



Determining Factors of Share Prices in Bangladesh: An Empirical Study on Cash Dividends and Retained Earnings

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Abstract

The predominant objective of this research is to ascertain what factors dominant the market share price of selected power generation companies listed on the Dhaka Stock Exchange (DSE), a developing capital market in Bangladesh, and also to analyze the interdependence among market share price, dividends, and retained earnings in a practical sense. The least squares (LS) method was used in this paper to investigate the dynamic relationships between stock price and various financial variables such as cash dividends and retained earnings. Using the statistical software Eviews 10, this paper has found that the explanatory variables dividend and retained earnings both have a cabalistic impact on determining the share price. But their dominance is very negligible in determining the share price of power generation companies traded on the Dhaka Stock Exchange (DSE).

Keyword: Share Price, Dividend, Retained Earnings.

Introduction:

Managers should consider a number of findings from dividend research when making dividend policy decisions. Theoretical frameworks on dividends have been developed by several disciplines. There are three main hypotheses that try to account for the dividend demand from investors. One is that investors may count on having a lot of "current income" if dividends are quite large. It's possible that they cash out some of their holdings annually to supplement their income. However, they'd have to pay transaction fees and perhaps capital gains taxes. Investors value dividends more than retained earnings. Investors place a higher value on dividends because they are safer than retained earnings.

A second explanation of dividends holds that shareholders are unconcerned with dividends or the growth in value of their individual shares, and instead focus exclusively on total returns. Given that dividend policy is viewed as essentially a finance decision, this statement is completely irrelevant. Earnings potential is the sole factor in determining a company's worth at present. For this reason, shareholders don't care much if a company chooses to pay a modest dividend and fund itself with the company's retained earnings or a big payout and recuperate the money by issuing fresh shares or debt.

The third indicator implies that traders are concerned about the taxable effects of dividends and capital gains. Investors would choose a smaller payout policy if the tax rate on dividend is greater than the capital gains rate. Whenever a dividend rise or decrease is announced, the market always reacts favorably to raises and adversely to decreases, as shown by empirical research.

Research also shows that in the year after a dividend decrease is announced, the share prices of the firms involved considerably outperform the market. There is no compelling evidence that firms that choose to allocate greater fraction of their earnings to shareholders in the form of dividends generate better overall returns for their investors than other companies.

The degree of knowledge disparity between management and shareholders will likely determine the amount of the market unfavorable reaction to a stock-offering announcement. A company's stock price will be less affected by news that has been widely expected by investors who have in-depth knowledge of the business. Given the informational inequalities that exist between management and external investors, dividends have a significant signaling influence on the company's finances. Information asymmetry arises when some participants in a system have access to more complete or timely information than others. When the more knowledgeable members of a group take action that the less knowing members of the group can trust, experts say that they are sending a "signal". The investors in a company are usually the ones in the dark, while the management has all the insider knowledge about the company's future success (*Copeland and Weston, 2005*).

Questions Regarding This Research:

1. When it comes to ordinary stock, how much of an impact do dividends and retained earnings have on the stock price?
2. Examining dynamic connections of these variables in an effort to elucidate the underlying dividend information structure.

3. What policy ramifications exist, and where should future research be directed, in light of the existing state of the dynamical interactions between the market price of common stock and its drivers?

Literature Review:

Dividend Hypothesis

One of the first pieces of empirical work on the topic of corporate dividend practice is Lintner's (Lintner, 1956) study, in which he interviewed the top executives at 28 different companies in an effort to determine what factors led to their preference for or aversion to paying dividends. According to his findings, business management typically sets a goal (i) dividend payout as a percentage of profits and (ii) establishes a dividend payment schedule that, over time, distributes a growing percentage of profits to shareholders. A hypothesis was proposed by him based on the relevance between the rate at which traders' dividends are paid and a firm's worth in the marketplace. To prove his dividend stability theory, Lintner demonstrated the below connection between earnings and dividends.

$$D_t^* = rE_t$$

Where,

D_t^* represents the targeted dividend payment per share during the period t ,

r represents the payout ratio, and

E_t indicates the earnings per share of the firm for period t .

Lintner then devised the following observation to keep dividend payments steady by changing them annually by a small percentage of the variation identified by profits in combination with the desired payout ratios.

$$D_t - D_{t-1} = a + c(D_t^* - D_{t-1})$$

Where,

a represents constant and

c represents constant speed of adjustment factor.

To better clarify the dividend payment practice of corporations, Lintner created the following equation by partially correcting the aforementioned findings to get an adjustment model.

$$D_t = a + b_1 E_t + b_2 D_{t-1} + E_t$$

Where,

b_1 equal to cr ,

b_2 equal to $1 - c$ and

E_t represents error term during period t .

The aforementioned equation was employed by Lintner (Lintner, 1962, Lintner, 1964) in most of his studies to describe the behavior of company dividend policy alongside other factors driving stock prices using aggregate data.

Fama and Blahnik (Fama and Blahnik, 1968) nonetheless, tested their theory using particular data of the company. Considering 17 years of data from 201 companies, they looked at a new model for describing dividend behavior in order to i) analyze dividend policy for a subset of one hundred ninety one companies and ii) forecast dividend payments for the next period.

Dividend Payout and Value of the Firm

However, Miller and Modigliani (Miller and Modigliani, 1958) contend that the value of a corporation does not rely on its dividend payment rate so long as perfect capital markets, rational conduct, and zero taxation are assumed. Although, Durand (Durand, 1959) reveals a robust and favorable cross-sectional connection among share price, dividends, and operating profit. According to the Miller and Modigliani (Miller and Modigliani, 1961), the dividend yield of a corporation does not affect its market value. In an ideal environment free of taxes, transaction costs, and other market defects, they said, the dividend payout of a corporation would not affect the stock price. They may alter their stance if persons were subjected to a capital gains tax rate that was smaller than the rate on regular income. No corporation would distribute dividends under these conditions.

Both Bali, R. and Hite, G. L. (Bali and Hite, 1998) investigate the impact of dividends in a taxed situation. They did this research to find out how stock price fluctuates on ex-dividend days are affected by the discrete nature of trading prices. The researchers looked at all 207499 observations that were

recorded in the CRSP files between 2nd July, 1962 and 31st December, 1994 as their sample. They found that ex-day behavior for taxable cash dividends is comparable to that of nontaxable stock dividends.

Investors' trading patterns on ex-dividend days were investigated by *Frank, M. and Jagannathan, R. (Frank and Jagannathan, 1998)*. They took into account 1896 observations from 351 companies that were members of the Hong Kong Stock Exchange. From 1980 through 1993, daily records were kept. Their findings show that on ex-dividend days, the average decrease in stock price is smaller than the dividend's value. The impact of tax clienteles has been widely cited as a possible cause.

A study of the correlation between dividend payments and stock prices is essential for verifying these hypotheses. Using cross-sectional data, *Friend and Puckett (Friend and Puckett, 1964)* investigated whether or not dividends increased share price. Evidence from the stock market was presented that supported the idea that dividends affect share prices for retained profits by a factor of many. Their research showed that the dividend multiplier was much higher than the multiplier for retained profits. The below regression equation is often used with cross-sectional data, and it is this equation that they are commenting on.

$$P_{it} = a + bD_{it} + cR_{it} + \epsilon_{it}$$

Where,

P_{it} represents price per share at period t ,

D_{it} represents dividend paid out at period t ,

R_{it} represents retained earnings at period t and

ϵ_{it} represents the error term.

Price and volume response around earnings announcement dates were the subject of an empirical test by *Beaver, W. H. (Beaver, 1968)*. He investigates how much information value investors place on profits for ordinary stock. His research focuses on the volume and price changes of common stocks in the week before to the announcement date, which represent investor response to earnings reports. For his research, he used data from a subset of the yearly earnings releases made by 143 companies traded on the NYSE between 1961 and 1965. He reasoned that the market's response to the earnings release proved his point that the report was informative. In addition, he found that the earnings report affects not just the expectations of individual investors, but also those of the market as a whole, as seen by the shifts in equilibrium prices. Each trade's after-tax price difference may be seen as a data point in an investor's probability distribution over the expected after-tax price difference. Thus, the price fluctuation over any given time frame is an aggregation of independent random factors. According to the results, there is a connection between reported profits and underlying events that investors believe will impact the market price.

Patell, J. M. (Patell, 1976) examined the effect of voluntary disclosure of company profits per share predictions on the price of common stock. His experiment took into account weekly data from 258 NYSE-listed companies between 1963 and 1967. For the study, he made a total of 336 observations. His findings show that substantial price changes occurred after disclosures of profits per share estimates, suggesting that investors may have gained insight from either the information provided in a management presage or just making a revelation of one's own. Positive forecasters saw stable price action in the next period, while members of the negative forecasting group saw prices continuing to fall.

Woolridge, J. R. (Woolridge, 1983) looked at the patterns of stock price movement before and after the ex-day. He used daily stock prices from CRSP from 1974-1976 to analyze a sample of 188 companies that were all registered on the New York Stock Exchange (NYSE). Two-stage analysis of stock price movement around ex-stock dividend days was used. He came to the conclusion that shareholders benefit from stock dividends even if they are minor since the stock price is not fully adjusted on the ex-date. In addition, author claims that stock dividend announcements boost investor wealth.

In his research, *Atiase, R. K. (Atiase, 1985)* concentrated in on how the worth of a company's stock changed after the release of quarterly results. The sample of 200 stocks he studied were all traded on the New York Stock Exchange (NYSE), and he looked at their weekly security prices between 1969 and 1972. This study lends strong credence to the idea that the funded value (size) of businesses has an inverse relationship with the extent of unanticipated securities price fluctuations in response to earnings reports. The study came to the conclusion that the capitalized value of a company is inversely proportional to the extent to which the price of a securities revalued in reaction to its second quarter earnings report.

Examining how prices are set on the day dividends are announced was the focus of a research by *Bajaj, M and Vijh, A. M. (Bajaj and Vijh, 1995)*. They used 67256 data points from organizations trading on the New York Stock Exchange (NYSE) as their study sample. Prices at market close and volume of trade were analyzed each day between 1962 and 1987. Unconditional positive excess returns were shown to be greater for smaller companies and cheaper equities. Another finding was that when the business size shrank and the stock price rose, the extra return on average on all dividend proclamations rose as well.

Using a collection of information variables, *Beaver, W. H., McAnally, M. L. and Stinson, C. H. (Beaver and Stinson, 1997)* created a model to predict cross-sectional price fluctuations and earnings fluctuations. They generated annual betas for 176 Compustat Bank businesses using 1973-1991 daily return data. In their investigation, they apply three different methods of estimation to evaluate the outcomes of simultaneous equations: ordinary least squares, two-stage least squares and three-stage least squares. They found that the estimations obtained using the simultaneous equations method was higher than those obtained using the single-equation method. Their study centers on the idea that the price-earnings connection may be represented by a set of simultaneous equations.

For his dissertation, *Bhattacharya, N. (Bhattacharya, 2001)* looked at the relationship between the seasonal random walk model and the profits expectations of small traders. He used a random sample of 16444 NYSE and AMEX earnings releases as his data. To reduce the amount of random variation in the prediction error measures, he utilized earnings projection data from the Organizational Brokers Estimate System from 1988 to 1992 in his research. It is possible that we will assess the market action by summing the number of transactions and the trading volume (the number of shares exchanged). He came to the conclusion that certain investors clearly place their faith in the seasonal random-walk profits expectation model. The data from his research also shows that various types of investors have distinct trading reactions to earnings releases.

Using a present value (PV) model of stock prices, *Kanas, A. (Kanas, 2005)* presents the proof of nonlinearities from experiment. He used three nonlinear nonparametric approaches, including nonlinear co-integration, nonlinear Granger Causality Tests, and locally-weighted regression, to assess the connection between stock prices and dividends in the United Kingdom, the United States, Japan, and Germany across time. According to his research, Granger Causality and linear co-integration are not present for any nation. The evidence for nonlinear Granger causality and nonlinear co-integration among the four nations is much stronger. In addition, there is empirical data that supports his findings that predicted stock returns are time-varying, therefore his findings make sense. He came to the conclusion that the predictive value of lagged dividends for stock returns is not linear but instead nonlinear. As a result, the connection between dividends and stock price is not linear, neither in the short term nor over longer time periods. Evidence from all four nations is shown, indicating that stock returns can be predicted and that anticipated stock returns fluctuate with time, indicating that the right PV model is nonlinear. They imply that researchers assessing and creating representations of the coupled dynamics of stock prices and dividends should take into account nonlinear empirical regularities.

Despite widespread opinion to the contrary, studies have demonstrated that dividends have a little effect on the value of common stock. Following the passage and execution of the Tax Reform Act of 1986, *Michaely, R. (Michaely, 1991)* studied the dynamics of stock prices on ex-dividend days. His research included 6522 occurrences at NYSE-traded companies and their daily closing prices from 1986-1989. To back up the idea that long-term individual investors don't have much of an impact on ex-day stock prices, he discovered that the implementation of tax reform had little influence on the behavior of ex-dividend stock prices.

The research was done by *Allen, D. E. and Rachim, V. S. (Allen and Rachim, 1996)*. They aimed to determine the relationship between dividend policy and stock price volatility. They mentioned one element of dividend policy—the connection between dividend policy and stock price risk—as a point of contention despite years of theoretical and empirical investigation. They looked at a random sample of 173 publicly traded Australian firms between the years 1972 and 1985. Regarding the correlation with both dividend payout and stock performance, they reached no findings. It was predicted, however, that leverage, stock price volatility, and earnings volatility would all have positive connections, and that the payout ratio would have a negative association with all three. The alliance between company size and stock price volatility is shown to be statistically significant as well. In this case, the findings do not support the hypothesis that dividend policy may affect stock price volatility.

As a result of this question, *Sadka, G. (Sadka, 2007)* undertook research to determine whether or not shifts in predicted profits might account for the observed volatility in the dividend-price ratio. More importantly, his work shows that fluctuations in a common contributor affecting both returns and profits may create considerable price volatility. The findings he obtained agree with the notion that dividend policy is irrelevant. Studying the factors that influence stock price fluctuations, he said, shows that differences in projected returns explain much of the variance in the aggregate dividend-price ratio (dividend yield), but there does not seem to be a significant impact from variations in predicted cash flows. The study came to the conclusion that the dividend yield didn't include any particulars regarding cash flows, and so could not be used to anticipate future dividend increases. His study shows that the dividend-price ratio's cash flow information boosts profits rather than dividends.

Firms' Riskiness and Dividend Distribution

Friend and Puckett's methodology has been criticized. It presumes that dividend payments and price-to-earnings ratios have no bearing on a company's inherent riskiness. In contrast to retained profits, where there is significant room for mistake, dividends are virtually perfectly measurable. Even though dividends and profits affect share price differently, the effects are about balanced. On the other hand, *Friend and Puckett (1964)* demonstrated the link between dividend payment rate and firm market value, as well as the potential biases in each. Theoretically, corporations would optimize their dividend distribution such that the dividend impact on management was equal to the retained profit impact on management, resulting in the highest potential share price. A reduction in measurement error on retained earnings is achieved by the use of a time series fit using the formula given to get the normalized earnings variable.

$$(E/P)_{it} / (E/P)_{kt} = a_i + b_{it} + \epsilon_{it}.$$

Where,

$(E/P)_{it}$ represents earnings/price ratio of firm i at period t ,

$(E/P)_{kt}$ represents average earnings/price ratio for the industry/market at period t ,

t represents time index, and

ϵ_{it} represents error term.

If regularized retained earnings were determined by deducting dividends from regularized profits, the dividend/retained earnings coefficient discrepancy may be decreased. Stock market participants wonder whether the capital asset pricing methodology (CAPM) neglects dividend yield. To conduct a cross-sectional test using data from a large number of enterprises on a single date, **Brennan (Brennan, 1970)** modified the CAPM to account for taxes and came up with the following model to characterize the impact of dividend payout on ordinary shares return.

$$R_p = a_0 + a_1 \beta_p + a_2 Y_p + E_p$$

Where,

R_p represents holding period return on a portfolio of stocks,

β_p represents portfolio beta,

Y_p represents dividend yield, and

E_p represents error term.

In this research, researchers find that the dividend yield coefficient (a_2) is statistically positive and significant, suggesting that investors are willing to pay a bigger risk premium for dividends than for capital gains. A greater dividend yield is associated with a higher necessary rate of return and a lower market value, everything else being equal. To bypass the shortcomings of Brennan's cross-sectional investigation, the following systematic procedure was used by **Black and Scholes (Black & Scholes, 1974)** to develop a time series test.

$$R_i = \beta_0 + \beta_i (R_M - \beta_0) + \beta_1 (Y_i - Y_M) / Y_M$$

Where,

R_i represents return on security i ,

β_i represents beta of security i ,

Y_i represents dividend yield on security i ,

R_M represents return on market portfolio,

Y_M represents dividend yield on market portfolio and

β_0, β_1 represents parameters.

β_1 calculates the yield impact and β_0 calculates the zero beta return.

If an asset's beta is 0, then its returns have no relationship to the market portfolio as a whole. Due to the absence of a statistically significant relationship between dividend yield and stock returns, **Black and Scholes (1974)** were able to calculate β_1 by analyzing the historical performance of the zero-beta portfolio. Dividend yields are calculated by dividing the total dividends received by the closing stock price at the conclusion of the holding period. The informational effect of a dividend announcement is one issue that has arisen here. A larger-than-anticipated dividend announcement might lead to a fall in dividend yield if the stock price rises to reflect the payout's increased popularity. To explain the lack of agreement, **Black (Black, 1976)** compared the dividend image to a jigsaw whose parts don't quite match.

Market Price Determinants of Common Stock

Dividend and capital gain projections are often based on the company's current, historic, and projected profits. Investors evaluate companies based on how much of their earnings are shared as dividends and how much is kept in the company. The dividend hypothesis and the retained earnings hypothesis are the two main theories put out to explain the components that influence a stock's price. The former says that the dividend payout ratio is the key to understanding stock prices. The market value of a company's shares would increase if it paid out a larger dividend. Though dividends are paid out at a higher rate, the stock price will rise even if profits stay the same. Yet, the dividend hypothesis is supported by a number of reasons, such as the ones below: (a) paying dividends is a good way to lower the volatility and danger of an investment, (b) It reflects the fact that investors would rather see immediate returns than those that would come later, and (c) although dividends are seen by investors as proof of a company's ability to generate profits, this pertains to the data sent by dividend payments. As profits are raised, the retained earnings theory predicts that stock prices will follow suit. The stock price of a firm is affected by its management's decision to employ retained earnings for internal business growth rather than distribute the money from past gains. **Kumar and Mohan (1975)** utilized the following regression equation to see whether stock price was a function of dividends paid out or retained earnings.

$$P_{it} = a + bD_{it} + cR_{it}$$

Where,

P_{it} represents price of stock i at period t ,

D_{it} represents dividend per share of stock i at period t and

Rit represents retained earnings of stock i at period t.

They found that the predicted coefficients for dividends and retained profits, the 2 independent variables, are statistically equivalent. They stated that the dividend hypothesis is preferable to the retained earnings hypothesis when it comes to establishing stock prices since the T value is greater in that situation. *Nishat (Nishat, 1995)* made a concerted effort to weigh the dividend hypothesis against the retained profits hypothesis, two competing explanations for stock price movement. To examine how retained profits and dividends affect share prices in Pakistan's fastest-growing industries, he built the following model.

$$P_{it} = \alpha_0 + \alpha_1 D_{it} + \alpha_2 R_{it}$$

Where,

P_{it} represents price of stock i at period t,

D_{it} represents dividend per share of stock i at period t and

R_{it} represents retained earnings.

There are two primary reasons why the aforementioned approach might result in an inflated dividend coefficient. To begin, the connection is flawed because it incorrectly assumes that a firm's riskiness has no impact on its dividends or share price. To fix this issue, it is needed to introduce a new variable—the lag of earning price ratio—which will be used to determine how much each person's earnings price ratio deviates from the sample average within the same time period.

$$P_{it} = \beta_0 + \beta_1 D_{it} + \beta_2 R_{it} + \beta_3 [P/E]_{i(t-1)}$$

Where, $[P/E]_{i(t-1)}$ represents the price earnings ratio of the last period.

For another, several economic and accounting variables have a short-term impact on a company's reported income for a certain time. In a regression equation, dividend distribution would be favored if prices were more closely connected to ordinary than reported income. This methodology, however, may help to minimize the gap between the dividend coefficient and the retained earnings coefficient.

$$P_{it} = \lambda_0 + \lambda_1 D_{it} + \lambda_2 R_{it} + \lambda_3 P_{i(t-1)}$$

Where,

$P_{i(t-1)}$ represents the share price of the last period.

Research Methodology:

Model Description

In this study, the researcher employs a simple regression equation to analyze the active relationships between stock price and other explanatory variables, such as cash dividends and retained profits, an endeavor to shed light on the significance of dividend data.

Share values are heavily impacted by retained profits and cash dividend payments. By that measure, buying stocks might be seen as a growth-oriented strategy.

Share values are heavily impacted by retained profits and cash dividend distribution. That's evidence that stock market investments are growth-oriented. *Graham and DL Dood;(1934); Security Analysis, USA.*

This study relied on linear regression's simplest form for its analysis. The most fundamental analysis involves a regression of share prices versus retained earnings and cash dividend payment. This allowed for a very simple analysis of how share prices relate to retained earnings.

The following are the equations and variables needed to complete the research.

$$Y = a + bX + cZ$$

Where,

Y represents the value of Share Prices (Dependent Variable).

b represents the value of the coefficient x.

c represents the value of the coefficient z.

X represents the amount of Dividend Payment (Independent Variable).

Z represents the value of Retained Earnings (Independent Variable).

a represents constant.

Ideally, share prices would rise in tandem with retained earnings and dividend payments. Specifically, the stock price of a company will rise in tandem with its retained profits and dividend payments. In contrast, price volatility is more likely to be shown by companies whose profits are more volatile or who use more debt.

Data Collection

Annual reports of the firms in question and daily price quotations from the Dhaka Stock Exchange (DSE) were collected for information on dividends, retained profits, and lagged price for the period 2015-2021.

The board of directors decides on dividends at its meeting, and the shareholders approve them at the annual meeting. Any time the board makes a funding decision, it promptly notifies the relevant stock market so that accurate records can be kept and relevant information can be shared with investors and businesses.

Six fuel and power industry businesses traded on the Dhaka Stock Exchange between 2015 and 2021 are the focus of this research. Information about the sample is summarized in the table below.

Table: Summary of Sample Companies

| Serial No. | Name of the Companies of Fuel & Power Industry |
|------------|--|
| 01 | Dhaka Electric Supply Company Ltd. (DESCO) |
| 02 | Jamuna Oil Company Ltd. (JAMUNAOIL) |
| 03 | Titas Gas Transmission and Distribution Company Limited (TITASGAS) |
| 04 | Power Grid Corporation of Bangladesh Limited (POWERGRID) |
| 05 | Meghna Petroleum Limited (MPETROLEUM) |
| 06 | Khulna Power Company Ltd (KPCL) |

Sources of Data

The data collection sources are:

- i) Firms' yearly reports from the sampled companies for the time of 2015 to 2021.
- ii) Documentation of the payment of dividends, DSE and
- iii) Quotes for prices on a daily basis, DSE.

Enrollment in the study was restricted to companies where relevant information was easily available. Annual data were chosen since they allowed for a more accurate calculation of the study's parameters. Time series data are used in conjunction with statistical estimation techniques as generalized least squares to provide new insights.

Hypothesis

H0: There is no relationship between Stock Price and financial variables i.e. Retained Earnings & Dividend Payment.

H1: There is a positive relationship between Stock Price and financial variables i.e. Retained Earnings & Dividend Payment.

Analytical tools

In order to better understand the dividend information content, this article uses the Least Square (LS) approach to analyze the dynamic relationships between stock price and various financial factors, such as cash dividends and retained profits. This model quantifies how dividend and retained earnings behavior in the DSE. This article will use the statistical program Eviews to determine whether dividend payments and retained profits have any influence on stock price.

But, by calculating the "Goodness of Fit," researchers can see how well a particular sample regression line matches the data. The coefficient of determination is the "Goodness of Fit" metric. The coefficient of determination sums up how closely the sample regression line matches the data, either r^2 (in the two-variable case) or R^2 (in the case of multiple regressions). The value r^2 has two noteworthy characteristics:

1. It's a positive number that cannot be negative.
2. Its limits are $0 \leq r^2 \leq 1$. An r^2 of 1 means a perfect fit, whereas an r^2 of zero means no relationship between the dependent variable and the explanatory variable(s). (Gujarati, 1988)

Analysis and Result Preparation

Empirical Results

This section examines the relationship between dividends and retained profits, as well as the stock price behavior of selected DSE-listed businesses. Estimation for the time period under consideration has been based on time series data.

Overall Result

The following tables show the sample observations' dividends paid, stock prices, retained earnings, and earnings per share growth rates throughout the study period.

Table: Dividend Payment (DP) and year over year growth in DP of selected companies.

| Company /Year | DESCO | | JAMUNAOIL | | TITASGAS | | POWERGRID | | MPETROLEUM | | KPCL | |
|---------------|---------------|------|----------------|--------|---------------|--------|----------------|------|--------------|--------|----------------|------|
| | DP | GR | DP | GR | DP | GR | DP | GR | DP | GR | DP | GR |
| 2015 | 17210 8141 | - | 895004 196 | - | 217699 908 | - | 460912 991 | - | 113644 61 | - | 0 | - |
| 2016 | 37863 7909 | 120% | 110112 2806 | 23% | 263491 197 | 21.03% | 691369 487 | 50% | 113610 26 | -0.03% | 1264496 482 | - |
| 2017 | 39756 9804 | 5% | 110614 1783 | 0.46% | 217655 629 | -17.4% | 553094 196 | -20% | 119047 82 | 4.8% | 1987065 900 | 57% |
| 2018 | 39756 9804 | 0% | 121247 3135 | 9.61% | 217426 204 | -0.11% | 783552 085 | 42% | 151523 75 | 27.3% | 1083854 127 | -45% |
| 2019 | 39756 9804 | 0% | 143131 248 | -88.2% | 217383 388 | -0.02% | 921825 982 | 18% | 162310 05 | 7.12% | 1589652 716 | 46% |
| 2020 | 47708 3765 | 20% | 139691 7352 | 876% | 217420 156 | 0.02% | 142545 3982 | 55% | 162346 91 | 0.02% | 1351200 000 | -15% |
| 2021 | 39756 9804 | -17% | 135228 3585 | -3.20% | 217521 176 | 0.05% | 142545 3982 | 0% | 162336 48 | 0.006% | 1490775 64 | -89% |

Source: Annual reports of the selected companies.

Trend of Dividend Payment of Selected Companies

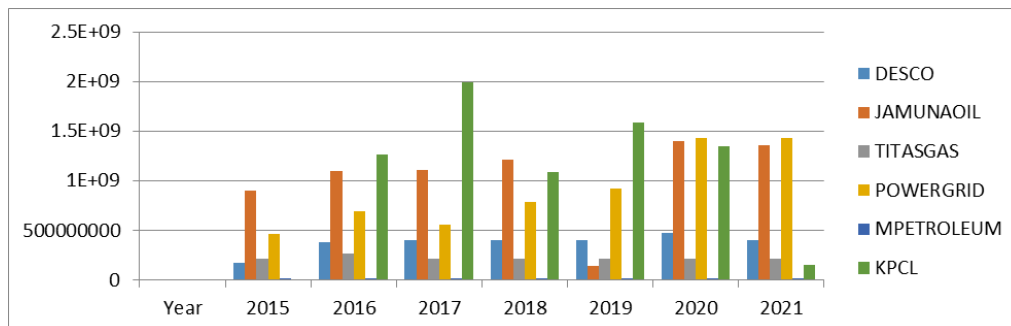


Table: Dividend Per Share (DPS) and year over year growth in DPS of selected companies.

| Company /Year | DESCO | | JAMUNAOIL | | TITASGAS | | POWERGRID | | MPETROLEUM | | KPCL | |
|---------------|-------|--------|-----------|-------|----------|--------|-----------|-------|------------|------|------------|------|
| | DPS | GR | DPS | GR | DPS | GR | DPS | GR | DPS | GR | DPS | GR |
| 2015 | 15% | - | 100% | - | 22% | - | 15% | - | 10.50 % | - | 0% | - |
| 2016 | 10% | -33.3% | 100% | 0% | 22% | 0% | 12% | -20% | 10.50 % | 0% | 75% | 75% |
| 2017 | 10% | 0% | 110% | 10% | 25% | 13.6% | 15% | 25% | 11% | 4.8% | 55% | -27% |
| 2018 | 10% | 0% | 130% | 18.2% | 26% | 4% | 17% | 13.3% | 14% | 27% | 30% | -45% |
| 2019 | 12% | 20% | 130% | 0% | 26% | 0% | 20% | 17.6% | 15% | 7.1% | 40% | 33% |
| 2020 | 10% | -16.7% | 120% | -7.7% | 22% | -15.4% | 20% | 0% | 15% | 0% | 34% | -15% |
| 2021 | 10% | 0% | 120% | 0% | 10% | -54.5% | 20% | 0% | 15% | 0% | 12.50 % | -63% |

Source: Annual reports of the selected companies.

Trend of Dividend Per Share (DPS) of Selected Companies

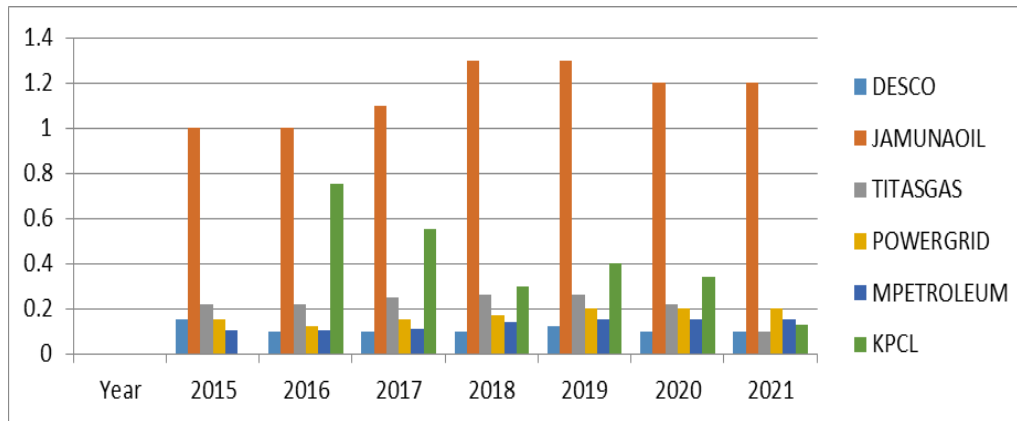


Table: Retained Earnings (RE) and year over year growth in Retained Earnings of selected companies.

| Company /Year | DESCO | | JAMUNAOIL | | TITASGAS | | POWERGRID | | MPETROLEUM | | KPCL | |
|---------------|----------------|--------|----------------|--------|-----------------|------|-----------------|-------|----------------|-------|----------------|--------|
| | RE | GR | RE | GR | RE | GR | RE | GR | RE | GR | RE | GR |
| 2015 | 751951 4123 | - | 2503026 263 | - | 4475874 8141 | - | 4567962 643 | - | 2076228 000 | - | 526213 6974 | - |
| 2016 | 795135 3689 | 5.74% | 1857801 193 | -25.8% | 5056883 0801 | 13% | 5180109 761 | 13.4% | 1890183 000 | -9% | 495977 3972 | -5.7% |
| 2017 | 794574 0236 | -0.07% | 1496166 032 | -19.5% | 5358742 3479 | 6% | 6380288 420 | 23.2% | 2248723 000 | 19% | 552554 7340 | 11.4% |
| 2018 | 803879 5698 | 1.17% | 1707223 762 | 14.1% | 5493797 7447 | 2.5% | 7875722 492 | 23.4% | 3662446 000 | 63% | 577036 6587 | 4.43% |
| 2019 | 870831 3659 | 8.33% | 2611283 590 | 53% | 5710958 3673 | 4% | 1094090 1160 | 38.9% | 3846561 000 | 5.03% | 604190 7023 | 4.71% |
| 2020 | 868668 2543 | -0.25% | 3177612 478 | 21.7% | 5813567 0415 | 1.8% | 1268958 0007 | 16% | 3152496 000 | -18% | 580172 6684 | -3.98% |
| 2021 | 902824 7913 | 3.93% | 3366560 358 | 5.95% | 5902344 7260 | 1.5% | 1953225 906 | -85% | 2743568 000 | -13% | 503594 880 | -91.3% |

Source: Annual reports of the selected companies.

Trend of Retained Earnings (RE) of Selected Companies

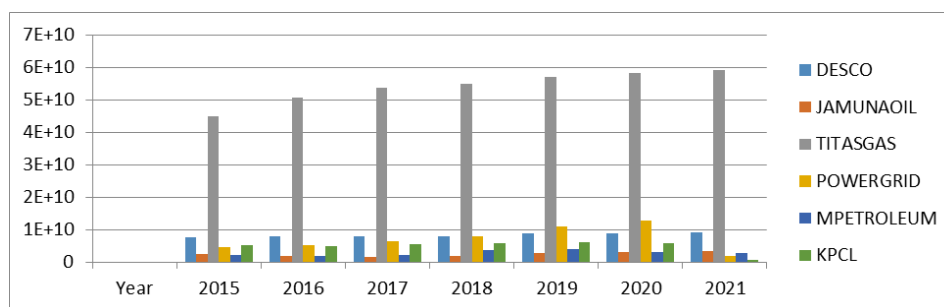


Table: Earning Per Share (EPS) and year over year growth in EPS of selected companies.

| Company /Year | DESCO | | JAMUNAOIL | | TITASGAS | | POWERGRID | | MPETROLEUM | | KPCL | |
|---------------|-------|--------|-----------|--------|----------|--------|-----------|--------|------------|-------|------|--------|
| | EPS | GR | EPS | GR | EPS | GR | EPS | GR | EPS | GR | EPS | GR |
| 2015 | 4.32 | - | 20.40 | - | 7.37 | - | 0.90 | - | 17.10 | - | 6.66 | - |
| 2016 | 1.18 | -72.7% | 17.74 | -13% | 5.12 | -30.5% | 2.66 | 195.6% | 18.80 | 9.94% | 9.82 | 47.4% |
| 2017 | 0.44 | -62.7% | 20.31 | 14.5% | 3.43 | -33% | 4.33 | 62.8% | 20.28 | 7.87% | 5.07 | -48.4% |
| 2018 | 1.27 | 188.6% | 25.45 | 25.3% | 4.70 | 37% | 4.73 | 9.24% | 33.30 | 64.2% | 6.18 | 21.9% |
| 2019 | 2.70 | 112.6% | 21.19 | -16.7% | 3.64 | -22.6% | 8.33 | 76.11% | 35.11 | 5.44% | 3.50 | -43.4% |
| 2020 | 1.15 | -57.4% | 18.13 | -14.4% | 3.50 | -3.85% | 3.43 | -58.8% | 28.45 | -19% | 3.40 | -2.86% |

| | | | | | | | | | | | | |
|------|------|-------|-------|-------|------|--------|------|-------|-------|-------|------|--------|
| 2021 | 1.86 | 61.7% | 18.24 | 0.61% | 3.21 | -8.29% | 4.74 | 38.2% | 26.07 | -8.4% | 0.87 | -74.4% |
|------|------|-------|-------|-------|------|--------|------|-------|-------|-------|------|--------|

Source: Annual reports of the selected companies.

Trend of Earning Per Share (EPS) of Selected Companies

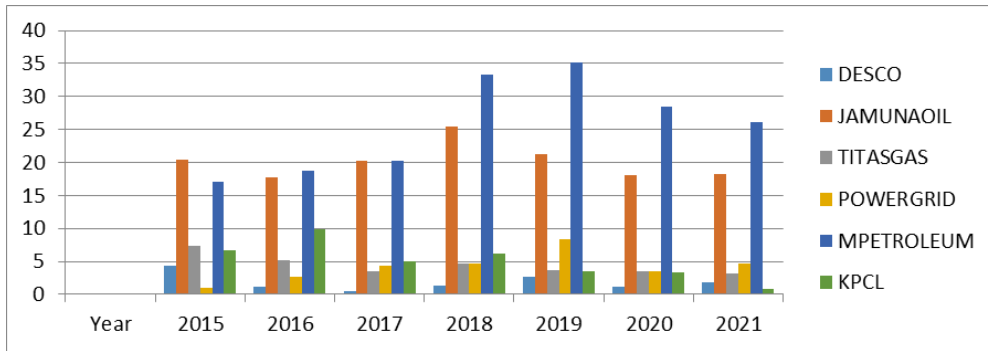
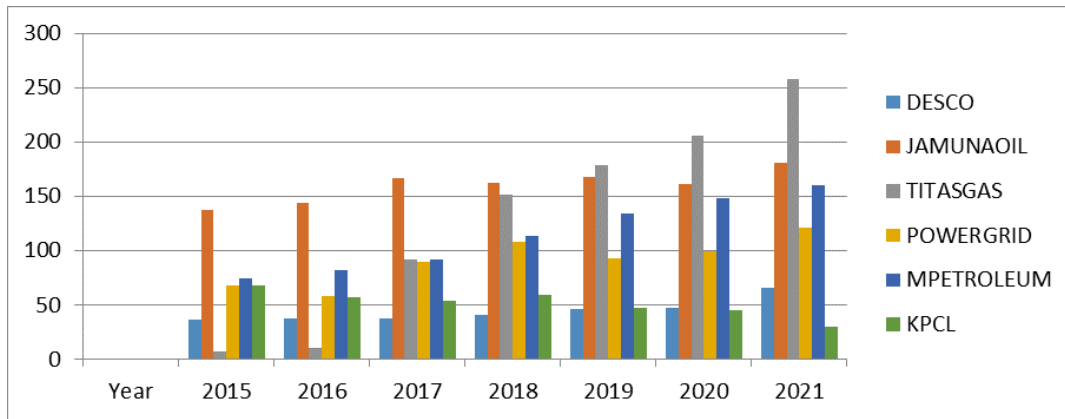


Table: Share Price and year over year growth in Share Price of selected companies.

| Company /Year | DESCO | | JAMUNAOIL | | TITASGAS | | POWERGRID | | MPETROLEUM | | KPCL | |
|---------------|-------------|-------|-------------|--------|-------------|--------|-------------|--------|-------------|-------|-------------|--------|
| | Share Price | GR | Share Price | GR | Share Price | GR | Share Price | GR | Share Price | GR | Share Price | GR |
| 2015 | 36.75 | - | 136.74 | - | 7.31 | - | 68.12 | - | 74.51 | - | 68.09 | - |
| 2016 | 37.04 | 0.79% | 143.44 | 4.9% | 9.70 | 32.7% | 58.1 | -14.7% | 81.57 | 9.5% | 56.82 | -16.6% |
| 2017 | 37.78 | 2.0% | 166.98 | 16.4% | 91.94 | 847.8% | 89.79 | 54.5% | 91.35 | 12% | 53.18 | -6.41% |
| 2018 | 40.13 | 6.22% | 162.40 | -2.74% | 151.21 | 64.5% | 108.12 | 20.4% | 113.2 | 24% | 59.30 | 11.5% |
| 2019 | 46.23 | 15.2% | 167.61 | 3.21% | 178.49 | 18.04% | 92.97 | -14% | 134.3 | 19% | 46.70 | -21.2% |
| 2020 | 46.76 | 1.15% | 161.40 | -3.7% | 205.79 | 15.3% | 99.76 | 7.3% | 148.21 | 10.4% | 45.30 | -3.0% |
| 2021 | 65.24 | 39.5% | 180.84 | 12% | 257.98 | 25.4% | 120.67 | 21% | 159.9 | 7.9% | 29.90 | -34.0% |

Source: Annual reports of the selected companies.

Trend of Share Price of Selected Companies



The correlations between the stock market's share price, dividends, and retained profits based on the data.

Dhaka Electric Supply Company Ltd. (DESCO)

Dependent Variable: Y
 Method: Least Squares
 Date: 02/09/23 Time: 10:25
 Sample: 2015 2021
 Included observations: 7

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|----------|-------------|------------|-------------|--------|
| C | -143.7126 | 21.12262 | -6.803732 | 0.0065 |
| X | -1.58E-07 | 4.14E-08 | -3.818546 | 0.0316 |

| | | | | |
|--------------------|-----------|-----------------------|----------|--------|
| Z | 3.14E-08 | 4.28E-09 | 7.333505 | 0.0052 |
| <hr/> | | | | |
| R-squared | 0.964646 | Mean dependent var | 44.27571 | |
| Adjusted R-squared | 0.929293 | S.D. dependent var | 10.14779 | |
| S.E. of regression | 2.698378 | Akaike info criterion | 5.118738 | |
| Sum squared resid | 21.84374 | Schwarz criterion | 5.087830 | |
| Log likelihood | -13.91558 | Hannan-Quinn criter. | 4.736715 | |
| F-statistic | 27.28570 | Durbin-Watson stat | 3.160059 | |
| Prob(F-statistic) | 0.011164 | | | |

The above Eviews table represents that, the share price of DESCO is positively correlated with retained earnings but is negatively correlated with dividend payment. That is, if the retained earnings increase then the stock price also increases and vice versa. And, if the dividend payment increases then the stock price of DESCO decreases & vice versa. Here the probability of retained earnings (Z) is less than 0.05 i.e. 0.0052 which means that retained earnings has positively significant connection with the stock price of DESCO. But the dividend payout has negative significant relationship with the stock price of DESCO, since the probability value of dividend (X) is 0.0316 which is less than 0.05 at 5% level of significant.

Again the probability value of F-statistic is less than 0.05 i.e. 0.011164 which means that there is relationship between stock price and financial variables i.e. dividend payments and retained earnings. Here the value of R-squared (0.964646) is close to 1 which means that the two independent variables have explained 96.4646% of the model. Here the Durbin-Watson Statistic is 3.160059 which is greater than 2. That is, there exist negative autocorrelation.

Jamuna Oil Company Ltd. (JAMUNAOIL)

Dependent Variable: Y
Method: Least Squares
Date: 02/10/23 Time: 14:41
Sample: 2015 2021
Included observations: 7

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|--------------------|-------------|-----------------------|-------------|--------|
| C | 88.22231 | 31.24212 | 2.823826 | 0.0476 |
| X | 5.84E-08 | 2.97E-08 | 1.971004 | 0.1200 |
| Z | 3.09E-10 | 9.09E-09 | 0.034052 | 0.9745 |
| <hr/> | | | | |
| R-squared | 0.576230 | Mean dependent var | 159.9157 | |
| Adjusted R-squared | 0.364345 | S.D. dependent var | 15.07686 | |
| S.E. of regression | 12.02047 | Akaike info criterion | 8.108626 | |
| Sum squared resid | 577.9666 | Schwarz criterion | 8.085445 | |
| Log likelihood | -25.38019 | Hannan-Quinn criter. | 7.822109 | |
| F-statistic | 2.719544 | Durbin-Watson stat | 2.155825 | |
| Prob(F-statistic) | 0.179581 | | | |

The above Eviews table represents that, the share price of JAMUNAOIL is positively correlated with both retained earnings and dividends. That is, if the amount of dividend payments and retained earnings increases then the stock price of JAMUNAOIL also increases and vice versa. Again, there isn't any significant relationship between dividend payment and stock price of JAMUNAOIL as their probability value is greater than 0.05 i.e. 0.1200. Also the table represents no significant relationship between retained earnings and stock price of JAMUNAOIL as their probability value is also greater than 0.05 i.e. 0.9745.

Here the probability value of F-statistic is 0.179581 which is higher than 0.05, means that there isn't any significant relationship between JAMUNAOIL stock price and financial variables i.e. dividend payments & retained earnings. The value of R-squared (0.576230) represents that the variables have explained 57.6230% of the model. Here the Durbin-Watson Statistic is 2.155825 which represents that there isn't any autocorrelation problem in the model.

Titans Gas Transmission and Distribution Company Limited (TITASGAS)

Dependent Variable: Y
Method: Least Squares

Date: 02/09/23 Time: 13:49

Sample: 2015 2021

Included observations: 7

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|--------------------|-------------|-----------------------|-------------|----------|
| C | -1067.716 | 434.0398 | -2.459950 | 0.0909 |
| X | -1.38E-06 | 6.04E-07 | -2.283386 | 0.1066 |
| Z | 2.52E-08 | 5.53E-09 | 4.569406 | 0.0197 |
| R-squared | 0.969378 | Mean dependent var | | 128.9171 |
| Adjusted R-squared | 0.938755 | S.D. dependent var | | 96.51376 |
| S.E. of regression | 23.88490 | Akaike info criterion | | 9.479929 |
| Sum squared resid | 1711.465 | Schwarz criterion | | 9.449021 |
| Log likelihood | -29.17975 | Hannan-Quinn criter. | | 9.097906 |
| F-statistic | 31.65590 | Durbin-Watson stat | | 1.142947 |
| Prob(F-statistic) | 0.009013 | | | |

The above Eviews table represents that, the share price of TITASGAS is positively correlated with retained earnings but is negatively correlated with dividend payment. That is, if the retained earnings increase then the stock price also increases and vice versa. And, if the dividend payment increases then the stock price of TITASGAS decreases & vice versa. Here the probability of retained earnings (Z) is less than 0.05 i.e. 0.0197 which means that retained earnings has positive significant relationship with the stock price of TITASGAS. The dividend payment, on the other hand, has negative non-significant relationship with the stock price of TITASGAS, since the probability value of dividend (X) is 0.1066 which is greater than 0.05 at 5% level of significant.

Again the probability value of F-statistic is less than 0.05 i.e. 0.009013 which means that there is relationship between stock price and financial variables i.e. dividend payments and retained earnings. Here the value of R-squared is close to 1 which means that the two independent variables have explained 0.969378% of the model. Here the Durbin-Watson Statistic is 1.142947 which is less than 2. That is, there exist positive autocorrelation.

Power Grid Corporation of Bangladesh Limited (POWERGRID)

Dependent Variable: Y

Method: Least Squares

Date: 02/09/23 Time: 14:22

Sample: 2015 2021

Included observations: 7

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|--------------------|-------------|-----------------------|-------------|----------|
| C | 53.24229 | 22.82631 | 2.332496 | 0.1019 |
| X | 3.45E-08 | 2.10E-08 | 1.642357 | 0.1991 |
| Z | -1.30E-09 | 2.29E-09 | -0.569300 | 0.6090 |
| R-squared | 0.618706 | Mean dependent var | | 91.07571 |
| Adjusted R-squared | 0.237411 | S.D. dependent var | | 21.83785 |
| S.E. of regression | 19.07019 | Akaike info criterion | | 9.029690 |
| Sum squared resid | 1091.017 | Schwarz criterion | | 8.998781 |
| Log likelihood | -27.60391 | Hannan-Quinn criter. | | 8.647666 |
| F-statistic | 1.622645 | Durbin-Watson stat | | 2.479301 |
| Prob(F-statistic) | 0.350291 | | | |

The above Eviews table represents that, POWERGRID's share price rises (positively correlated) with dividends and falls (negatively correlated) with retained profits. That is, if dividend payment increases then the share price of POWERGRID also increases & vice versa. Again, if the amount of retained earnings increases then the share price of POWERGRID decreases & vice versa. Here the probability value of dividend payment (0.1991) and retained earnings (0.6090) both are greater than 0.05 at 5% level of significant. That is, there isn't significant relationship between dividend payment and Power Grid share price. Furthermore, there isn't significant relationship between Power Grid's retained earnings and its share price.

Here, the probability value of F-statistic is 0.350291 which is higher than 0.05. Means that, there isn't significant relationship between shares price of POWERGRID & financial variables i.e. dividend payments and retained earnings. Here, the value of R-squared is 0.618706. This means that the variables have explained 61.8706% of the model. The Durbin-Watson Statistic is 2.479301 which are greater than 2. That means there is a negative autocorrelation problem in the model.

Meghna Petroleum Limited (MPETROLEUM)

Dependent Variable: Y
Method: Least Squares
Date: 02/09/23 Time: 14:51
Sample: 2015 2021
Included observations: 7

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|--------------------|-------------|-----------------------|-------------|----------|
| C | -96.43948 | 12.72066 | -7.581326 | 0.0048 |
| X | 1.97E-05 | 1.59E-06 | 12.38906 | 0.0011 |
| Z | -3.10E-08 | 1.61E-08 | -1.925520 | 0.1498 |
| R-squared | 0.990686 | Mean dependent var | | 114.7200 |
| Adjusted R-squared | 0.981372 | S.D. dependent var | | 33.69081 |
| S.E. of regression | 4.598247 | Akaike info criterion | | 6.184787 |
| Sum squared resid | 63.43163 | Schwarz criterion | | 6.153878 |
| Log likelihood | -17.64675 | Hannan-Quinn criter. | | 5.802764 |
| F-statistic | 106.3664 | Durbin-Watson stat | | 2.869106 |
| Prob(F-statistic) | 0.001522 | | | |

The above Eviews table represents that, the share price of MPETROLEUM is positively correlated with dividend payments and is negatively correlated with retained earnings. That is, if dividend payment increases then the share price of MPETROLEUM also increases & vice versa. Again, if the amount of retained earnings increases then the share price of MPETROLEUM decreases & vice versa. Here, the probability value of dividend payment (X) is less than 0.05 i.e. 0.0011. This means that dividend payments have a positive and significant relationship with the share price of MPETROLEUM. Again, the probability value of retained earnings (Z) is 0.1498 which is greater than 0.05 at 5% level of significant. That means there isn't any significant relationship between retained earnings and the share price of MPETROLEUM.

Here, the probability value of F-statistic is less than 0.05 i.e. 0.001522. Means that, there is relationship between shares price of MPETROLEUM and financial variables i.e. dividend payments and retained earnings. The value of R-squared (0.990686) is close to 1, which means that the variables have explained 99.0686% of the model. Here, the Durbin-Watson Statistic is 2.869106, means that there is negative autocorrelation problem in the model.

Khulna Power Company Ltd (KPCL)

Dependent Variable: Y
Method: Least Squares
Date: 02/09/23 Time: 15:24
Sample: 2015 2021
Included observations: 7

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|--------------------|-------------|-----------------------|-------------|----------|
| C | 27.08656 | 6.017040 | 4.501642 | 0.0205 |
| X | -8.25E-09 | 3.87E-09 | -2.134115 | 0.1225 |
| Z | 4.55E-09 | 1.67E-09 | 2.718172 | 0.0727 |
| R-squared | 0.901569 | Mean dependent var | | 51.32714 |
| Adjusted R-squared | 0.803138 | S.D. dependent var | | 12.21354 |
| S.E. of regression | 5.419048 | Akaike info criterion | | 6.513276 |
| Sum squared resid | 88.09823 | Schwarz criterion | | 6.482368 |
| Log likelihood | -18.79647 | Hannan-Quinn criter. | | 6.131253 |
| F-statistic | 9.159384 | Durbin-Watson stat | | 2.286425 |

| | |
|-------------------|----------|
| Prob(F-statistic) | 0.050850 |
|-------------------|----------|

The above Eviews table represents that, KPCL's share price rises (positively correlated) with retained profits and falls (negatively correlated) with dividends. Hence, KPCL's share price rises with retained profits and vice versa. Likewise, KPCL shares fall when dividends rise and rise when dividends fall. Here, the probability value of both dividend payment (X) and retained earnings (Z) is greater than 0.05 i.e. 0.1225 & 0.0727 respectively. That is, dividend payments and retained earnings have no significant relationship with KPCL's share price.

But the probability value of F-statistic is close to 0.05 i.e. 0.050850. Means that, a significant relationship exists between KPCL's share price and financial variables i.e. retained earnings and dividend payments. Here, the value of R-squared is 0.901569 which is close to 1. This means that the variables have explained 90.1569% of the model. The Durbin-Watson Statistic (2.286425) is close to 2. That means there is no autocorrelation problem in the model.

Findings & Conclusion

This investigation looks at how dividends and retained profits affect the stock prices of DSE-affiliated firms. As such, this study looked at the results of various other empirical studies that correlated stock prices with dividends and retained profits. There was a lot of debate and muddled thinking about the significance of dividends vs. retained profits in this research, which ultimately contributed to higher stock prices. This research represents how dividends and retained earnings affect DSE stock prices for selected corporations.

The results indicate that the combined influence of dividends and retained profits on Power Generation Company's share price on the DSE is negligible. The dividend payout and retained profits are two independent variables that have been examined, but no substantial association has been established between the share price and these factors.

When the research looked at the relationships between companies, it found a somewhat different picture. When both dividends and retained profits are included as explanatory variables, the dividend effect on stock prices may be larger in certain businesses than the retained earnings effect. Sometimes the effect of dividends is similar to that of retained profits, and sometimes the effect of retained earnings is better. The dividend payment and retained profits of these three corporations were determined to have no appreciable effect on the stock prices of the respective companies.

Before paying shareholders, the issuing corporation must publish the dividend amount and date. In addition, the ex-dividend date is made known, which is the last day on which shares might be purchased with the dividend still intact. The "date of record" refers to the day on which the company completes its yearly audit of its list of shareholders. The date of record is usually set two trading days before this date. Stocks often get more attention from prospective purchasers after a dividend announcement. Investors are willing to pay more for shares prior to the ex-dividend period so that they may collect the dividend. As a result, the price of a share of stock rises on the trading days before its ex-dividend date. The exchange decreases the stock price by the dividend on the ex-dividend period since new investors are hesitant to pay a premium. Yet if investor optimism is strong just prior to the ex-dividend period, the stock price may climb more than the dividend itself, causing a net gain despite the mandatory reduction. Given the day-to-day fluctuations of trading, a little dividend reduction may go unnoticed. To get dividend payments, many investors buy and sell equities at certain intervals. Several traders purchase shares prior to the ex-dividend period in hopes of disposing them shortly after the record date, a strategy that, if done successfully, may result in a handsome profit.

Still, it's possible to draw the conclusion that dividends and retained profits both have a major role in determining share price. But, in case of power generation companies listed with Dhaka Stock Exchange, this impact of dividend payments and retained earnings upon determination of share price is very negligent.

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