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Determinants of Dividend Policy of Companies Listed in Dhaka Stock Exchange

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ABSTRACT

This study intends to identify the determinants of corporate dividend policy followed in Bangladesh. The study uses a firm-level panel data set of 61 companies from eight major sectors of DSE for ten years from 2008 to 2017. Pearson correlation coefficient and backward elimination method of multiple regression have been used to find out the results of the study. Pearson correlation coefficient shows mixed results for the relationship between dividend per share and ownership structure, reserve & surplus, net asset value per share, earnings per share, dividend payout ratio and dividend yield. The findings of Backward Elimination Method of Multiple Regression show that ownership structure has positive impact on dividend per share in Financial Institutions sector. Reserve & surplus has positive impact on dividend per share in Banking and Pharmaceuticals & Chemicals sectors, but negative impact in Food & Allied Product sector. Net asset value has positive impact on dividend per share in Food & Allied Product, Textile and Insurance sectors, but negative impact in Banking sector. Earnings per share has positive impact on dividend per share in Engineering sector. Dividend payout ratio has positive impact on dividend per share in Fuel & Power and Insurance sector, but negative impact in Banking sector. Dividend yield has a positive impact on dividend per share in Banking, Financial Institutions, Engineering and Fuel & Power sector. Overall, ownership structure, reserve & surplus, net asset value per share, earnings per share, dividend payout ratio and dividend yield have significant impact on dividend per share of one or more of the selected sectors under study.

Keywords: Determinants, Dividend Policy, Dhaka Stock Exchange, Impact, Backward Elimination Method

1. INTRODUCTION

The topic of corporate dividends has a long history and is tied to the development of corporate system itself. In fact, dividend policy was driven by the changing pattern of financial markets. At the beginning stages of corporate practice, managers felt the importance of dividend payments in fulfilling shareholder's expectations. Besides, dividends were viewed as the best indicator of a company's performance in the

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market in addition to a regular and reliable corporate reporting. Dividend policy is one of the most unsettled topics in contemporary corporate finance. Different studies were conducted to resolve the dividend puzzle, yet the outcomes are indecisive as to what determines the corporate dividend policy. Academics have advanced several hypothetical models detailing different factors of dividend policy.

2. PROBLEM STATEMENT

Dividend policy in the emerging markets has continued to receive attention till today in academic research due to the differences observed between developed and emerging markets as well as flimsy empirical evidence in this area (Yusuf, 2019). Some of the questions that remain unanswered include: What are the factors that determine dividend policy? Different authors have used different combinations of variables for identifying the determinants of corporate dividend policy. Significant differences in results of various studies across countries have left a huge space to investigate dividend issues in different countries. Moreover, the research work on corporate dividend policy followed in Bangladesh is not yet enough. Keeping this in mind, the study endeavors to investigate the determinants of dividend policy in the context of Bangladesh.

3. RESEARCH QUESTIONS

The above research problem leads to the following research questions:

1. What are the determinants of dividend policy followed in Bangladesh?
2. Whether different sectors have the same determinants of dividend policy?

4. OBJECTIVES OF THE STUDY

The main objective of this study is to identify the determinants of corporate dividend policy followed in Bangladesh. To achieve the main objective, following specified objectives are covered:

1. To examine the relationship between dividend per share and parameters such as ownership structure, reserve & surplus, net asset value per share, earnings per share, dividend payout ratio, dividend yield.
2. To investigate the impact of ownership structure, reserve & surplus, net asset value per share, earnings per share, dividend payout ratio and dividend yield on dividend per share.

5. REVIEW OF EMPIRICAL LITERATURE

The early attempt to explain dividend behavior of companies has been credited to Lintner (1956) who found that the major changes in earnings with existing dividend rates are the most important determinant of the firm's dividend decisions. Lintner proved that current profits and lagged dividends influence the dividend policy of companies. Subsequently, Fama and Babiak (1968) examined several alternative models for explaining dividend behavior in line with the Lintner's proposition that managers increase dividends once they are reasonably certain to maintain them permanently.[1]

Oloidi and Adeyeye (2014) examined the variables that determine dividend per share (DPS) in firms listed on the Nigerian Stock Exchange (NSE). They concluded that EPS, DPSt-1 and payout ratio are the major variables that influence the decision of the firms to increase or decrease dividend per share.[2] Wadhwa (2019) used twelve-year panel data from 2006 –2018 of BSE-500 index in India for scrutinizing the firm-level dynamics persuading the dividend decisions of companies in a developing economy. Results

revealed that profitability, risk, size, ownership, and financial leverage were found to be the major determinants of dividend policies of firms.[3] Hooshyar, Mohammadi and Valizadeh (2017) examined the factors that affect dividend policy of firms listed on Tehran Stock Exchange during the year 2009 to 2014. The findings of the study revealed that profitability, current ratio and financial leverage have a significant effect on dividend policy.[4] Baker and Powell (2012) showed that the most important determinants of dividends are the stability of earnings and the level of current and expected earnings of companies listed on the Indonesian Stock Exchange (IDX).[5]
Aggarwal and Dow (2012) reconfirmed that dividends in Japan are positively related to firm size, profitability, and investment opportunities, and negatively to firm risk.[6]

Kozul and Mihalina (2013) empirically examined the determinants of the dividend size of Croatian companies and showed that the size of dividends is significantly influenced by profitability and debt level.[7] Michaely and Roberts (2011) showed that ownership structure and incentives play major roles in formulating dividend policies.[8] Patra, Poshakwale and Ow-Yong (2012) fond that size, profitability and liquidity factors enhance the chance to pay dividends. Conversely, investment opportunities, financial leverage and business risk reduce the possibility to pay dividends of listed firms in Greece.[9]
Likitwongkajon (2019) verified the determinants of dividend payment in listed firms in the Stock Exchange of Thailand (SET). The results found that firm profitability, firm size, cash flow from operation, dividend payment and dividend yield had a positively significant effect to future dividend yield.[10] Yegon, Cheruiyot and Sang (2014) ascertained that there is a significant positive relationship between dividend policy and profitability, investments as well as earnings per share of manufacturing companies in Kenya.[11] Tanjung (2017) investigated the determinants of dividend policy in Indonesia Stock Exchange and showed that profitability, leverage, and institutional ownership have negative impact on the firm's dividend policy. On the other hand, systematic risk, firm size, and board of directors have no impact to the firm's dividend policy. [12]

Stacescu (2006) found that profitability, growth opportunities, riskiness, and price volatility are the significant determinants of dividend policy of Swiss companies. Dividend fluctuations are more closely related to previous and present rather than future net income growth.[13] Shevlin (1982) provided Australian evidence on the validity of the Lintner (1956) dividend model and suggested that corporate dividends are a function of present and previous earnings.[14] Adaoglu (2000) empirically showed that the companies listed in Istanbul Stock Exchange (ISE) follow unstable cash dividend policies and mainly EPS determines the amount of cash dividends.[15] Al-Twaijry (2007) identified that book value and cash per share significantly and positively affect both dividend per share and payout ratio of listed companies in Kuala Lumpur Stock Exchange.[16] Aivazian, Booth and Cleary (2003) found that dividends are explained by profitability, debt, and the market to book value ratio in the companies of both US as well as emerging markets.[17] Baker, Dewasiri, Yatiwelle Koralalage and Azeez (2019) found that earnings, firm size, past dividends, investment opportunities, industry impact, corporate governance, free cash flow, profitability, concentrated ownership, net working capital and investor preference are the main determinants of dividend of Sri Lankan companies.[18]
Many studies on corporate dividend policy have been conducted so far around the world, but the studies in emerging markets, particularly in Bangladesh, have been much more limited in compared to developed markets. Apart from the studies conducted in foreign context, there are some empirical evidences in the

context of Bangladesh. [19]Zaman (2015) stated that the size is not a significant determinant while profitability is one of the important determinants of dividend policy of private commercial banks in the capital market of Bangladesh (Zaman, 2012).[20] Hossain (2016) showed that dividend payout ratio is positively and significantly affected by liquidity, firm growth, previous year's dividends but are negatively affected by leverage and profitability. Firm size, firm risk and ownership structure do not have a direct influence on the dividend payments. Thus, leverage, liquidity, firm growth, previous year's dividends, and profitability are the key determinants of dividend payout of the listed private commercial banks in Bangladesh.[21] Ahmed and Muktadir-Al-Mukit (2014) found that the most significant determinants of dividend payout ratio of listed companies in Bangladesh are market to book value ratio, profitability and corporate tax.[22] Imam and Malik (2007) provided empirical evidence that companies having vast institutional ownership offer high dividend payout and companies having concentrated ownership offer less dividend payout in non-financing companies listed on Dhaka Stock Exchange.[23]

Huda and Farah (2011) showed that profitability, firm's size, retained earnings and liquidity are significantly related with stock payout and apparently related with cash payout of banks in Bangladesh.[24] Alam and Hossain (2012) found that dividend rate is negatively influenced by leverage, market capitalization, liquidity and profitability, while positively affected by growth in case of a Bangladeshi company.[25] Abu (2012) showed that dividend payout policy is determined by liquidity and current earnings of listed companies in Bangladesh.[26] Islam and Adnan (2018) observed that liquidity and present earnings are the most important determinants for the listed companies of Bangladesh in shaping their dividend policy.[27] The empirical results of the study of Mollah (2009) recommended that dividend pronouncements are mostly directed by lagged dividends and current profitability of companies listed on Dhaka Stock Exchange. Cash flow is recognized as a superior measure of the company's capability to pay dividends.[28] The findings of the study of Sadia (2018) show that previous year's dividend, firm's risk and size are statistically significant and positively related with dividend payout ratio of companies listed in Dhaka Stock Exchange.[29]

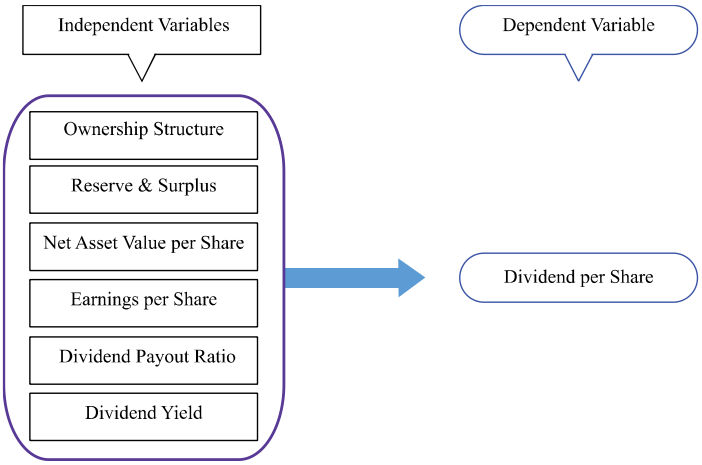
6. RESEARCH METHODOLOGY

Research methodology is a way to systematically solve the research problem (Kothari & Garg, 2019).[30] This section outlines the research method used in order to achieve the objectives outlined for the study. Specifically, the section describes the theoretical framework, research design, population and sampling design, sources of data and panel database construction, operational definitions of variables, hypotheses of the study, and data analysis techniques.

6.1 Theoretical Framework

The theoretical framework is the foundation on which the entire deductive research project is based. A good theoretical framework identifies and defines the important variables in the situation that are relevant to the problem and subsequently describes and explains the interconnections among these variables (Sekaran & Bougie, 2013).[31]

In the theoretical framework, dividend per share is taken as dependent variable in line with previous studies. Based on previous studies, six company specific observations, viz., ownership structure (OS), reserve & surplus (R&S), net asset value per share (NAVPS), earnings per share (EPS), dividend payout ratio and dividend yield (DY) are taken as the determinants of dividend policy.



6.2 Research Design

A research design is a blueprint for the collection, measurement, and analysis of data, based on the research questions of the study. Selecting a design may be complicated by the availability of a large variety of methods, techniques, procedures, protocols, and sampling plans (Cooper & Schindler, 2008).[32] The current study is causal in nature. Causal research is used to obtain evidence of the cause-and-effect (causal) relationships (Malhotra & Dash, 2016).[33]

For the study, a conceptual model has been formulated. In the Model, the dependent variable is Dividend per Share and the independent variables are Ownership Structure, Reserve & Surplus, Net Asset Value per Share, Earnings per Share, Dividend Payout Ratio and Dividend Yield. The relationship and the strength of association between variables as well as the impact of independent variables on dependent variable have been studied using correlation and multiple regression analysis.

6.3 Population and Sampling Design

The population refers to the entire group of people, events, or things of interest that the researcher wishes to investigate and wants to make inferences based on sample statistics (Sekaran & Bougie, 2013).[34] The population of the study comprises all the companies listed in Dhaka Stock Exchange. Eight major sectors on the basis of the highest number of companies listed during the study period are selected for the study. The working population of the study was 158 companies.

A sample design is a definite plan for obtaining a sample from a given population (Kothari & Garg, 2019)[35]. Proportionate Stratified Sampling technique has been used for the study.

6.3.1 Sample Selection Criteria

i. The sample period is 10 years from 2008 to 2017.

ii. The companies having no time series data are excluded from sample.

iii. The companies which are enlisted after the year 2008 or delisted from 2009 to 2017 are excluded.

Without differentiation, this study includes both dividend paying and non-dividend-paying companies that satisfy specified criteria i-iii above. The inclusion is to avoid selection bias.

6.3.2 Sample Size Determination

Sample size refers to the number of elements to be included in the study.

Yamane and Yamane (1967)[36] provide a simplified formula to calculate sample sizes.

$$\boldsymbol{n = \frac{N}{1 + N(e)^2}}$$

n = Sample Size

N = Population Size
e = Level of precision
Thus, the sample size would be

$$\boldsymbol{n = \frac{158}{1 + 158(.10)^2}}$$

$$\boldsymbol{n = 61}$$

The final sample consists of 61 companies listed in Dhaka Stock Exchange. The size of the sample from each sector is determined by proportionate allocation scheme (Chawla & Sondhi, 2016).[37]

$$n_i = n \times \frac{N_i}{N}$$

n = Sample Size
N = Population Size
n_i = Sample Size of each stratum
N_i= Population Size of each stratum
The sample companies are selected from each sector using Random Number Table.

6.4 Sources of Data and Panel Database Construction

The study is analytical and empirical in nature and makes use of secondary data. The data are taken from Dhaka Stock Exchange, Website of Dhaka Stock Exchange Limited (www.dse.com.bd), Monthly Review of Dhaka Stock Exchange Limited, Annual Reports and Websites of the sample companies. The time period of this study is 10 years from 2008 to 2017.
From the available financial data, the database was constructed with all financial data for all firms. The sample consists of 61 companies of which 12 are from banking sector, 7 from financial institutions sector, 7 from engineering sector, 5 from food & allied products sector, 4 from fuel and power sector, 8 from textile sector, 7 from pharmaceuticals and chemicals sector, and 11 from insurance sector. A balanced panel is constructed as the number of observations for each company is identical. The study includes both dividend-paying as well as non-dividend-paying firms. In the study sample of 61 companies, there are 27 companies that paid dividends throughout the study period of 10 years. Therefore, including all companies in the analysis should give the result more robustness.

6.5 Operational Definitions of Variables

Dependent and independent variables used in this study have been defined and presented here. The variable whose value is influenced or is to be predicted is called the dependent variable. The dependent variable is the variable of primary interest of the researcher (Sekaran & Bougie, 2013) [38]. The entire research process is involved in either describing this variable or investigating the probable causes of the observed effect. Any variable that can be stated as influencing or impacting the dependent variable is referred to as an independent variable (Chawla & Sondhi, 2016)[39].

6.5.1 Dependent Variable for the Model

Dividend per share is taken as dependent variable, as it is the main measure of dividend policy.

Y: Dividend per Share (DPS)

Dividend per share is the main measure of corporate dividend policies as it refers to the amount of dividend a shareholder will receive for each share held. Dividend per share is the portion of the profit after tax,

which is distributed to the shareholders for their investment bearing risk in the company (Geetha and Swaaminathan, 2015).[40] It is mandatory and strategic distribution of portion of company's taxed earnings decided by the board of directors to a class of its shareholders and is generally referred as dividend per share (DPS) (Zafar, Chaubey and Kahlid, 2012).[41]

6.5.2 Independent Variables for the Model

Although there are many potential determinants of dividend policy, six common explanatory variables are used in the present study.

X1: Ownership Structure (OS)

Several studies examined the relationship between ownership structure and dividend policy for different countries, for example, Gupta (2017) for India, Mirza and Afza (2010) for Pakistan, Maury and Pajuste (2002) for Finland, Gugler (2003) for Austria, Carvalhal-da-Silva and Leal (2003) for Brazil, Gugler and Yurtoglu (2003) for Germany, Wei, Zhang and Xiao (2003) for China, and Trojanowski (2004) for UK. Shareholding percentage of sponsors/directors/government has been considered for ownership structure in the present study. Jensen, Solberg and Zorn (1992) [42] found that high insider ownership firm chooses lower level of dividend indicating that ownership structure is a factor in determining dividend policy.

X2: Reserve & Surplus (R & S)

Reserve & Surplus (also called Retained Earnings) are found to be a crucial determinant of dividend policy. Earnings that companies keep for future growth and investment opportunities are referred to as reserve & surplus. In the US, Canada, UK, Germany, France, and Japan, the propensity to pay dividends is higher among larger, more profitable firms, and those for which retained earnings comprise a large fraction of total equity (Denis & Osobov, 2008).[43] Thus retained earnings are a major dividend representative. The tendency to distribute dividends is positively related to retained earnings (Bechmann & Raaballe, 2007).[44] On this context, reserve & surplus has been considered as one of the explanatory variables of dividend policy.

X3: Net Asset Value per Share (NAVPS)

Net asset value per share measures the amount of assets, which the company has on behalf of each equity share. A high book value per share usually indicates that the company has a good record of past performances. Net Asset Value per Share is calculated as follows:

$$\text{NAVPS} = \frac{\text{Equity Share Capital} + \text{Shareholders'Reserve}}{\text{Number of Equity Shares Outstanding}}$$

In the present study, we have considered Net Asset Value per Share (NAVPS) as an independent variable in line with previous studies (Al-Twaijry, 2007).

X4: Earnings per Share (EPS)

One of the key determinants of the dividend policy is the profitability of a company and this is measured by the EPS. It is assumed that there exists a positive relationship between EPS and a company's dividend policy. It refers to the ratio of the profit after tax of the company for any financial year after payment of preference dividend (Islam, Khan, Choudhury, Adnan, 2014).[45] Haddadin (2006)[46] found that EPS is the most statistically significant variable affecting payout ratio and found that it has a positive relationship with dividend policy. Mishra and Narender (1996)[47] analyzed the dividend polices of 39 state owned enterprises (SOEs) in India for the period 1984-85 to 1993-94. They found that EPS is a major factor in determining the dividend payout of SOEs.

X5: Dividend Payout Ratio (DPR)

Dividend Payout Ratio refers to the percentage of earnings that is paid to shareholders as dividends. It is calculated by dividing the firm's cash dividend per share by its earnings per share (Gitman & Zutter, 2015).[48] This ratio does not always indicate the proportion of current earnings paid out only as dividend since dividend is allowed to be paid out of past accumulated earnings. A dividend payout of more than 100 percent definitely indicates the payment of dividend out of past accumulated earnings. We have used dividend payout ratio as independent variable in line with previous study that examined the impact of DPR on DPS and found that DPR influences the company's decision to increase or decrease dividend per share in the Nigerian Stock Exchange (Oloidi & Adeyeye, 2014).

X6: Dividend Yield (DY)

Dividend yield is a ratio that informs shareholders of the annual amount of cash dividends distributed to common shareholders relative to the stock's market value (price) (Larson, Wild & Chiappetta, 1999).[49] The dividend yield of a stock signifies how much a company pays as dividend on its stock price.

Dividend yield is considered to be an important variable by Gupta (2017), Chesini and Staniszewska (2017), Zahir (1992), Allen and Rachim (1996), Nishat and Irfan (2003), Rashid and Rahman (2009), Nazir, Nawaz, and Gilani (2010), Suleman, Asghar, Shah, and Hamid (2011), Hussainey, Mgbame, and Chijoke-Mgbame (2011).

6.6 Hypotheses of the Study

Hypotheses can be defined as logically conjectured relationships between two or more variables expressed in the form of testable statements (Sekaran & Bougie, 2013)[50]. By testing the hypotheses and confirming the conjectured relationships, it is expected that solutions can be found to correct the problem encountered.

6.6.1 Null Hypotheses

1. H_o: There is no significant relationship between Dividend per Share and Ownership Structure of the selected sectors of Bangladesh.
2. H_o: There is no significant relationship between Dividend per Share and Reserve & Surplus of the selected sectors of Bangladesh.
3. H_o: There is no significant relationship between Dividend per Share and Net Asset Value per Share of the selected sectors of Bangladesh.
4. H_o: There is no significant relationship between Dividend per Share and Earnings per Share of the selected sectors of Bangladesh.
5. H_o: There is no significant relationship between Dividend per Share and Dividend Payout Ratio (%) of the selected sectors of Bangladesh.
6. H_o: There is no significant relationship between Dividend per Share and Dividend Yield of the selected sectors of Bangladesh.

6.6.2 Alternative Hypotheses

1. H_1: There is significant relationship between Dividend per Share and Ownership Structure of the selected sectors of Bangladesh.
2. H_1: There is significant relationship between Dividend per Share and Reserve & Surplus of the selected sectors of Bangladesh.

3. H_1: There is significant relationship between Dividend per Share and Net Asset Value per Share of the selected sectors of Bangladesh.
4. H_1: There is significant relationship between Dividend per Share and Earnings per Share of the selected sectors of Bangladesh.
5. H_1: There is significant relationship between Dividend per Share and Dividend Payout Ratio (%) of the selected sectors of Bangladesh.
6. H_1: There is significant relationship between Dividend per Share and Dividend Yield of the selected sectors of Bangladesh.

6.7 Data Analysis Techniques

Pearson Correlation and Backward Elimination Method of Multiple Regression have been used for analyzing data,

6.7.1 Correlation

Correlation measures the degree of association between two variables. Pearson correlation coefficient has been used to examine the relationship between dividend and parameters, such as, ownership structure, reserve & surplus, net asset value per share, earnings per share, dividend payout ratio and dividend yield. The correlation test has been run for each selected sector and the variables mentioned above.

6.7.2 Multiple Regression Analysis

Regression analysis is the process of developing a statistical model, which is used to predict the value of a dependent variable by at least one independent variable (Bajpai, 2010)[51]. Multiple regression analysis is a statistical technique to predict the variance in dependent variable by regressing the independent variables against it (Sekaran & Bougie, 2013)[52]. Multiple regression analysis has been used with a view to developing a regression model by which the value of the dependent variable can be predicted with the help of the independent variables. We followed backward elimination method using SPSS software. The process of backward elimination starts with the full model including all the explanatory variables. If no insignificant explanatory variable is found in the model, the process terminates with all the significant explanatory variables in the model. In cases where insignificant explanatory variables are found, the explanatory variable with the highest *p* value is dropped from the model.

Regression Model for the Present Study

$$DPS = bo + b1OS + b2\ R\&S + \ b3\ NAVPS + b4\ EPS + b5\ DPR + b6\ DY$$

Where,
DPS = Dividend per Share
bo = DPS - intercept
OS = Ownership Structure
R&S = Reserve & Surplus
NAVPS = Net Asset Value per Share
EPS = Earnings per Share
DPR= Dividend Payout Ratio
DY = Dividend Yield
b1 = Regression coefficient of OS
b2 = Regression coefficient of R&S
b3 = Regression coefficient of NAVPS
b4 = Regression coefficient of EPS

b5 = Regression coefficient of DPR
b6 = Regression coefficient of DY

7. DATA ANALYSIS, INTERPRETATION AND FINDINGS

7.1 Correlation Testing

To examine the relationship between dividend per share and certain variables like ownership structure, reserve & surplus, net asset value per share, earnings per share, dividend payout ratio and dividend yield, Karl Pearson's Correlation test was used.

Sector	Pearson Correlation	Variables					
		OS	R & S	NAVPS	EPS	DPR	DY
Banks	Correlation	0.675	0.903	0.837	-0.628	0.569	0.963
	Significant	0.032	0.000	0.003	0.052	0.086	0.000
Financial Institution	Correlation	0.897	0.436	-0.518	-0.710	0.897	0.881
	Significant	0.000	0.208	0.125	0.021	0.000	0.001
Engineering	Correlation	-0.287	0.227	0.725	0.444	0.784	0.880
	Significant	0.422	0.438	0.018	0.199	0.029	0.001
Food & Allied Product	Correlation	0.508	0.774	0.850	0.945	0.027	-0.598
	Significant	0.133	0.009	0.002	0.000	0.941	0.068
Fuel & Power	Correlation	-0.888	0.964	0.976	0.901	0.877	0.919
	Significant	0.001	0.000	0.000	0.000	0.001	0.000
Textile	Correlation	-0.113	0.156	0.795	0.687	-0.491	0.437
	Significant	0.756	0.668	0.006	0.028	0.150	0.207
Pharmaceutical & Chemical	Correlation	-0.151	0.855	0.785	0.827	0.596	0.202
	Significant	0.677	0.002	0.007	0.003	0.069	0.575
Insurance	Correlation	-0.502	0.923	0.909	-0.617	0.944	0.945
	Significant	0.140	0.000	0.000	0.058	0.000	0.000

It is found from the correlation test that dividend per share and ownership structure has a high degree of positive correlation in Banking sector at 5% level of significance and in Financial Institutions sector at 1% level of significance. Again, dividend per share and ownership structure of Fuel & Power sector has a high degree of negative correlation at 1% level of significance. On the other hand, dividend per share and ownership structure of Engineering, Food & Allied Product, Textile, Pharmaceuticals & Chemicals and Insurance sectors has no significant relationship.

There is a high degree of positive correlation between dividend per share and reserve & surplus in Banking, Food & Allied Product, Fuel & Power, Pharmaceuticals & Chemicals and Insurance sectors at 1% level of significance. On the other hand, there is no significant relationship between dividend per share and reserve & surplus of Financial Institutions, Engineering and Textile sectors.

There is a high degree of positive correlation between dividend per share and net asset value per share in Banking, Food & Allied Product, Fuel & Power, Textile, Pharmaceuticals & Chemicals and Insurance sectors at 1% level of significance and in Engineering sector at 5% level of significance. On the other

hand, there is no significant relationship between dividend per share and net asset value per share of Financial Institutions sector.

There is a high degree of positive correlation between dividend per share and earnings per share in Food & Allied Product, Fuel & Power and Pharmaceuticals & Chemicals sectors at 1% level of significance and in Financial Institutions and Textile sectors at 5% level of significance. On the other hand, there is no significant relationship between dividend per share and earnings per share of Banking, Engineering and Insurance sectors.

There is a high degree of positive correlation between dividend per share and dividend payout ratio in Financial Institutions, Fuel & Power and Insurance sectors at 1% level of significance and in Engineering sector at 5% level of significance. On the other hand, there is no significant relationship between dividend per share and dividend payout ratio of Banking, Food & Allied Product, Textile and Pharmaceuticals & Chemicals sectors.
There is a high degree of positive correlation between dividend per share and dividend yield in Banking, Financial Institutions, Engineering, Fuel & Power and Insurance sectors at 1% level of significance. On the other hand, there is no significant relationship between dividend per share and dividend yield of Food & Allied Product, Textile and Pharmaceuticals & Chemicals sectors. Summary of the findings of correlation is presented in Table 1.

H_0	***ACCEPT/REJECT***							
	Banks	***Financial Institutions***	***Engineering***	***Food & Allied***	***Fuel & Power***	***Textile***	***Pharma***	***Insurance***
No relationship between DPS and OS	Reject	Reject	Accept	Accept	Reject	Accept	Accept	Accept
No relationship between DPS and R&S	Reject	Accept	Accept	Reject	Reject	Accept	Reject	Reject
No relationship between DPS and NAVPS	Reject	Accept	Reject	Reject	Reject	Reject	Reject	Reject
No relationship between DPS and EPS	Accept	Reject	Accept	Reject	Reject	Reject	Reject	Accept

No relationship between DPS and DPR	Accept	Reject	Reject	Accept	Reject	Accept	Accept	Reject
No relationship between DPS and DY	Reject	Reject	Reject	Accept	Reject	Accept	Accept	Reject

Table 1: Summary Results of Correlation

6.2 Multiple Regression

Backward elimination method of multiple regression has been used to investigate the impact of six explanatory variables such as ownership structure, reserve & surplus, net asset value per share, earnings per share, dividend payout ratio and dividend yield on dividend per share with a view to identifying the determinants of dividend policy for each of the selected sectors.

1. Banking Sector

Sector	**SPSS Output**										
Banks	Model Summery	R		R Square		Adjusted R Square					
		.999		.997		.995					
	Anova	F		Significance							
		450.110		.000							
	Coefficients	Constant	Sig.	R & S	Sig.	NAVPS	Sig.	DPR	Sig.	DY	Sig.
		1.305	.012	.000	.001	-.069	.020	-.005	.001	.090	.000

Statistical Inference

The correlation coefficient (R) of .999 in the Model Summary indicates that there is a strong positive relationship between the variables. The coefficient of determination (R Square) of .997 denotes that 99.7% of variations in DPS are explained by DY, DPR, R&S and NAVPS. Therefore, only .3% of variations are for factors outside the model. The Adjusted R square of 99.5 indicates that in actuality, 99.5% of variations in DPS are explained by DY, DPR, R&S and NAVPS.

The ANOVA table shows that the regression model has fitted the data well and overall regression model is statistically significant to predict the dependent variable (as the value of F-statistic 450.110 is significant at .000, which is less than the significance level of 1%).

The Coefficients table exhibits the backward elimination regression model produced using SPSS for Banking sector. The process of backward elimination started with all the six explanatory variables in the model. The backward elimination process is left with four explanatory variables – R&S, NAVPS, DPR and DY. So, the regression equation is:

$$DPS = 1.305 + .000\ R\ \&\ S - .069\ NAVPS - .005\ DPR + .090\ DY$$

2. Financial Institutions Sector

Sector	**SPSS Output**						
Financial Institutions	Model Summery	R		R Square		Adjusted R Square	
		.960		.922		.899	
	Anova	F		Significance			
		41.198		.000			
	Coefficients	Constant	Sig.	OS	Sig.	DY	Sig.
		-3.110	.024	.084	.009	.200	.014

Statistical Inference

The correlation coefficient (R) of .960 in the Model Summary indicates that there is a strong positive relationship between the variables. The coefficient of determination (R Square) of .922 denotes that 92.2% of variations in DPS are explained by DY and OS. Therefore, only 7.8% of variations are for factors outside the model. The Adjusted R square of .899 indicates that in actuality, 89.9% of variations in DPS are explained by DY and OS.

The ANOVA table shows that the regression model has fitted the data well and overall regression model is statistically significant to predict the dependent variable (as the value of F-statistic 41.198 is significant at .000, which is less than the significance level of 1%).

The Coefficients table exhibits the backward elimination regression model produced using SPSS for Financial Institutions sector. The process of backward elimination started with all the six explanatory variables in the model. The backward elimination process is left with two explanatory variables – OS and DY. So, the regression equation is:

$$DPS = -3.110 + .084OS + .200DY$$

3. Engineering Sector

Sector	**SPSS Output**						
Engineering	Model Summery	R		R Square		Adjusted R Square	
		.985		.970		.962	
	Anova	F		Significance			
		113.915		.000			
	Coefficients	Constant	Sig.	EPS	Sig.	DY	Sig.
		-6.179	.000	1.077	.000	2.344	.000

Statistical Inference

The correlation coefficient (R) of .985 in the Model Summary indicates that there is a strong positive relationship between the variables. The coefficient of determination (R Square) of .970 denotes that 97% of variations in DPS are explained by DY and EPS. Therefore, only 3% of variations are for factors outside

the model. The Adjusted R square of .962 indicates that in actuality, 96.2% of variations in DPS are explained by DY and EPS.

The ANOVA table shows that the regression model has fitted the data well and overall regression model is statistically significant to predict the dependent variable (as the value of F-statistic 113.915 is significant at .000, which is less than the significance level of 1%).

The Coefficients table exhibits the backward elimination regression model produced using SPSS for Engineering sector. The process of backward elimination started with all the six explanatory variables in the model. The backward elimination process is left with two explanatory variables – EPS and DY. So, the regression equation is:

$$DPS = -6.179 + 1.077EPS + 2.344DY$$

4. Food & Allied Product Sector

Sector	**SPSS Output**						
Food & Allied Product	Model Summery	R		R Square		Adjusted R Square	
		.970		.940		.923	
	Anova	F		Significance			
		54.847		.000			
	Coefficients	Constant	Sig.	R & S	Sig.	NAVPS	Sig.
		-4.291	.071	-.006	.002	.334	.000

Statistical Inference

The correlation coefficient (R) of .970 in the Model Summary indicates that there is a strong positive relationship between the variables. The coefficient of determination (R Square) of .940 denotes that 94% of variations in DPS are explained by R&S and NAVPS. Therefore, only 6% of variations are for factors outside the model. The Adjusted R square of .923 indicates that in actuality, 92.3% of variations in DPS are explained by R&S and NAVPS.

The ANOVA table shows that the regression model has fitted the data well and overall regression model is statistically significant to predict the dependent variable (as the value of F-statistic 54.847 is significant at .000, which is less than the significance level of 1%).

The Coefficients table exhibits the backward elimination regression model produced using SPSS for Food & Allied Product sector. The process of backward elimination started with all the six explanatory variables in the model. The backward elimination process is left with two explanatory variables – R&S and NAVPS. So, the regression equation is:

$$DPS = -4.291 - 0.006\ R\ \&\ S + .334\ NAVPS$$

5. Fuel & Power Sector

Fuel & Power	Model Summery	R	R Square	Adjusted R Square
		0.972	0.945	0.929
	Anova	F	Significance	
		60.128	0.000	

	Coefficients	Constant	Sig.	DPR	Sig.	DY	Sig.
		-0.501	0.377	0.054	0.009	1.156	0.002

Statistical Inference

The correlation coefficient (R) of .972 in the Model Summary indicates that there is a strong positive relationship between the variables. The coefficient of determination (R Square) of .945 denotes that 94.5% of variations in DPS are explained by DY and DPR. Therefore, only 5.5% of variations are for factors outside the model. The Adjusted R square of .929 indicates that in actuality, 92.9% of variations in DPS are explained by DY and DPR.

The ANOVA table shows that the regression model has fitted the data well and overall regression model is statistically significant to predict the dependent variable (as the value of F-statistic 60.128 is significant at .000, which is less than the significance level of 1%).

The Coefficients table exhibits the backward elimination regression model produced using SPSS for Fuel & Power sector. The process of backward elimination started with all the six explanatory variables in the model. It is evident that insignificant explanatory variable, NAVPS, with the highest *p* value of .806 is dropped from the model in the very first stage. The process continues until all the explanatory variables left in the model have significant *p* value. We see that the backward elimination process is left with two explanatory variables – DPR and DY. So, the regression equation is:

$$DPS = -.501 + .054DPR + 1.156DY$$

6. Textile Sector

Textile	Model Summery	R		R Square		Adjusted R Square
		0.795		0.632		0.586
	Anova	F		Significance		
		13.763		0.006		
	Coefficients	Constant	Sig.	NAVPS	Sig.	
		0.585	0.044	0.014	0.006	

Statistical Inference

The correlation coefficient (R) of .795 in the Model Summary indicates that there is a strong positive relationship between the variables. The coefficient of determination (R Square) of .632 denotes that 63.2% of variations in DPS are explained by NAVPS. Therefore, 36.8% of variations are for factors outside the model. The Adjusted R square of .586 indicates that in actuality, 58.6% of variations in DPS are explained by NAVPS.

The ANOVA table shows that the regression model has fitted the data well and overall regression model is statistically significant to predict the dependent variable (as the value of F-statistic 13.763 is significant at .006, which is less than the significance level of 1%).

The Coefficients table exhibits the backward elimination regression model produced using SPSS for Textile sector. The process of backward elimination started with all the six explanatory variables in the model. It is evident that insignificant explanatory variable, DPR, with the highest *p* value of .871 is dropped from the model in the very first stage. The process continues until all the explanatory variables left in the model have significant *p* value. We see that the backward elimination process is left with one explanatory variable – NAVPS. So, the regression equation is:

$$DPS = .585 + .014NAVPS$$

7. Pharmaceuticals & Chemicals Sector

Pharmaceuticals & Chemicals	Model Summery	R		R Square		Adjusted R Square
		0.855		0.731		0.697
	ANOVA	F		Significance		
		21.710		0.002		
	Coefficients	Constant	Sig.	R & S	Sig.	
		4.818	0.080	0.004	0.002	

Statistical Inference

The correlation coefficient (R) of .855 in the Model Summary indicates that there is a strong positive relationship between the variables. The coefficient of determination (R Square) of .731 denotes that 73.1% of variations in DPS are explained by R&S. Therefore, only 26.9% of variations are for factors outside the model. The Adjusted R square of .697 indicates that in actuality, 69.7% of variations in DPS are explained by R&S.

The ANOVA table shows that the regression model has fitted the data well and overall regression model is statistically significant to predict the dependent variable (as the value of F-statistic 21.710 is significant at .002, which is less than the significance level of 1%).

The Coefficients table exhibits the backward elimination regression model produced using SPSS for Pharmaceuticals & Chemicals sector. The process of backward elimination started with all the six explanatory variables in the model. It is evident that insignificant explanatory variable, Ownership Structure, with the highest *p* value of .574 is dropped from the model in the very first stage. The process continues until all the explanatory variables left in the model have significant *p* value. We see that the backward elimination process is left with one explanatory variable – R&S. So, the regression equation is:

$$DPS = 4.818 + .004R\&S$$

8. Insurance Sector

Insurance	Model Summery	R		R Square		Adjusted R Square	
		0.976		0.953		0.939	
	Anova	F		Significance			
		70.600		0.000			
	Coefficients	Constant	Sig.	NAVPS	Sig.	DPR	Sig.
		-0.587	0.112	0.041	0.019	0.009	0.003

Statistical Inference

The correlation coefficient (R) of .976 in the Model Summary indicates that there is a strong positive relationship between the variables. The coefficient of determination (R Square) of .953 denotes that 95.3% of variations in DPS are explained by NAVPS and DPR. Therefore, only 4.7% of variations are for factors outside the model. The Adjusted R square of .939 indicates that in actuality, 93.9% of variations in DPS are explained by NAVPS and DPR.

The ANOVA table shows that the regression model has fitted the data well and overall regression model is statistically significant to predict the dependent variable (as the value of F-statistic 70.600 is significant at .000, which is less than the significance level of 1%).

The Coefficients table exhibits the backward elimination regression model produced using SPSS for Insurance sector. The process of backward elimination started with all the six explanatory variables in the model. It is evident that insignificant explanatory variable, Ownership Structure, with the highest *p* value of 0.822 is dropped from the model in the very first stage. The process continues until all the explanatory variables left in the model have significant *p* value. We see that the backward elimination process is left with two explanatory variables – NAVPS and DPR. So, the regression equation is:

$$DPS = -.587 + .041NAVPS + .009DPR$$

8. Conclusion

The study examined the variables determining dividend per share of the firms of selected eight sectors listed in DSE. Six determinants viz., Ownership Structure, Reserve & Surplus, Net Asset Value per Share, Earnings per Share, Dividend Payout Ratio, Dividend Yield have been employed and Backward Elimination method of Multiple Regression was used. The results show that reserve & surplus and dividend yield have significant positive impact on dividend per share in Banking sector. On the other hand, net asset value per share and dividend payout ratio have significant negative impact on dividend per share. Ownership structure and dividend yield have significant positive impact on dividend per share in Financial Institutions sector. In Engineering sector, earnings per share and dividend yield have significant positive impact on dividend per share. In Food & Allied Product sector, reserve & surplus has a significant negative impact and net asset value has a significant positive impact on dividend per share. Dividend payout ratio and dividend yield of Fuel & Power sector have significant positive impact on dividend per share. Net asset value per share has a significant positive impact on dividend per share in Textile sector. Reserve & surplus of Pharmaceuticals & Chemicals sector has a significant positive impact on dividend per share. Lastly, net asset value per share and dividend payout ratio have significant positive impact on dividend per share in Insurance sector. Consequently, the major determinants of dividend policy of firms listed in DSE are dividend yield, net asset value per share, reserve & surplus, dividend payout ratio, ownership structure and earnings per share.

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