2008	30%	3	206.14	1036.82	20%	5.2
2009	30%	3	210.27	1217.09	17%	5.2
2010	30%	3	96.03	1283.13	7%	31.2
2011	21%	2.1	4.451	23.737	19%	31.2
2012	25%	2.5	5.06	26.3	19%	31.2
2013	15%	1.5	1.39	26.19	5%	31.2
2014	25%	2.5	5.58	31.76	18%	31.2

Appendix B.39: RECKITTBEN

YEAR	CASH_DIVIDEND	DPS(BDT)	EPS(BDT)	NAVPS(BDT)	ROE	SIZE(BDT)IN MN
2000	40%	4	12.61	39.81	32%	47.3
2001	33%	3.3	6.48	42.99	15%	47.3
2002	15%	1.5	-8.01	33.49	-24%	47.3
2003	30%	3	5.41	35.6	15%	47.3
2004	35%	3.5	8.1	39.85	20%	47.3
2005	42%	4.2	15	54.85	27%	47.3
2006	200%	20	23.19	69.89	33%	47.3
2007	220%	22	29.5	79.4	37%	47.3
2008	230%	23	35.05	92.46	38%	47.3
2009	75%	7.5	41.9	61.39	68%	47.3
2010	200%	20	26.71	48.13	55%	47.3
2011	200%	20	28.37	59.61	48%	47.3
2012	150%	15	27.16	78.89	34%	47.3
2013	400%	40	27.42	91.3	30%	47.3
2014	550%	55	37.57	44.75	84%	47.3

Appendix B.40: RENATA

YEAR	CASH_DIVIDEND	DPS(BDT)	EPS(BDT)	NAVPS(BDT)	ROE	SIZE(BDT)IN MN
2000	30%	3	80.79	712.63	11%	46.49
2001	40%	4	144.62	817.24	18%	46.49
2002	50%	5	156.09	960.52	16%	46.49
2003	50%	5	227.07	1005.99	23%	55.78
2004	50%	5	260.79	1042.98	25%	66.94
2005	50%	5	287.66	1106.37	26%	80.33
2006	50%	5	301.41	1172.81	26%	96.39
2007	50%	5	371.39	1469.97	25%	115.67
2008	50%	5	379.21	1545.44	25%	144.59
2009	60%	6	456.52	1652.53	28%	180.74
2010	60%	6	54.324	181.699	30%	225.92
2011	60%	6	47.08	187.99	25%	282.4
2012	60%	6	41.96	187.89	22%	353
2013	75%	7.5	39.57	185.2	21%	441.25
2014	80%	8	38.24	181.04	21%	529.5

Appendix B.41: SQURPHARMA

YEAR	CASH_DIVIDEND	DPS(BDT)	EPS(BDT)	NAVPS(BDT)	ROE	SIZE(BDT)IN MN
2000	65%	6.5	167.26	871.24	19%	250
2001	70%	7	229.47	1030.71	22%	250
2002	75%	7.5	303.78	1107.9	27%	300
2003	70%	7	254.96	1086.42	23%	360
2004	70%	7	269.46	1295.04	21%	432
2005	77%	7.7	290.71	1304.07	22%	496.8
2006	75%	7.5	234.67	1288.65	18%	596.16
2007	50%	5	218.61	1280.08	17%	894.24
2008	40%	4				1207.23
2009	40%	4	170.51	905.05	19%	1509.03
2010	35%	3.5	165.48	857.52	19%	1961.74
2011	30%	3	16.605	81.375	20%	2648.35
2012	25%	2.5	13.66	72.2	19%	3707.69
2013	25%	2.5	11.13	60.33	18%	4820
2014	30%	3	10.26	55.48	18%	5543

Appendix B.42: EHL

YEAR	CASH_DIVIDEND	DPS(BDT)	EPS(BDT)	NAVPS(BDT)	ROE	SIZE(BDT)IN MN
2000	10%	1	11.14	130.49	9%	620.59
2001	10%	1	10.84	131.33	8%	620.59
2002	10%	1	6.17	127.17	5%	620.59
2003	10%	1	10.52	127.69	8%	620.59
2004	10%	1	11.26	128.95	9%	620.59
2005	10%	1	12.16	131.1	9%	620.59
2006	12%	1.2	18.14	137.24	13%	620.59
2007	15%	1.5	15.49	133.42	12%	620.59
2008	15%	1.5	17.25	135.68	13%	620.59
2009	15%	1.5	18.28	153.96	12%	620.59
2010	25%	2.5	35.9	174.86	21%	620.59
2011	10%	1	4.043	19.029	21%	651.62
2012	10%	1	3.16	20.33	16%	716.78
2013	10%	1	3.16	20.74	15%	806.38
2014	15%	1.5	3.08	72.68	4%	846.7

Appendix B.43: SAPORTL

YEAR	CASH_DIVIDEND	DPS(BDT)	EPS(BDT)	NAVPS(BDT)	ROE	SIZE(BDT)IN MN
2000						
2001						
2002						
2003						
2004						
2005						
2006						
2007						
2008	10%	1	35.04	290.19	12%	983.21
2009	20%	2	4.03	33.9	12%	1081.53
2010	20%	2	2.12	33.31	6%	1351.91
2011	10%	1	1.44	44.29	3%	1487.1
2012	10%	1	1.35	42.78	3%	1635.81
2013	15%	1.5	0.88	28.25	3%	1635.81
2014	10%	1	0.82	42.29	2%	1717.6

Appendix B.44: APEXFOOT

YEAR	CASH_DIVIDEND	DPS(BDT)	EPS(BDT)	NAVPS(BDT)	ROE	SIZE(BDT)IN MN
2000	12%	1.2	13.72	213.76	6%	75
2001	10%	1	10.61	214.37	5%	75
2002	10%	1	10.96	215.33	5%	75
2003	14%	1.4	18.83	218.75	9%	75
2004	20%	2	57.43	254.18	23%	75
2005	22%	2.2	60.6	292.78	21%	75
2006	25%	2.5	66.55	334.33	20%	75
2007	25%	2.5	225.81	535.15	42%	112.5
2008	30%	3	168.74	500.39	34%	112.5
2009	35%	3.5	188.03	653.42	29%	112.5
2010	40%	4	20.29	64.54	31%	112.5
2011	45%	4.5	23.2	180.26	13%	112.5
2012	50%	5	23.01	203.26	11%	112.5
2013	55%	5.5	23.61	221.88	11%	112.5
2014	55%	5.5	18.05	234.43	8%	112.5

Appendix B.45: APEXTANRY

YEAR	CASH_DIVIDEND	DPS(BDT)	EPS(BDT)	NAVPS(BDT)	ROE	SIZE(BDT)IN MN
2000	12%	1.2	-9.48	176.76	-5%	152
2001	12%	1.2	16.01	151.39	11%	152
2002	15%	1.5	16.65	170.88	10%	152
2003	12%	1.2	14.74	394.82	4%	152
2004	12%	1.2	11.39	392.65	3%	152
2005	13%	1.3	21.3	400.95	5%	152
2006	15%	1.5	28.07	412.49	7%	152
2007	17%	1.7	17.56	430.05	4%	152
2008	17%	1.7	16.21	429.26	4%	152
2009	21%	2.1	98.18	510.44	19%	152
2010	25%	2.5	93.74	562.52	17%	152
2011	30%	3	6.355	60.107	11%	152
2012	35%	3.5	7.07	66.44	11%	152
2013	40%	4	6.57	69.38	9%	152
2014	45%	4.5	5.51	71.67	8%	152

Appendix B.46: BATASHOE

YEAR	CASH_DIVIDEND	DPS(BDT)	EPS(BDT)	NAVPS(BDT)	ROE	SIZE(BDT)IN MN
2000	160%	16	14.09	29.27	48%	136.8
2001	100%	10	15.74	35	45%	136.8
2002	150%	15	19.75	39.32	50%	136.8
2003	105%	10.5	22.46	50.23	45%	136.8
2004	125%	12.5	12.97	49.45	26%	136.8
2005	120%	12	15.11	52.6	29%	136.8
2006	235%	23.5	20.25	49.35	41%	136.8
2007	250%	25	23.75	60.13	39%	136.8
2008	220%	22	32.85	71.06	46%	136.8
2009	220%	22	32.85	81.91	40%	136.8
2010	250%	25	39.66	96.57	41%	136.8
2011	250%	25	42.34	113.91	37%	136.8
2012	275%	27.5	49.12	135.53	36%	136.8
2013	300%	30	59.44	164.96	36%	136.8
2014	280%	28	51.22	187.94	27%	136.8

Appendix B.47: GP

YEAR	CASH_DIVIDEND	DPS(BDT)	EPS(BDT)	NAVPS(BDT)	ROE	SIZE(BDT)IN MN
2000						
2001						
2002						
2003						
2004			5.7	11.4	50%	13503
2005			5.69	15	38%	13503
2006			6.16	20.2	30%	13503
2007			2.52	21.5	12%	13503
2008			2.46	22.7	11%	13503
2009	60%	6	12.08	37.14	33%	13503
2010	120%	12	7.93	35.57	22%	13503
2011	205%	20.5	13.99	23.6	59%	13503
2012	140%	14	12.96	26.26	49%	13503
2013	140%	14	10.89	23.06	47%	13503
2014	160%	16	12.67	23.23	55%	13503

Appendix B.48: ANLIMAYARN

YEAR	CASH_DIVIDEND	DPS(BDT)	EPS(BDT)	NAVPS(BDT)	ROE	SIZE(BDT)IN MN
2000	12%	1.2	18.32	117.51	16%	178.7
2001	12%	1.2	20.99	126.5	17%	178.7
2002	10%	1	11.7	128.2	9%	178.7
2003	5%	0.5	4.89	128.1	4%	178.7
2004	5%	0.5	0.02	122.62	0%	178.7
2005	5%	0.5	-5.22	112.4	-5%	178.7
2006	5%	0.5	-44.87	102.53	-44%	178.7
2007	0%	0	-4.39	98.14	-4%	178.7
2008	5%	0.5	0.05	112.22	0%	178.7
2009	5%	0.5	0.48	107.7	0%	178.7
2010	10%	1	0.88	10.65	8%	178.7
2011	10%	1	1.17	10.82	11%	178.7
2012	10%	1	1.19	11.01	11%	178.7
2013	10%	1	1.36	11.99	11%	178.7
2014	10%	1	1.04	12.04	9%	178.7

Appendix B.49: APEXSPINN

YEAR	CASH_DIVIDEND	DPS(BDT)	EPS(BDT)	NAVPS(BDT)	ROE	SIZE(BDT)IN MN
2000	12%	1.2	28.82	185.17	16%	84
2001	15%	1.5	33.79	203.96	17%	84
2002	15%	1.5	34.85	227.08	15%	84
2003	13%	1.3	35.75	252.21	14%	84
2004	15%	1.5	44.95	282.07	16%	84
2005	18%	1.8	56.18	320.03	18%	84
2006	18%	1.8	57.01	377	15%	84
2007	20%	2	58.28	417.56	14%	84
2008	20%	2	79.04	476.59	17%	84
2009	15%	1.5	15.62	477.21	3%	84
2010	15%	1.5	16.45	471.63	3%	84
2011	15%	1.5	1.61	48.17	3%	84
2012	18%	1.8	2	49.11	4%	84
2013	18%	1.8	2.2	49.32	4%	84
2014	20%	2	2.24	49.75	5%	84

Appendix B.50: DSHGARME

YEAR	CASH_DIVIDEND	DPS(BDT)	EPS(BDT)	NAVPS(BDT)	ROE	SIZE(BDT)IN MN
2000	5%	0.5	15.56	120.73	13%	22.47
2001	5%	0.5	0.79	122.24	1%	22.47
2002	5%	0.5	2.17	122.31	2%	22.47
2003	0%	0	0.23	122.31	0%	22.47
2004	5%	0.5	3.39	116.42	3%	22.47
2005	5%	0.5	2.25	118.68	2%	22.47
2006	5%	0.5	5.46	114.34	5%	22.47
2007	0%	0	2.31	114.99	2%	22.47
2008	5%	0.5	2.55	115.43	2%	22.47
2009	4%	0.4	1.77	115.52	2%	22.47
2010	5%	0.5	2.26	115.69	2%	22.47
2011	7%	0.7	0.31	11.59	3%	22.47
2012	7%	0.7	0.72	12.01	6%	33.7
2013	7%	0.7	0.88	12.16	7%	33.7
2014	10%	1	1.05	12.24	9%	33.7

Appendix B.51: PRIMETEX

YEAR	CASH_DIVIDEND	DPS(BDT)	EPS(BDT)	NAVPS(BDT)	ROE	SIZE(BDT)IN MN
2000	0%	0	-22.09	268.9	-8%	382
2001	10%	1	13.5	272.38	5%	382
2002	6%	0.6	7.45	277.94	3%	382
2003	5%	0.5	5.53	279.6	2%	382
2004	5%	0.5	5.63	282.07	2%	382
2005	5%	0.5	7	284.06	2%	382
2006	7%	0.7	10.62	287.66	4%	382
2007	10%	1	13.97	291.67	5%	382
2008	10%	1	18.61	300.32	6%	382
2009	10%	1	10.59	632.86	2%	382
2010	11%	1.1	1.37	61.47	2%	382
2011	10%	1	1.81	60.41	3%	382
2012	10%	1	1.01	58.57	2%	382
2013	10%	1	1.21	57.05	2%	382
2014	10%	1	1.17	55.6	2%	382

Appendix B.52: SAIHAMTEX

YEAR	CASH_DIVIDEND	DPS(BDT)	EPS(BDT)	NAVPS(BDT)	ROE	SIZE(BDT)IN MN
2000	7.5%	0.75	14.56	134.58	11.0%	375
2001	7.5%	0.75	12.97	147.55	9.0%	375
2002	5.0%	0.5	12.66	152.72	8.0%	375
2003	5.0%	0.5	7.2	215.78	3.0%	375
2004	7.0%	0.7	7.91	218.19	4.0%	375
2005	7.0%	0.7	7.42	218.41	3.0%	375
2006	5.0%	0.5	8.08	218.33	4.0%	375
2007	10.0%	1	11.22	223.75	5.0%	375
2008	10.0%	1	12.61	224.95	6.0%	375
2009	10.0%	1	11.52	223.75	5.0%	375
2010	0.0%	0	1.88	21.06	9.0%	750
2011	15.0%	1.5	3.31	13.74	24.0%	750
2012	15.0%	1.5	2.75	29.5	9.0%	750
2013	12.0%	1.2	2.12	30.92	7.0%	750
2014	15.0%	1.5	2.81	32.53	9.0%	750

Appendix B.53: SQUARETEXT

YEAR	CASH_DIVIDEND	DPS(BDT)	EPS(BDT)	NAVPS(BDT)	ROE	SIZE(BDT)IN MN
2000						
2001	30.0%	3	6.94	42.28	16.0%	313.12
2002	32.0%	3.2	3.23	45.52	7.0%	313.12
2003	30.0%	3	6.67	45.44	15.0%	344.43
2004	30.0%	3	7.17	49.7	14.0%	378.88
2005	30.0%	3	8.38	50.91	16.0%	426.24
2006	30.0%	3	10.17	53.15	19.0%	490.17
2007	25.0%	2.5	8.94	53.23	17.0%	588.21
2008	18.0%	1.8	6.89	52.69	13.0%	705.85
2009	16.0%	1.6	5	47.41	11.0%	811.72
2010	16.0%	1.6	8.79	48.54	18.0%	974.07
2011	16.0%	1.6	8.47	47.01	18.0%	1168.88
2012	18.0%	1.8	7.09	44.93	16.0%	1344.21
2013	20.0%	2	6.23	44.32	14.0%	1478.64
2014	20.0%	2	5.45	43.92	12.0%	1626.5

Appendix B.54: STYLECRAFT

YEAR	CASH_DIVIDEND	DPS(BDT)	EPS(BDT)	NAVPS(BDT)	ROE	SIZE(BDT)IN MN
2000	25%	2.5	230.97	1215.54	19.0%	6
2001	25%	2.5	234.51	1404.57	17.0%	6
2002	40%	4	238.16	1597.01	15.0%	6
2003	40%	4	229.48	1786.49	13.0%	6
2004	40%	4	132.78	1860.46	7.0%	6
2005	25%	2.5	73.42	1905.44	4.0%	6
2006	25%	2.5	103.37	1983.81	5.0%	6
2007	25%	2.5	72.58	2007.93	4.0%	6
2008	30%	3	82.5	2060.43	4.0%	6
2009	30%	3	106.96	2137.38	5.0%	6
2010	30%	3	133.63	2241.01	6.0%	6
2011	50%	5	26.98	243	11.0%	6
2012	50%	5	34.04	272.04	13.0%	6
2013	45%	4.5	19.79	287.33	7.0%	6
2014	50%	5	26.16	314.96	8.0%	6

Appendix B.55: Descriptive Statistics of all Variables.

Sample: 2000-2014						
	CASHDIV	CASHDIV(-1)	EPS	ROE	NAVPS	SIZE
Mean	0.46318	0.43337	26.26837	0.110072	194.2061	731.0453
Median	0.22	0.22	10.48	0.128676	75.265	190
Maximum	6.2	6.2	456.52	2.909782	2546.61	13503
Minimum	0	0	-107.37	-27.6795	-323.09	4
Std. Dev.	0.748602	0.672548	52.4375	1.053831	355.4795	1942.905
Skewness	3.832585	3.882814	3.724967	-24.6431	3.618634	4.956926
Kurtosis	20.74763	22.20833	21.00083	649.3973	18.01277	29.89776
Jarque-Bera	10822.69	11464.96	11876.17	13080548	8656.896	25988.6
Probability	0	0	0	0	0	0
Sum	321.91	277.79	19727.55	82.22378	145266.2	554863.4
Sum Sq. Dev.	388.9206	289.4851	2062268	828.477	94395176	2.86E+09
Observations	695	641	751	747	748	759

Appendix B.56: Hausmen Test of Linters Model.

Correlated Random Effects - Hausman Test
Equation: EQ01
Test cross-section random effects

Test Summary	**Chi-Sq. Statistic**	**Chi-Sq. d.f.**	**Prob.**
Cross-section random	22.59703	2	0

** WARNING: estimated cross-section random effects variance is zero.

Cross-section random effects test comparisons:

Variable	**Fixed**	**Random**	**Var(Diff.)**	**Prob.**
CASHDIV(-1)	0.960515	1.060462	0.000445	0
EPS	0.000284	0.000024	0	0.2672

Cross-section random effects test equation:

Dependent Variable: CASHDIV

Method: Panel Least Squares

Sample (adjusted): 2001 2014

Periods included: 14

Cross-sections included: 54

Total panel (unbalanced) observations: 628

Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
C	0.055644	0.018526	3.003508	0.0028
CASHDIV(-1)	0.960515	0.027655	34.73169	0
EPS	0.000284	0.000323	0.879469	0.3795

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.864127	Mean dependent var	0.486584
Adjusted R-squared	0.851062	S.D. dependent var	0.778255
S.E. of regression	0.300348	Akaike info criterion	0.517194
Sum squared residual	51.59954	Schwarz criterion	0.913344
Log likelihood	-106.3988	Hannan-Quinn criter.	0.671091
F-statistic	66.14182	Durbin-Watson stat	2.141619
Prob(F-statistic)	0		

Appendix B.57: Hausmen Test of Proposed Model.

Correlated Random Effects - Hausman Test
Equation: EQ01
Test cross-section random effects

Test Summary	**Chi-Sq. Statistic**	**Chi-Sq. d.f.**	**Prob.**
Cross-section random	21.4434	5	0.0007

** WARNING: estimated cross-section random effects variance is zero.

Cross-section random effects test comparisons:

Variable	**Fixed**	**Random**	**Var(Diff.)**	**Prob.**
C	0.057508	0.020626	2.788156	0.0055
CASHDIV(-1)	0.960933	0.027944	34.38793	0
EPS	0.000239	0.000363	0.660401	0.5093
ROE	0.002622	0.011544	0.227088	0.8204
D(NAV)	1.42E-05	7.50E-05	0.188873	0.8503

Cross-section random effects test equation:
Dependent Variable: CASHDIV
Method: Panel Least Squares
Sample (adjusted): 2001 2014
Periods included: 14
Cross-sections included: 54
Total panel (unbalanced) observations: 621

Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
C	0.057508	0.020626	2.788156	0.0055
CASHDIV(-1)	0.960933	0.027944	34.38793	0
EPS	0.000239	0.000363	0.660401	0.5093
ROE	0.002622	0.011544	0.227088	0.8204
D(NAV)	1.42E-05	7.50E-05	0.188873	0.8503
D(SIZE)	-2.56E-05	0.000166	-0.154266	0.8775

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.864005	Mean dependent var	0.489493
Adjusted R-squared	0.849969	S.D. dependent var	0.782001
S.E. of regression	0.302899	Akaike info criterion	0.539351
Sum squared residual	51.56218	Schwarz criterion	0.960363
Log likelihood	-108.468	Hannan-Quinn criter.	0.702989
F-statistic	61.56017	Durbin-Watson stat	2.148103
Prob(F-statistic)	0		

Appendix B.58: Regression Analysis Output Linters Model (Method: Fixed Effect, Dependent Variable: CASHDIV)

Dependent Variable: CASHDIV				
Method: Panel Least Squares				
Sample (adjusted): 2001 2014				
Periods included: 14				
Cross-sections included: 54				
Total panel (unbalanced) observations: 628				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
C	0.055644	0.018526	3.003508283	0.002786
CASHDIV(-1)	0.960515	0.027655	34.73169058	5.27E-143
EPS	0.000284	0.000323	0.879469032	0.379516
Effects Specification				
Cross-section fixed (dummy variables)				
R-squared	0.864127	Mean dependent var		0.486584
Adjusted R-squared	0.851062	S.D. dependent var		0.778255
S.E. of regression	0.300348	Akaike info criterion		0.517194
Sum squared residual	51.59954	Schwarz criterion		0.913344
Log likelihood	-106.399	Hannan-Quinn criter.		0.671091
F-statistic	66.14182	Durbin-Watson stat		2.141619
Prob(F-statistic)	5.17E-212			

Appendix B.59: Regression Analysis Output Linters Model (Method: Random Effect, Dependent Variable: CASHDIV)

Dependent Variable: CASHDIV				
Method: Panel EGLS (Cross-section random effects)				
Sample (adjusted): 2001 2014				
Periods included: 14				
Cross-sections included: 54				
Total panel (unbalanced) observations: 628				
Swamy and Arora estimator of component variances				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
C	0.019113	0.015221	1.255684	0.2097
CASHDIV(-1)	1.060462	0.017894	59.26419	0
EPS	2.38E-05	0.000222	0.107157	0.9147
Effects Specification				
			S.D.	Rho
Cross-section random			0	0
Idiosyncratic random			0.300348	1

Weighted Statistics			
R-squared	0.852645	Mean dependent var	0.486584
Adjusted R-squared	0.852174	S.D. dependent var	0.778255
S.E. of regression	0.299225	Sum squared resid	55.95976
F-statistic	1808.23	Durbin-Watson stat	2.176244
Prob(F-statistic)	0		
Un weighted Statistics			
R-squared	0.852645	Mean dependent var	0.486584
Sum squared residual	55.95976	Durbin-Watson stat	2.176244

Appendix B.60: Normality Test of Sample

Sample: 2000-2014	
	RESID
Mean	2.02E-16
Median	-0.02579
Maximum	3.246306
Minimum	-1.71237
Std. Dev.	0.298744
Skewness	3.675305
Kurtosis	0.7232
Jarque-Bera	2.07
Probability	0.35490
Sum	1.28E-13
Sum Sq. Dev.	55.7801
Observations	626

Appendix B.61: Serial Correlation Test of Variable

Arellano-Bond Serial Correlation Test

Equation: EQ02

Sample: 2000-2014

Included observations: 572

Test order	m-Statistic	rho	SE(rho)	Prob.
AR(1)	0.293548	2.772025	1.878	0.5985
AR(2)	0.04939	0.120335	2.436427	0.9606

*Standard errors could not be computed. Try different covariance matrix options

Appendix B.62: Regression Analysis Output Proposed Model (Method: GMM, Dependent Variable: CASHDIV)

Dependent Variable: CASHDIV
Method: Panel Generalized Method of Moments
Transformation: First Differences
Sample (adjusted): 2002-2014
Periods included: 13
Cross-sections included: 54
Total panel (unbalanced) observations: 572
White period instrument weighting matrix
White period standard errors & covariance (d.f. corrected)
Instrument specification: @DYN(CASHDIV,-2) NAV SIZE @LEV(EPS) @LEV(ROE)
Constant added to instrument list

Variable	Coefficient	Std. Error	t-Statistic	Prob.
CASHDIV(-1)	0.854953	0.000406	2107.037	0
EPS	0.0013	1.66E-05	78.33783	0
ROE	-0.000967	0.002359	-0.409774	0.6821
NAVPS	-5.15E-05	4.54E-06	-11.33935	0
SIZE	5.54E-05	9.19E-07	60.3429	0

Effects Specification

Cross-section fixed (first differences)

Mean dependent var	0.043339	S.D. dependent var	0.304804
S.E. of regression	0.399013	Sum squared residual	90.2728
J-statistic	50.94534	Instrument rank	54
Prob(J-statistic)	0.396986		

Appendix B.63: Regression Analysis Output Proposed Model (Method: Fixed Effect, Dependent Variable: CASHDIV)

Dependent Variable: CASH_DIVIDEND

Method: Panel Least Squares

Sample (adjusted): 2001- 2014

Periods included: 14

Cross-sections included: 54

Total panel (unbalanced) observations: 621

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.057508	0.020626	2.788156	0.0055
CASHDIV(-1)	0.960933	0.027944	34.38793	0
EPS	0.000239	0.000363	0.660401	0.5093
ROE	0.002622	0.011544	0.227088	0.8204
D(NAVPS)	1.42E-05	7.50E-05	0.188873	0.8503
D(SIZE)	-2.56E-05	0.000166	-0.154266	0.8775

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.864005	Mean dependent var	0.489493
Adjusted R-squared	0.849969	S.D. dependent var	0.782001
S.E. of regression	0.302899	Akaike info criterion	0.539351
Sum squared resid	51.56218	Schwarz criterion	0.960363
Log likelihood	-108.4683	Hannan-Quinn criterion	0.702989
F-statistic	61.56017	Durbin-Watson stat	2.148103
Prob(F-statistic)	0		

Appendix B.64: Regression Analysis Output Proposed Model (Method: Random Effect, Dependent Variable: CASHDIV)

Dependent Variable: CASH_DIVIDEND
Method: Panel EGLS (Cross-section random effects)
Sample (adjusted): 2001 2014
Periods included: 14
Cross-sections included: 54
Total panel (unbalanced) observations: 621
Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.022828	0.015985	1.428118	0.1538
CASHDIV(-1)	1.058935	0.018167	58.28931	0
EPS	4.26E-06	0.000231	0.018457	0.9853
ROE	0.004944	0.010734	0.460627	0.6452
D(NAVPS)	3.23E-05	7.11E-05	0.454577	0.6496
D(SIZE)	-9.61E-05	0.000115	-0.836836	0.403

Effects Specification

	S.D.	Rho
Cross-section random	0	0
Idiosyncratic random	0.302899	1

Weighted Statistics

R-squared	0.852837	Mean dependent var	0.489493
Adjusted R-squared	0.851641	S.D. dependent var	0.782001
S.E. of regression	0.301207	Sum squared residual	55.79618
F-statistic	712.8098	Durbin-Watson stat	2.181719
Prob(F-statistic)	0		

Un weighted Statistics

R-squared	0.852837	Mean dependent var	0.489493
Sum squared residual	55.79618	Durbin-Watson stat	2.181719

Appendix B.65: PP Fisher Unit Root Test on CASHDIV

Null Hypothesis: Unit root (individual unit root process)
Series: DPS
Sample: 2000 2014
Exogenous variables: Individual effects
Newey-West automatic bandwidth selection and Bartlett kernel
Total number of observations: 627

Cross-sections included: 53 (1 dropped)

Method	**Statistic**	**Prob.****
PP - Fisher Chi-square	135.928	0.0266
PP - Choi Z-stat	1.67592	0.9531

** Probabilities for Fisher tests are computed using an asymptotic Chi-square distribution. All other tests assume asymptotic normality.

Intermediate Phillips-Perron test results DPS

Cross section	**Prob.**	**Bandwidth**	**Obs**
1	0.255	3	14
2	0.9346	0	14
3	0.0148	1	14
4		Dropped from Test	
5	0.55	1	14
6	0.0481	0	12
7	0.632	1	14
8	0.9252	1	14
9	0.7704	2	10
10	0.0304	7	8
11	0.6072	1	12
12	0.3828	12	14
13	0.9409	1	14
14	0.2496	1	14
15	0.3661	2	14
16	0.894	1	8
17	0.5078	2	14
18	0.7813	1	7
19	0.6754	0	14
20	0.0157	4	5
21	0.9995	6	7
22	0.9959	0	14
23	0.2967	1	8

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24	0.9881	1	6
25	0.7312	2	9
26	0.1178	2	14
27	0.9661	8	9
28	0.1203	4	14
29	0.2235	1	11
30	0.7033	0	14
31	0.0002	5	6
32	0.0205	1	14
33	1	10	14
34	0.4285	1	14
35	0.9998	6	7
36	0.0017	0	14
37	0.9204	3	8
38	0.4395	2	12
39	0.9833	3	14
40	0.8084	0	14
41	0.8585	2	14
42	0.0873	0	14
43	0.2463	1	6
44	0.9895	1	14
45	1	0	14
46	0.7452	0	14
47	0.0128	4	5
48	0.3631	2	14
49	0.2482	1	14
50	0.5383	0	12
51	0.0238	2	14
52	0.7702	5	12
53	0.7056	1	13
54	0.5555	0	14

Appendix B.66: PP Fisher Unit Root Test on CASHDIV (-1)

Null Hypothesis: Unit root (individual unit root process)
Series: CASHDIV(-1)

Sample: 2000 2014

Exogenous variables: Individual effects

Newey-West automatic bandwidth selection and Bartlett kernel

Total number of observations: 572

Cross-sections included: 53 (1 dropped)

Method	**Statistic**	**Prob.****
PP - Fisher Chi-square	137.75	0.0207
PP - Choi Z-stat	1.37013	0.9147

** Probabilities for Fisher tests are computed using an asymptotic Chi-square distribution. All other testsassume asymptotic normality.

Intermediate Phillips-Perron test results CASH_DIVIDEND(-1)

Cross section	**Prob.**	**Bandwidth**	**Obs**
1	0.2776	3	13
2	0.9902	1	13
3	0.0003	3	13
4		Dropped from Test	
5	0.1644	0	13
6	0.0651	0	11
7	0.6587	0	13
8	0.9457	1	13
9	0.9097	6	9
10	0.0705	6	7
11	0.0828	4	11
12	0.3037	12	13
13	0.994	1	13
14	0.862	1	13
15	0.0321	3	13
16	0.8445	0	7
17	0.5025	2	13
18	0.8107	1	6
19	0.7007	0	13
20	0.0656	3	4
21	0.9912	5	6
22	0.9941	0	13
23	0.2803	1	7
24	0.9766	1	5
25	0.7449	2	8
26	0.1134	3	13
27	0.9981	7	8

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28	0.1356	5	13
29	0.2527	2	10
30	0.6369	1	13
31	0.002	3	5
32	0.1683	1	13
33	0.9996	12	13
34	0.3148	0	13
35	0.9615	5	6
36	0.0017	1	13
37	0.845	0	7
38	0.484	2	11
39	0.8689	2	13
40	0.6708	0	13
41	0.9323	3	13
42	0.1233	0	13
43	0.3004	4	5
44	0.9999	3	13
45	1	2	13
46	0.8182	0	13
47	0.0622	3	4
48	0.4328	1	11
49	0.1858	2	13
50	0.214	0	11
51	0.0308	2	13
52	0.4249	4	11
53	0.7298	1	12
54	0.4537	0	13

Appendix B.67: PP Fisher Unit Root Test on EPS

Null Hypothesis: Unit root (individual unit root process)
Series: EPS

Sample: 2000 2014

Exogenous variables: Individual effects

Newey-West automatic bandwidth selection and Bartlett kernel

Total number of observations: 692

Cross-sections included: 54

Method	**Statistic**	**Prob.****
PP - Fisher Chi-square	180.878	0
PP - Choi Z-stat	-1.20017	0.115

** Probabilities for Fisher tests are computed using an asymptotic Chi-square distribution. All other testsassume asymptotic normality.

Intermediate Phillips-Perron test results EPS

Cross section	**Prob.**	**Bandwidth**	**Obs**
1	0.0034	4	14
2	0.1004	1	14
3	0.3433	3	14
4	0.4993	0	9
5	0.3376	1	14
6	0.3992	1	14
7	0.6255	1	14
8	1	13	14
9	0.2221	0	12
10	0.5886	4	10
11	0.3712	1	14
12	0.7494	0	14
13	0.9999	1	14
14	0.15	4	14
15	0.147	1	14
16	0.3451	0	13
17	0.4006	2	14
18	0.9273	2	9
19	0.7622	0	14
20	0.1639	1	9
21	0.9573	1	9
22	0.4421	0	14
23	0.5794	0	13
24	0.5388	4	9
25	0.5756	1	14
26	0.2337	3	14
27	0.986	2	12

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28	0.1248	3	14
29	0.2817	2	11
30	0.2256	1	14
31	0.041	8	10
32	0	2	14
33	0.9998	6	14
34	0.4055	1	14
35	0.9673	2	7
36	0.7396	1	14
37	0.1981	8	14
38	0.5075	2	14
39	0.765	0	14
40	0.5023	1	14
41	0.9114	1	12
42	0.1499	0	14
43	0.0001	0	6
44	0.3277	2	14
45	0.1946	5	14
46	0.9047	1	14
47	0.5465	1	10
48	0.144	1	14
49	0.622	2	14
50	0	2	14
51	0.0027	2	14
52	0.4714	0	14
53	0.1844	2	13
54	0.7089	4	14

Appendix B.68: PP Fisher Unit Root Test on ROE

Null Hypothesis: Unit root (individual unit root process)
Series: ROE
Sample: 2000 2014
Exogenous variables: Individual effects
Newey-West automatic bandwidth selection and Bartlett kernel
Total number of observations: 687
Cross-sections included: 54

Method	**Statistic**	**Prob.****
PP - Fisher Chi-square	196.746	0
PP - Choi Z-stat	-4.42936	0

** Probabilities for Fisher tests are computed using an asymptotic Chi-square distribution. All other tests assume asymptotic normality.

Intermediate Phillips-Perron test results ROE

Cross section	Prob.	Bandwidth	Obs
1	0.1022	2	14
2	0.027	2	14
3	0.003	5	14
4	0.5277	1	9
5	0.2425	0	14
6	0.3373	1	14
7	0.3865	0	14
8	0.6858	2	14
9	0.5001	2	12
10	0.4934	2	10
11	0.5582	2	14
12	0.6095	1	14
13	0.3325	2	14
14	0.0168	0	14
15	0.8359	4	14
16	0.3623	1	11
17	0.1823	2	14
18	0.8638	2	9
19	0.3986	0	14
20	0.4433	2	9
21	0.7828	7	9
22	0.824	1	14
23	0.6191	2	13
24	0.7454	1	9
25	0.0159	1	14

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26	0.3077	0	14
27	0.04	0	12
28	0.1674	5	14
29	0.8001	1	9
30	0.2974	0	14
31	0.2847	5	10
32	0	2	14
33	0.7486	3	14
34	0.2243	3	14
35	0.3962	1	7
36	0.778	2	14
37	0.1004	2	13
38	0.0251	3	14
39	0.5802	1	14
40	0.0582	1	14
41	0.4932	0	12
42	0.4919	1	14
43	0.3652	5	6
44	0.4797	0	14
45	0.0248	1	14
46	0.4679	4	14
47	0.4611	1	10
48	0.1856	0	14
49	0.7465	1	14
50	0.0122	2	14
51	0	1	14
52	0.1246	1	14
53	0.0546	2	13
54	0.2101	1	14

Appendix B.69: PP Fisher Unit Root Test on D (NAVPS)

Null Hypothesis: Unit root (individual unit root process)
Series: D(NAVPS)
Sample: 2000 2014
Exogenous variables: Individual effects
Newey-West automatic bandwidth selection and Bartlett kernel
Total number of observations: 629
Cross-sections included: 54

Method	**Statistic**	**Prob.****
PP - Fisher Chi-square	442.141	0
PP - Choi Z-stat	-13.8431	0

** Probabilities for Fisher tests are computed using an asymptotic Chi-square distribution. All other testsassume asymptotic normality.

Intermediate Phillips-Perron test results D(NAVPS)

Cross section	Prob.	Bandwidth	Obs
1	0.0087	0	13
2	0.0079	2	13
3	0.0418	1	13
4	0.0018	7	8
5	0.0244	1	13
6	0.0189	3	13
7	0.0205	3	13
8	0.007	2	13
9	0.0598	1	11
10	0.0006	9	10
11	0.0106	2	13
12	0.024	1	13
13	0.7402	1	13
14	0.0006	12	13
15	0.0139	4	13
16	0	1	9
17	0.1604	1	13
18	0.6237	1	7
19	0.06	2	13
20	0.0011	6	8
21	0.3981	1	7
22	0.2792	4	13
23	0.039	3	12
24	0.0559	5	7
25	0.0537	0	13

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26	0.0189	1	13
27	0.1524	0	11
28	0	10	13
29	0.0095	6	8
30	0.1328	0	13
31	0.0826	5	9
32	0.0002	4	13
33	0.8899	4	13
34	0.0141	3	13
35	0.0785	5	6
36	0.0198	2	13
37	0.0001	10	12
38	0.0533	0	13
39	0.6893	4	13
40	0.0262	1	13
41	0.0933	0	10
42	0.02	3	13
43	0.0001	4	5
44	0.0027	1	13
45	0.0234	2	13
46	0.7436	2	13
47	0.0955	6	9
48	0.0131	6	13
49	0.0475	0	13
50	0.019	2	13
51	0	8	13
52	0.0411	1	13
53	0.0561	1	12
54	0.0245	1	13

Appendix B.70: PP Fisher Unit Root Test on D (SIZE)

Null Hypothesis: Unit root (individual unit root process)
Series: D(SIZE)
Sample: 2000 2014
Exogenous variables: Individual effects
Newey-West automatic bandwidth selection and Bartlett kernel
Total number of observations: 342
Cross-sections included: 29 (25 dropped)

Method	**Statistic**	**Prob.****
PP - Fisher Chi-square	110.079	0
PP - Choi Z-stat	-2.91981	0.0018

** Probabilities for Fisher tests are computed using an asymptotic Chi-square distribution. All other test assume asymptotic normality.

Intermediate Phillips-Perron test results D(SIZE)

Cross section	Prob.	Bandwidth	Obs
1	0.3486	1	13
2	0.4641	2	13
3		Dropped from Test	
4	0.507	1	8
5	0.0464	3	13
6		Dropped from Test	
7		Dropped from Test	
8		Dropped from Test	
9		Dropped from Test	
10	0.0647	3	9
11	0.2245	1	13
12		Dropped from Test	
13		Dropped from Test	
14		Dropped from Test	
15	0.9992	1	13
16	0.746	1	13
17		Dropped from Test	
18	0.6481	0	11
19		Dropped from Test	
20	0.635	7	8
21	0.653	2	11
22	0.5722	0	13
23	0.0162	2	12
24	0.0299	1	10
25	0.0216	2	13

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26	0.0216	2	13
27		Dropped from Test	
28		Dropped from Test	
29		Dropped from Test	
30	0.7862	4	13
31	0.0071	8	9
32	0.0218	0	13
33		Dropped from Test	
34	0.6049	1	13
35		Dropped from Test	
36		Dropped from Test	
37		Dropped from Test	
38	0.0216	2	13
39		Dropped from Test	
40	0.9982	1	13
41	0.7383	1	13
42	0.6721	0	13
43	0.3792	0	5
44	0.0216	2	13
45		Dropped from Test	
46		Dropped from Test	
47		Dropped from Test	
48		Dropped from Test	
49		Dropped from Test	
50	0.0218	1	13
51		Dropped from Test	
52	0.0216	2	13
53	0.2826	7	12
54		Dropped from Test	

Appendix C

Appendices to Chapter 5

Appendix C.I Heteroscedasticity Test Result

(A) Companies Paid Cash Dividend

Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	0.092356	Prob. F(1,28)	0.7635
Obs*R-squared	0.098627	Prob. Chi-Square(1)	0.7535
Scaled explained SS	1.048891	Prob. Chi-Square(1)	0.3058

Test Equation:
Dependent Variable: RESID^2
Method: Least Squares
Sample: 1 30
Included observations: 30

Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
C	0.004118	0.003775	1.090851	0.2846
DIVIDEND	-8.54E-06	2.81E-05	-0.303901	0.7635

R-squared	0.003288	Mean dependent var	0.003584
Adjusted R-squared	-0.032309	S.D. dependent var	0.018014
S.E. of regression	0.018303	Akaike info criterion	-5.099202
Sum squared resid	0.009380	Schwarz criterion	-5.005789
Log likelihood	78.48803	Hannan-Quinn criter.	-5.069318
F-statistic	0.092356	Durbin-Watson stat	1.956704
Prob(F-statistic)	0.763450		

(B) Companies Paid Stock Dividend

Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	0.270840	Prob. F(1,28)	0.6069
Obs*R-squared	0.287406	Prob. Chi-Square(1)	0.5919
Scaled explained SS	1.932264	Prob. Chi-Square(1)	0.1645

Test Equation:
Dependent Variable: RESID^2
Method: Least Squares
Sample: 1 30
Included observations: 30

Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
C	6.06E-05	6.03E-05	1.004728	0.3236
DIVIDEND	-2.29E-06	4.40E-06	-0.520423	0.6069

R-squared	0.009580	Mean dependent var	3.17E-05
Adjusted R-squared	-0.025792	S.D. dependent var	0.000126
S.E. of regression	0.000128	Akaike info criterion	-15.02310
Sum squared resid	4.60E-07	Schwarz criterion	-14.92968
Log likelihood	227.3465	Hannan-Quinn criter.	-14.99321
F-statistic	0.270840	Durbin-Watson stat	1.896623
Prob(F-statistic)	0.606860		

Appendix C.2: OLS Regression Output

(A) Companies Paid Cash Dividend

Dependent Variable: AVERAGE_MAAR
Method: Least Squares
Sample: 1 30
Included observations: 30

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.008005	0.012782	0.626257	0.5362
DIVIDEND	-7.87E-06	9.51E-05	-0.082726	0.9347

R-squared	0.000244	Mean dependent var	0.007513
Adjusted R-squared	-0.035461	S.D. dependent var	0.060900
S.E. of regression	0.061970	Akaike info criterion	-2.659986
Sum squared resid	0.107529	Schwarz criterion	-2.566573
Log likelihood	41.89979	Hannan-Quinn criter.	-2.630103
F-statistic	0.006844	Durbin-Watson stat	2.435430
Prob(F-statistic)	0.934658		

(B) Companies Paid Stock Dividend

Dependent Variable: AVERAGE_MAAR
Method: Least Squares
Sample: 1 30
Included observations: 30

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.002009	0.002740	0.733088	0.4696
DIVIDEND	-0.000234	0.000200	-1.171808	0.2511

R-squared	0.046748	Mean dependent var	-0.000951
Adjusted R-squared	0.012703	S.D. dependent var	0.005861
S.E. of regression	0.005824	Akaike info criterion	-7.389472
Sum squared resid	0.000950	Schwarz criterion	-7.296059
Log likelihood	112.8421	Hannan-Quinn criter.	-7.359589
F-statistic	1.373133	Durbin-Watson stat	2.433163
Prob(F-statistic)	0.251149		

Appendix C.3 Average MAAR and Dividend

(A) Companies paid Cash Dividend

Name of The Companies	Average MAAR	Dividend (%)
AAMRATECH	-0.07231	10
ACIFORMULA	0.322036	30
AFTAB AUTOMOBILES LIMITED.	-0.00281	17
AGRANINS	-0.00053	10
ALARABANK	-0.0023	14
AMBEEPHA	-0.00449	28
AMCL	-0.00329	32
ANLIMAYARN	-0.00188	10
ANWARGALV	0.007914	7.5
APEXFOODS	-0.00282	20
ATLASBANG	-0.00205	35
BATBC	0.003941	550
BERGERPBL	0.003172	220
BRAC BANK LTD.	-0.00035	20
BSRM STEELS LIMITED	-0.00094	15
CONFIDCEM	-0.00135	25
DBH	-6.1E-05	25
DELTA LIFE INSURANCE COMPANY LIMITED	-0.00538	20
FASFIN	-0.00377	10
GEMINISEA	0.008056	7.5
GP	0.000296	160
HEIDELBERG CEMENT BD.	0.000206	380
ICB	-0.00027	45
ISLAMIC BANK LTD.	-0.00365	15
LAFARGE SURMA CEMENT LTD.	0.000126	10
MERCANBANK	-0.0033	10
ORIONPHARM	-0.00061	15
PADMA OIL	-0.00466	100
PUBALIBANK	-0.00212	10
RAKCERAMIC	-0.00143	25

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

(B) Companies Paid Stock Dividend

Name of The Companies	Average MAAR	Dividend (%)
ABBANK	-0.00305	12.5
AGNISYSL	-0.0009	10
AL-HAJTEX	-0.00852	20
ALLTEX	0.026088	10
APOLOISPAT	-0.00617	15
BARKAPOWER	0.00011	17
BDCOM	-0.00144	15
BDTHAI	0.001252	10
BDWELDING	0.004012	5
BEXIMCO	0.000902	15
CITYGENINS	-0.00196	10
CMCKAMAL	-0.00144	12.5
EXIMBANK	-0.00144	10
FAMILYTEX	3.22E-05	10
FARCHEM	-0.00336	20
FEDERALINS	-0.00216	10
FIRSTFIN	-0.00462	5
FIRSTSBANK	-0.00156	10
IFIC	-0.00241	15
JAMUNABANK	-0.00241	19
LEGACYFOOT	8.53E-05	5
METROSPIN	-0.00482	5
MHSML	-0.00435	25
MIRACLEIND	-0.00303	5
MITHUNKNIT	-0.00552	20
MTB	-0.00356	20
NBL	0.001854	10
NPOLYMAR	0.004616	18
SALVOCHEM	1.59E-05	10
UNITEDAIR	-0.00477	10

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

Appendix C.4 Average MAAR and Corresponding T Values

(A) For Both Companies (Cash and Stock Dividend)

Days	MAAR			
	Cash		Stock	
	Average MAAR	Calculated t value	Average MAAR	Calculated t value
-30	-0.09%	-0.2847	-0.70%	-1.1908
-29	-0.04%	0.2962	0.12%	0.1068
-28	-1.43%	-2.9297	-0.75%	-1.3174
-27	-0.22%	-0.4351	-0.73%	-1.1189
-26	-0.36%	-1.0716	-0.16%	-0.2591
-25	0.20%	-0.1673	0.22%	0.1478
-24	0.78%	0.1979	-0.46%	-0.7999
-23	0.37%	-0.6785	0.62%	0.7482
-22	0.51%	-0.4270	-0.32%	-0.7269
-21	0.72%	0.3723	-0.68%	-1.2659
-20	0.53%	0.8185	-0.39%	-0.6575
-19	0.64%	0.0630	0.12%	0.3284
-18	0.34%	-0.0906	-0.05%	-0.2219
-17	-0.56%	-1.4130	-0.20%	-0.3125
-16	0.00%	-0.1953	-1.00%	-1.6470
-15	-0.31%	-0.8247	-0.18%	-0.0834
-14	-0.37%	-1.4862	0.02%	-0.0636
-13	0.33%	-0.3551	-0.69%	-1.1558
-12	0.36%	0.0559	-1.04%	-1.8842
-11	0.45%	0.3324	0.12%	0.0075
-10	0.07%	-0.6494	-0.48%	-0.9453
-9	-0.24%	-1.2384	1.40%	2.2567
-8	-1.02%	-1.8735	-0.08%	-0.4625
-7	-0.75%	-0.8176	0.01%	0.0232
-6	-0.43%	-0.1427	0.16%	0.3710
-5	0.33%	0.8534	-0.60%	-0.7966
-4	0.29%	1.2446	-0.47%	-0.6949
-3	0.21%	1.0976	0.87%	0.8966
-2	0.00%	-0.7456	-0.47%	-1.0639
-1	0.07%	-0.1983	-0.42%	-1.1807
0	0.88%	-1.2093	3.08%	1.0628
1	0.48%	-0.6421	0.36%	-0.0704
2	2.04%	1.7635	0.02%	-0.2457
3	2.20%	2.2211	1.35%	1.7661
4	2.02%	1.2572	-0.10%	0.1566
5	1.59%	-0.2227	-0.02%	0.2881
6	0.87%	-1.0374	0.68%	0.7877

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7	1.07%	-0.1588	0.63%	1.9811
8	-0.42%	-4.1346	-3.21%	-5.5464
9	1.68%	0.9476	-0.77%	-0.8795
10	0.60%	-2.5138	-0.79%	-2.0153
11	0.91%	-1.4344	-0.69%	-1.4591
12	1.60%	-0.1395	0.06%	0.0288
13	2.05%	0.9795	0.64%	0.7897
14	1.03%	-0.7559	-2.28%	-3.8750
15	1.04%	-0.8284	-1.07%	-0.7784
16	1.51%	1.0506	-1.13%	-1.6473
17	0.75%	-1.0229	0.43%	0.4238
18	0.98%	-1.7841	0.62%	1.0372
19	2.03%	-0.0469	0.70%	0.7508
20	1.81%	-0.2874	-1.00%	-1.9901
21	2.01%	0.2080	-0.50%	-0.6471
22	2.15%	0.9453	0.18%	-0.0835
23	1.04%	-1.3357	0.77%	1.0578
24	1.73%	0.5851	0.21%	0.0367
25	2.60%	2.1722	0.82%	1.1312
26	1.52%	-0.2442	0.59%	0.6297
27	1.70%	-0.1999	-0.11%	0.0854
28	2.20%	0.6171	0.37%	0.1538
29	2.07%	1.0193	0.15%	0.3108
30	1.71%	-0.7494	0.38%	0.3997

Appendix C.5 Average CAR and Corresponding T Values

(A) For Both Companies (Cash and Stock Dividend)

Days	CAR			
	Cash		Stock	
	Average CAR	T value	Average CAR	T value
-30	-0.09%	-0.2847	-0.70%	-1.1908
-29	-0.13%	0.0115	-0.57%	-1.0840
-28	-1.57%	-2.9182	-1.32%	-2.4014
-27	-1.78%	-3.3533	-2.05%	-3.5203
-26	-2.15%	-4.4249	-2.21%	-3.7794
-25	-1.94%	-4.5922	-1.99%	-3.6316
-24	-1.16%	-4.3943	-2.46%	-4.4314
-23	-0.79%	-5.0728	-1.83%	-3.6832
-22	-0.28%	-5.4997	-2.15%	-4.4101
-21	0.44%	-5.1275	-2.83%	-5.6760
-20	0.96%	-4.3090	-3.21%	-6.3335
-19	1.60%	-4.2460	-3.09%	-6.0051
-18	1.94%	-4.3366	-3.15%	-6.2270
-17	1.38%	-5.7496	-3.35%	-6.5395
-16	1.38%	-5.9449	-4.35%	-8.1865
-15	1.07%	-6.7696	-4.52%	-8.2699
-14	0.69%	-8.2559	-4.50%	-8.3335
-13	1.02%	-8.6109	-5.19%	-9.4892
-12	1.38%	-8.5550	-6.23%	-11.3735
-11	1.83%	-8.2226	-6.11%	-11.3660
-10	1.90%	-8.8720	-6.59%	-12.3112
-9	1.66%	-10.1105	-5.19%	-10.0545
-8	0.63%	-11.9840	-5.27%	-10.5171
-7	-0.12%	-12.8016	-5.26%	-10.4939
-6	-0.55%	-12.9443	-5.10%	-10.1229
-5	-0.22%	-12.0909	-5.69%	-10.9195
-4	0.08%	-10.8463	-6.17%	-11.6144
-3	0.29%	-9.7487	-5.29%	-10.7178
-2	0.29%	-10.4943	-5.76%	-11.7817
-1	0.36%	-10.6926	-6.18%	-12.9624
0	1.24%	-11.9019	-3.10%	-11.8996
1	1.72%	-12.5441	-2.74%	-11.9700
2	3.75%	-10.7805	-2.72%	-12.2157
3	5.95%	-8.5594	-1.37%	-10.4496
4	7.97%	-7.3022	-1.47%	-10.2930
5	9.57%	-7.5250	-1.49%	-10.0049
6	10.43%	-8.5623	-0.81%	-9.2172

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7	11.50%	-8.7211	-0.18%	-7.2362
8	11.08%	-12.8557	-3.39%	-12.7826
9	12.76%	-11.9081	-4.15%	-13.6620
10	13.36%	-14.4219	-4.94%	-15.6773
11	14.27%	-15.8563	-5.63%	-17.1364
12	15.88%	-15.9959	-5.57%	-17.1075
13	17.92%	-15.0164	-4.93%	-16.3178
14	18.96%	-15.7722	-7.22%	-20.1928
15	20.00%	-16.6006	-8.28%	-20.9712
16	21.50%	-15.5500	-9.41%	-22.6184
17	22.25%	-16.5729	-8.98%	-22.1946
18	23.23%	-18.3570	-8.36%	-21.1574
19	25.26%	-18.4039	-7.66%	-20.4066
20	27.07%	-18.6913	-8.66%	-22.3967
21	29.09%	-18.4833	-9.15%	-23.0438
22	31.24%	-17.5380	-8.98%	-23.1273
23	32.29%	-18.8737	-8.21%	-22.0695
24	34.01%	-18.2887	-8.00%	-22.0328
25	36.61%	-16.1164	-7.17%	-20.9016
26	38.14%	-16.3607	-6.58%	-20.2719
27	39.84%	-16.5606	-6.70%	-20.1865
28	42.04%	-15.9435	-6.32%	-20.0327
29	44.12%	-14.9242	-6.17%	-19.7219
30	45.83%	-15.6736	-5.80%	-19.3222

(Note in the above table values with dark background indicate statistically significant at 90% confidence level and values that have red border are statistically significant at 95% confidence level.)