Determinants of Divided Policy: Study on Banking Sector of Bangladesh

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ABSTRACT

A firm considers various factors when approaching a dividend policy decision. To analyze the determinants of dividend policy in the banking of Bangladesh, it has taken the data of various financial indicators of sample banks. The pooled data regression model is used for inferring the result. The result shows that the significant determinants are retained earnings to equity, size, lagged DPR. The decision maker, investors and other stakeholders should follow these findings.

Key words: *Pooled data regression model, EPS, DPR, MM model, Lintner model.*

1. Introduction

Dividend may be defined as the distribution of created value to the shareholders. It may be form of 'Cash Dividend' or through distribution of stocks of the company which is known as 'Stock Dividend'. Dividend policy may be defined as the trade-off between the magnitude of retained earnings and distributed cash or securities. Dividend decision should not merely be taken to be a decision of appropriation of profits to the shareholders. There are several complex issues in it. As such the factors influencing the dividend decisions have always been put under scanner by the experts and researchers in the field of financial management. Dividend payment of a company is looked upon differently by

different sets of people associated with the company. For the investors, dividends are not merely means of regular earnings but also an important input for determining the worth and credential of the firm. For managers, dividend payment might well determine the level of investment in profitable investment projects. Lenders look at it carefully because they feel that the more the dividend payment, the less will be the amount available for servicing and redemption of their claims.

Corporate dividend behaviour is looked upon in many ways by the experts in the area of financial literature. Several theories evolved explaining corporate dividend behaviour. One such theory is known as 'Signaling Theory'. According to this theory, a firm uses dividend policy as a

mechanism to signal outsiders regarding the stability and growth prospect of the firm. Aharony and Swary (1980), Asquith and Mullins (1983) etc. are the proponents of the signaling theory of dividend decision. However, recent studies have not supported this hypothesized relationship between dividend changes and future earnings (e.g., De Angelo, De Angelo and Skinner (1996), Benartzi, Michaely and Thaler (1997)). Another theory in respect of corporate dividend policy goes by the name of 'Incumbency Rent Theory'. Fudenberg and Tirole (1995) are the proponents of this theory. According to this theory if managers enjoy private benefit from being in control, they individually and rationally, smooth dividends. So, in bad times, they pay out too much dividends to lengthen their tenure and in good times, the managers are not to be worried about their tenure in office and naturally opt for lower dividend payment. Again, there is the 'Agency Theory' of dividend payment. According to this theory, dividend policies address agency problems between corporate insiders and outside shareholders. This theory suggests that, unless profits are paid out to shareholders, they may be diverted by the insiders for personal use or committed to unprofitable projects that provide private benefits for the insiders. As a consequence, outside shareholders have a preference of dividends over retained earnings. There is still another theory in the name of 'Tax Clientele Theory'. This theory is based on comparative tax treatment associated with cash received on account of current dividend and cash to be received in the future as capital gains arising out of change in share price. This theory uses the relative tax advantage of paying dividend now or retaining the excess cash for future capital gains in explaining the dividend behaviour of firms. This theory suggests that the tax on dividend (i.e., tax on current income) is greater than or equal to the tax on capital gains (i. e., tax on future income). Again, tax on dividend is to be paid now while tax on capital gains is to be paid in future. Thus, according to this theory the optimal dividend policy is no or very low dividend payment. Brennan (1970), De Angelo (1991), etc. are the proponents of this theory of dividend decision. Even after such a long period of time since corporate dividend behaviour emerged as one of the well-researched areas in financial management, dividend decision is still one of the thorniest puzzle in corporate finance. Least to say, factors affecting such a decision remain to be one of the areas where academicians and researchers are introspecting and have to do a lot. In this backdrop, the present study looks into the pattern of dividend payments in Bangladeshi context and analyzes the factors determining such payment of dividends.

2. Literature Review

The dividend payout ratio indicates the percentage of profits distributed by the company among shareholders out of the net profits, or what remains after subtracting all costs (e.g., depreciation,

interest, and taxes) from a company's revenues. Most of the previous studies that investigated the impact of agency theory and transaction cost theory employed dividend payout ratios as a determinant of dividend in lieu of dividend per share and dividend yield (Rozeff, 1982; Lloyd,1985; Jensen et al., 1992; Dempsey and Laber, 1992; Alli et al., 1993; Moh'd et al., 1995; Holder et al., 1998; Chen et al., 1999; Saxena, 1999; Mollah et al., 2002; Manos, 2002; Travlos, 2002). .

According to Pandey (2001), past dividend (DPR_{t-1}) paid by the companies is highly significant to the current dividend payout ratios for all industries in the Kuala Lumpur Stock Exchange (KLSE). Generally, the higher coefficients and associated t-statistics of DPR_{t-1} in the research imply the greater importance of past dividend in deciding the dividend payment. His research is also proven with strong evidence that the management of Malaysian companies always consider past dividend as a more important benchmark for deciding the current dividend payment. Previous year's dividend payment (LDPR) have been regarded as the primary indicator of a firm's capacity to pay dividends (Lintner, 1956), because it is assumed that the management will maintain a stable dividend policy. Furthermore, the information asymmetry hypothesis assumes that dividend policy is "sticky" or shows a tendency to remain at the level of previous dividends (Baskin, 1989). Ahmed and Javid (2009) examined the dynamics and determinants of dividend

payout policy of 320 non-financial firms. The results consistently support that firms rely on both current earnings per share and past dividend to set their dividend payments. The positive relationship of dividend payout ratio (DPR) with the lagged dividend payout ratio is expected.

The decision to pay dividends starts with profits. Therefore, it is logical to consider profitability as a threshold factor, and the level of profitability as one of the most important factors that may influence firms' dividend decisions. The theory suggests that dividends are usually paid out of the annual profits, which represents the ability of the firm to pay dividends. Thus, firms incurring losses are unlikely to pay dividends. In his classic study, Lintner (1956) found that a firm's net earnings are the critical determinant of dividend changes. Furthermore, several studies have documented a positive relationship between profitability and dividend payouts (Jensen et al, 1992, Han et al., 1999, and Fama and French, 2002). Evidence from emerging markets Al-Malkawi also supports the proposition that profitability is one of the most important factors that determines dividend policy (see, for instance, Adaoglu, 2000, Pandey, 2001, and Aivazian et al., 2003). The positive relationship of dividend payout ratio (DPR) with the Earnings per share is expected.

A firm's cash flow is a good measure of the firm's liquidity and it is very important to compare a firm's liquidity position in relation to its dividend payment. According

to Amidu and Abor (2006), cash dividend distribution does not only depends on the profitability of firms but also depends on the free cash flow which is the amount of operating cash flow left over after the payment for capital expenditures. The empirical results of this study indicate a significantly positive relationship between cash flow and dividend payout ratios and thus the liquidity or cash-flow position can be considered as an important determinant of the dividend payout ratio. Besides that, Chay and Suh (2005) also consider cash flow as a determinant of dividend payments where firms facing high levels of cash flow uncertainty are likely to pay low dividends fearing cash shortfalls in the future. The positive relationship of dividend payout ratio (DPR) with the cash flow is expected.

A firm which has high growth will have greater need for external financing and thus they may be motivated to establish a good reputation with stockholders through higher dividend payout in order to insure access to external equity that can capitalize the firm (LaPorta, Silanes, Schliefer & Vishny, 2000). However, the research conducted by Amidu and Abor (2006) also stated that growth in sales were found to have statistically significant and negative associates with dividend payout ratios. According to them, growth in sales is used as proxies for the firm's future prospects since growing firms require more funds in order to finance their growth and therefore would typically retain greater proportion of their earnings by paying low dividend.

In addition, Jeong (2008) also supported Amidu and Abor where sales growth is expected to be negatively related to the degree of dividend smoothing in term of dividend payout.

Eddy and Seifert (1988), Jensen et al. (1992), Redding (1997), and Fama and French (2000) indicated that large firms distribute a higher amount of their net profits as cash dividends, than do small firms. Several studies have tested the impact of firm size on the dividend. Lloyd et al. (1985) were among the first to modify Rozeff's model by adding "firm size" as an additional variable. They considered it an important explanatory variable, as large companies are more likely to increase their dividend payouts to decrease agency costs. Their findings support Jensen and Meckling's (1976) argument, that agency costs are associated with firm size. They were of the view that for large firms, widely spread ownership has a greater bargaining control, which, in turn, increases agency costs. Furthermore, Sawicki (2005) illustrated that dividend payouts can help to indirectly monitor the performance of managers in large firms. That is, in large firms, information asymmetry increases due to ownership dispersion, decreasing the shareholders' ability to monitor the internal and external activities of the firm, resulting in the inefficient control by management. Paying large dividends can be a solution for such a problem because large dividends lead to an increase in the need for external financing, and the need for external financing leads to an increase in the

monitoring of large firms, because of the existence of creditors. Other studies related the positive association between dividends and firm size to transaction costs. For example, Holder et al. (1998) revealed that larger firms have better access to capital markets and find it easier to raise funds at lower costs, allowing them to pay higher dividends to shareholders. This demonstrates a positive association between dividend payouts and firm size. The positive relationship between dividend payout policy and firm size is also supported by a growing number of other studies (, Eddy and Seifert, 1988; Jensen et al., 1992; Redding, 1997; Holder et al., 1998; Fama and French, 2000; Manos, 2002; Mollah 2002; Travlos et al., 2002; Al-Malkawi, 2007). The positive relationship of dividend payout ratio (DPR) with the firm size is expected.

A firm may have adequate earnings to declare dividends, but it may not have sufficient cash to pay the same. The liquidity position of a company is expected to be positively related to dividend payment. Current ratio and quick ratio has been used as proxy to measure liquidity position of the company by various researchers. Amidu and Abor (2006) found a positive relationship between cash flow and dividend payout ratios. Based on the findings of the studies, it can be speculated that there is a positive relationship between the liquidity and the dividend payout ratio.

In a modern corporate environment where there is a large separation between ownership and management, conflicts of interest can arise between managers, inside owners (controlling shareholders), and outside shareholders, such as minority shareholders. Referring to this problem, Jensen and Meckling (1976) describe the firm as a nexus of contracting relationships among individuals. However, when the manager makes a decision, it tends to be in favour of the agent, rather than of the firm. La Porta et al. (2000) illustrated that managers may take advantage of their authority to benefit themselves by diverting firm assets to themselves through theft, excessive salaries or sales of assets at favourable prices to themselves. Accordingly, the ownership structure in large firms may influence dividends and other financial policies (Desmetz, 1983; Desmetz and Lehn, 1985; Shleifer and Vishny, 1986; Morck et al., 1988; Schooley and Barney,1994; Fluck,1999; La Porta 2000; Gugler and Yurtoglu, 2003). Several studies have suggested that dividend payouts can play a useful role in reducing the conflict between inside and outside owners. When insider owners pay cash dividends, they return corporate earnings to investors and can no longer use these earnings to benefit themselves (La Porta et al., 2000).

A growing number of studies have found that the level of financial leverage negatively affects dividend policy (Jensen et al., 1992; Agrawal and Jayaraman, 1994; Crutchley and Hansen, 1989; Faccio et al., 2001; Gugler and Yurtoglu, 2003; Al-Malkawi, 2005). Their studies

inferred that highly levered firms look forward to maintaining their internal cash flow to fulfill duties, instead of distributing available cash to shareholders and protect their creditors. However, Mollah et al. (2001) examined an emerging market and found a direct relationship between financial leverage and debt-burden level that increases transaction costs. Thus, firms with high leverage ratios have high transaction costs, and are in a weak position to pay higher dividends to avoid the cost of external financing. To analyze the extent to which debt can affect dividend payouts, this study employed the financial leverage ratio, or ratio of liabilities (total short-term and long term debt) to total shareholders' equity. The negative relationship of dividend payout ratio (DPR) with the leverage is expected.

Several studies have been used to measure the beta value, as a proxy for the systematic risk where beta measures the stock's volatility in relation to the market (Rozeff, 1982; Lloyd et al., 1985; Alli et al., 1993; Moh'd et al., 1995; Casey and Dickens, 2000). This study uses price volatility (standard deviation) as a common proxy for firm risk, which represents a firm's operating and financial risk (Rozeff, 1982; Loyed et al., 1985; Jensen et al., 1992; Alli et al., 1993; Moh'd et al., 1995; Holder et al., 1998; Chen et al., 1999; Saxsena, 1999; Manos, 2002).

The dependent variable (DPR) used in the regression equations takes values over a continuous range, but both RELATAX (relative tax rate: capital gain tax rate/ dividend tax rate) in the independent variables take on distinct values because of the limitation of data. Tax-adjusted models presume that investors require and secure higher expected returns on shares of dividend-paying stocks. The consequence of tax-adjusted theory is the division of investors into dividend tax clientele. Modigliani [1990] argued that the clientele effect is responsible for the alterations in portfolio composition. Masulis and Trueman's [1988] model predicts that investors with differing tax liabilities will not be uniform in their ideal firm dividend policy. They concluded that as tax liability increases (decreases), the preference for dividend payment also increases (decreases). Tax-adjusted model assumes that investors maximize after-tax income. As far back as 1967, Farrar and Selwyn [1967] concluded that in a partial equilibrium framework, individual investors choose the amount of personal and corporate leverage and also whether to receive corporate distributions as dividends or capital gain. Recently Amidu and Abor [2006] found a positive relationship between tax and dividend payout ratios.

The financial literature documents that a firm's profitability is a significant and positive explanatory variable of dividend policy (Jensen et al., 1992; Han et al., 1999; Fama and French, 2000). However, there is a significant difference between dividend policies in developed and developing countries. This difference has been reported by Glen et al. (1995),

showing that dividend payout rates in developing countries are approximately two-thirds of those in developed countries. Moreover, emerging market corporations do not follow a stable dividend policy; dividend payment for a given year is based on firm profitability for the same year. La Porta et al. (2000) compared countries that had strong legal protection for shareholders with those that had poor shareholder legal protection, and related that to countries with inferior quality shareholder legal protection. Their conclusion was that shareholders will take whatever cash dividend they can get from firm profits, where a dividend is perceived as unstable. Wang et al. (2002) compared the dividend policy of Chinese and UK listed companies, and found that the former tended to vote for a higher dividend payout ratio, than the latter. Moreover, UK companies had a clear dividend policy in which annual dividend increases and all companies paid a cash dividend. In contrast, Chinese companies had unstable dividend payments and their dividend ratios were heavily based on firm earnings for the same year, not on any other factor. The latter finding was consistent with that of Adaoðlu (2000), who stated that the main determinant in the amount of cash dividends in the Istanbul Stock Exchange was earnings for the same year. Any variability in the earnings of corporations was directly reflected in the cash dividend level. A similar result was reported by Pandey (2001) for Malaysian firms. Al-Malkawi (2007) identified the profitability

ratio as the key determinant of the corporate dividend policy in Jordan. As a proxy, this study measured firm profitability by the return on asset (ROA). The positive relationship of dividend payout ratio (DPR) with the ROA is expected.

A review of the literature revealed several explanations for the relationship between growth opportunities and dividend policy. One explanation was that a firm tended to use internal funding sources to finance investment projects if it had large growth opportunities and large investment projects. Such a firm chooses to cut, or pay fewer dividends, to reduce its dependence on costly external financing. On the other hand, firms with slow growth and fewer investment opportunities pay higher dividends to prevent managers from over-investing company cash. As such, a dividend here would play an incentive role, by removing resources from the firm and decreasing the agency costs of free cash flows (Jensen, 1986; Lang and Litzenberger, 1989; Al-Malkawi, 2007). Consequently, dividends were found to be higher in firms with slow growth opportunities, compared to firms with high-growth opportunities, as firms with high-growth opportunities have lower free cash flows (Rozeff, 1982; Lloyd et al., 1985; Jensen et al., 1992; Dempsey and Laber, 1992; Alli et al., 1993; Moh'd et al., 1995; Holder et al., 1998). Several studies found that the sales/revenues growth rate was commonly used as a proxy variable for growth opportunities (Rozeff, 1982; Lloyd et al., 1985; Jensen

et al, 1992; Alli et al., 1993; Moh'd et al., 1995 ; Holder et al., 1998; Chen et al., 1999, Saxsena, 1999; Manos, 2002; Travlos, 2002). Firms with many investment opportunities have large cash requirements and thus may pay low dividends. This is the standard view taken by researchers in extant payout literature [see, for example, Rozeff (1984), Smith and Watts (1992), La Porta et al. (2000), Fama and French (2001), DeAngelo et al. (2006)].The impact of investment opportunities on dividends will be negative.

De Angelo et al. (2006) pay attention to the fact that dividends are paid usually by mature and established firms. They argued that firms with a low earned/contributed capital mix are in the capital infusion stage and thus cannot afford to pay dividends, while firms with a high earned/contributed capital mix are mature firms with large cumulative profits and thus are likely to pay dividends. Consistent with their financial life cycle theory, they found that the probability of firms paying dividends tends to increase with the earned/contributed capital mix. I have used the retained earnings-to-total equity ratio (RE/TE) as a proxy for the earned/contributed capital mix. According to De Angelo et al. (2006), RE/TE has a greater impact on the probability of paying dividends than alternative measures of earned/contributed capital mix such as the retained earnings-to-total assets ratio. Based on the financial life cycle theory of dividends; I predict that the impact of RE/TE on dividends is positive. Following Fink et al (2009), I

have defined age as the number of years since a firm's listing date. The positive relationship of dividend payout ratio (DPR) with the age of the firm is expected.

Huda and Farah (2011) explored the determinants of the dividend policy of firms in the banking industry of Bangladesh. Dividend decision of a bank basically depends on its size, profitability, liquidity and retained earnings. The study is an attempt to find out the key dividend determinant variables and their impact over cash, stock and total payout ratio. Statistical techniques of simple and multiple regressions have been used to explore the relationships between variables. The investigation results show the predictor variables have a significant relationship with stock payout and an apparent relationship with cash payout. Amongst all the independent variables, Net Income turns out to be most influential indicator in elucidating dividend payouts.

Sumaiya (2013) studied to determine factors that have statistically significant impacts on the dividend policy of banks with multiple regression analysis and it is seen that bank profitability, growth, and size are not significant in explaining bank dividend policy in 2006. However, their role in explaining dividend strengthens with time till 2010. Ahmed and Mukit(2014) identified the impact of various factors determining the firm's dividend paying behavior in the capital market of Bangladesh. They found that in Bangladesh profitability, corporate tax and market to book value ratios are the

significant determinants of dividend payout ratio and operating cash flow per share, current ratio and debt to equity ratio are the insignificant determinants of dividend payout ratio.

3. Problem Statement:

Study of dividend payments has a very illustrious history. In 1956, John Lintner has laid the foundation for the modern understanding of dividend policy. According to him, dividends are sticky, tied to long-term sustainable earnings, paid by matured companies and smoothened from year to year. Later, Miller and Modigliani (1961) demonstrate that under the condition of perfect capital market and zero taxes, dividends do not affect the value of the firm (Dividend Irrelevance theory) and as such the shareholders are indifferent as to the payment of dividend and retention of profits. Consequently, managers are not to bother too much about the incidence and quantum of dividend payments. However, Gordon (1962) and Walter (1963), during the same time period, prove dividend to be relevant for the valuation of the firm and hence the shareholders are seen to be not at all indifferent as to the payment of dividend and retention of profits. From the above literature review, we have taken the factors, which influence on dividend decision. It is observed that the research work in this field is not sufficient in Bangladesh. This issue motivates us to conduct the study in this field. Previous results also show that dividend rate is more or less explained by a good number of explanatory variables. But the explanatory power of these variables comes down considerably in the matter of their relation with dividend payout or dividend yield. The purpose of the study is to identify the determinants of dividend policy decision and it nature of influence on dividend decision in the capital market of Bangladesh.

4. Research Questions and objectives

Study tried to answer a broad research question, like, 'What are the determinants or factors of dividend decision in Banking sectors of Bangladesh?'

Objectives are:

a) To analyze the determinants of dividend policy in banking sectors of Bangladesh.

b) To suggest a comprehensive dividend policy framework for improving the dividend policies.

5. Research Design

Sample

The study is based on secondary data obtained from published annual reports of sample banks, monthly review of Dhaka stock exchange and website of DSE. The sample includes listed banks of DSE. It is taken 22 banks as sample. The sample period is 20 years from 1994 to 2013 for study.

Hypothesis

H_0: *Dividend payout is not influenced by the factors: Lagged dividend payout ratio, Earnings per share, Cash flow,*

Sale growth, liquidity, Institutional ownership, Sponsor ownership, Individual ownership, Leverage, Risk, Age, Size, Relative tax, Return on assets, Investment Opportunity, Retained earnings to equity.

Variables used in study

Dependent Variable: Dividend Payout Ratio (DPR)

Independent Variables: *Lagged dividend payout ratio, Earnings per share, Cash flow, Sale growth, liquidity, Institutional ownership, Sponsor ownership, Individual ownership, Leverage, Risk, Age, Size, Relative tax, Return on assets, Investment Opportunity, Retained earnings to equity.*

Model & Methods

I have identified the dependent and independent variables and have chosen the proxies for the variables depending on the previous empirical evidences in this case. The study has run the Descriptive statistics and multiple regression analysis based on the selected proxies. In this approach, more emphasis is given to the previous studies for identifying variables. Michaelsen (1961), Gerber (1988), Holder et al. (1998), and Saxena (1999) adopted this approach in their empirical studies.

This theoretical statement could be framed as:

$$DPR_{it} = á + â_1 DPR_{it-1} + â_2 EPS_{it} + â_3 LEV_{it} + â_4 CF_{it} + â_5 SG_{it} + â_6 SIZE_{it} + â_7 LIQ_{it} + â_8$$

$$OWN (SPONSOR)_{it} + â_9 OWN(INST)_{it} + â_{10} OWN(IND)_{it} + â_{11} RISK_{it} + â_{12} AGEit + â_{13} RELATAX_{it} + â_{14} RE/TE_{it} + â_{15} ROA_{it} + â_{16} INVEST OPPORT_{it} + u_{it}$$

Where,

Dependent Variable:
Dividend Payout Ratio = Cash dividend per share/ Earning per share*100

Independent Variables:

DPR_{t-1} = Lagged dividend payout ratio

EPS (Earnings per share) = Net Profit/ Total Shares

CF (Cash flow) = Net cash flow/ total number of share

SG (Sale growth) = $(Sales_t - Sales_{t-1})/ Sales_{t-1}*100$

SIZE (Size) = Log of Total Assets

LIQ (Liquidity) = Quick Ratio ((current assets-inventory)/current liabilities)

OWNIST (Institutional ownership) = No. of Share held by institution/total no. of share

OWNSPONSOR (Sponsor ownership) = No. of share held by sponsor/ total no. of shares

OWNIND (Individual ownership) = No. of share held by individual/ total no. of shares

LEV (Leverage) = Total liabilities/ total assets

Risk = standard deviation of daily stock return over 365 days (Volatility)

RELATAX (Relative tax) = Capital gain tax rate/ Dividend tax rate

ROA (Return on assets) = Net income/ Total asset

INVESTOPP (Investment Opportunity) = (Net fixed asset$_t$ -net fixed asset$_{t-1}$)/ net fixed asset$_{t-1}$*100

RE/TE (Retained earnings to total equity ratio)= (Retained earnings/total shareholders' equity)*100

Firm age (AGE) = Natural log of No. of years of listing on the stock exchange

Methods: Descriptive statistics and multiple regression analysis are used to to identify significant variables.
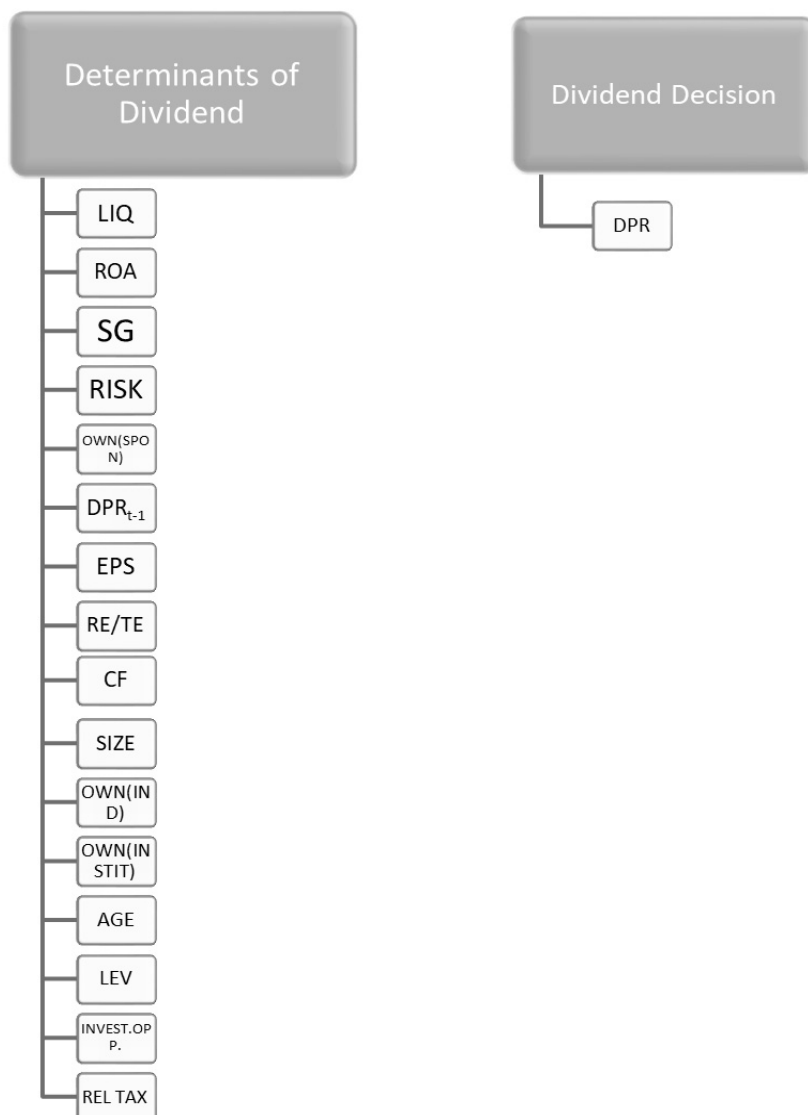
6. Analytical Results

Pooled Regression Model: Study on Banking Sector

Descriptive Statistics:

The descriptive statistics is shown in table-1 which represents the mean, standard deviation of variables.

Table-1: Descriptive Statistics

Descriptive Statistics			
	Mean	Std. Deviation	N
DPR	18.7825	24.00960	20
EPS	86.1455	190.79493	20
RE/TE	11.4086	4.95266	20
CF	1.2201E2	140.11235	20
SG	38.4963	29.12911	20
SIZE	10.6804	.76459	20
OWN(SPONSOR)	49.4912	10.33043	20
OWN(INDIVIDUAL)	37.1071	10.61277	20
OWN(INSTITUTION)	24.9410	65.53396	20
LEV	14.1881	2.54602	20
RISK	5.2389	2.69501	20
AGE	1.9218	.52824	20
RELATIVE TAX	1.5000	.00000	20
INVEST. OPPORT.	55.0126	36.75631	20
ROA	1.9881	2.92024	20
DPR$_{it-1}$	18.7825	21.00960	20

Multi collinearity

The theoretical maximum value of tolerance is 1.00 and minimum value of tolerance is zero. From the table 5 & 6, it is observed that the tolerance of the variable ROA, SG, RISK, OWN (sponsor), EPS, RE/TE, PE, CF, SIZE, OWN (individual), OWN (institution), LEV, AGE, INVEST.OPPORT are 0.708, 0.882, 0.791, 0.774, 0.911, 0.726, 0.708, 0.98, 0.852, 0.453, 0.914, 0.884, 0.863, respectively which are highly positive and more than zero. So, it is concluded that the variables are free from multicollinearity.

Auto correlation

The value of Durbin-Watson test of this model is 2.204 which is near to 2 and indicates the model is free from autocorrelation (table-3)

Homoscedasticity

In the linear regression the error term is assumed to be homoscedastic

constant across observations. Violation of this assumption is pernicious. Estimates of standard errors for the regression coefficients are biased and the direction of the bias is not known a priori may inflate or deflate t-tests. The

Breusch- Pagan/ Cook-Weisberg test is used to test hetero-scedasticity in this study as shown in table 2 by using STATA. A large chi-square would indicate that the hetero-scedasticity is present.

Table 2: Breusch- Pagan/ Cook-Weisberg test for heteroscedasticity

Test	Chi-square(chi2)	Prob> chi2
Breusch- Pagan/ Cook-Weisberg test	8.13	0.112

From the table 2, it is observed that the chi- square value is small, indicating heteroscedasticity is probably not a problem. Here, the chi-square value is 8.13(p=.0.112) and indicates the insignificancy which indicates that the errors have a constant variance (the data does not suffer from heteroscedasticity).

Coefficient of Multiple Determination (R^2): The summary of the model is shown

in table 3. The table represents the R, R^2, and adjusted R^2. R is the values of multiple correlations co-efficient between the predictors and the outcome. Where LEV, RE/TE, SIZE are used as a predictors. The R value of model 3 is 0.763 which implies the strong relationship between independent variables and dependent variable.

Table-3: Model Summary[c]

Model Summary[d]										
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.539[a]	.290	.251	20.78389	.290	7.355	1	18	.014	
2	.678[b]	.460	.396	18.65771	.170	5.336	1	17	.034	
3	.763[c]	.582	.504	16.91537	.122	4.682	1	16	.046	2.204
a. Predictors: (Constant), LEV										
b. Predictors: (Constant), LEV, RE/TE										
c. Predictors: (Constant), LEV, RE/TE, SIZE										
d. Dependent Variable: DPR										

The R^2 shows the amount of variance of DPR of explained by LEV, RE/TE, and SIZE. The value of R^2 of the model -3 is 0.582 which indicates that the independent variables explain 58.2% of the dependent variable (DPR). This represents satisfactory result for interpreting the model.

Significance of the Model: F-test

ANOVA table is shown in table 4, which represents the significance of the model through the F-test. The F values of model 1, model 2, and model 3 are 7.355, 7.23, and 7.426 which are statistically significant. It is interpreted that the Final model(model 3) significantly improve the ability to

predict the outcome variable(dependent variable).The F-statistics(F=7.42) of the model 3 is significant at 5 percent level of significant indicating that the model provides significant explanation of variation in the dividend determinants of financial sector.

Table 4: ANOVA[c]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3177.301	1	3177.301	7.355	.014[a]
	Residual	7775.459	18	431.970		
	Total	10952.759	19			
2	Regression	5034.889	2	2517.444	7.232	.005[b]
	Residual	5917.870	17	348.110		
	Total	10952.759	19			
3	Regression	6374.684	3	2124.895	7.426	.002[c]
	Residual	4578.076	16	286.130		
	Total	10952.759	19			
a. Predictors: (Constant), LEV						
b. Predictors: (Constant), LEV, RE/TE						
c. Predictors: (Constant), LEV, RE/TE, SIZE						
d. Dependent Variable: DPR						

Significant of the Variables/Model parameters:

The result of model parameters is shown in table 5. In the model, the Coefficient (B) values of LEV, RE/TE, and SIZE are 5.961, -2.247, and 11.096 respectively. It infers that the LEV, RE/TE, SIZE are significant determinants of dividend decision.

The final model (model 3) is explained, because this includes all predictors that make a significant contribution to DPR. From the table 6, it is observed in model 3 that the t value of LEV, RE/TE, SIZE are 3.73(p=.002), -2.73(p=.015), 2.16(p=.046) respectively which are significant at 5 percent level of significant. The p values of the independent variables, LEV, RE/TE, SIZE are less than .05 which also indicates the significance of the variables. So, finally it is concluded that among the independent variables LEV, RE/TE, SIZE are the significant determinants of dividend decision.

In the model 3, the standardized betas of LEV, RE/TE, and SIZE are 0.632, -0.464, and 0.353 respectively which also represents the significant contribution of LEV, RE/TE, and SIZE on DPR.

Non- Significant

From the table 6, it is shown that the model 3 explains the contribution of determinants on the DPR. The coefficients of EPS, lagged DPR, CF, SG, OWN (SPON), OWN (INDIV), OWN(INSTIT) RISK, AGE, INVEST.OPPT, ROA are -0.005, 0.044, -0.321, 0.046, -0.154, 0.044, 0.12, -0.85, -0.242, 0.061, 0.063 respectively which indicate the little impact of these variables on dividend decision. The t value of EPS, lagged DPR, CF,SG, OWN(SPON), OWN(INDIV), OWN(INSTIT) RISK, AGE, INVEST.OPPT, ROA are -0.026(p=.98), 0.225(p=0.825), -1.78(p=0.095), 0.243(p=0.811), -0.842(p=0.413), 0.245(p=0.810), 0.488(p=0.633), -0.481(p=0.638), -1.46(p=0.165), 0.343(p=0.736), 0.271(p=0.79) which are not statistically significant. So, it is concluded that EPS, lagged DPR, CF, SG, OWN (SPON), OWN (INDIV), OWN (INSTIT) RISK, AGE, INVEST.OPPT, ROA are not significant determinants of dividend decision.

Table 5: Coefficients[a]

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.	95% Confidence Interval for B		Correlations			Collinearity Statistics	
		B	Std. Error	Beta			Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	-53.281	26.975		-1.975	.064	-109.953	3.391					
	LEV	5.079	1.873	.539	2.712	.014	1.145	9.014	.539	.539	.539	1.000	1.000
2	(Constant)	-45.855	24.428		-1.877	.078	-97.393	5.683					
	LEV	6.230	1.753	.661	3.553	.002	2.531	9.930	.539	.653	.633	.919	1.088
	RE/TE	-2.082	.901	-.430	-2.310	.034	-3.984	-.180	-.242	-.489	-.412	.919	1.088
3	(Constant)	-158.656	56.638		-2.801	.013	-278.723	-38.589					
	LEV	5.961	1.595	.632	3.738	.002	2.580	9.341	.539	.683	.604	.914	1.094
	RE/TE	-2.247	.821	-.464	-2.738	.015	-3.987	-.507	-.242	-.565	-.443	.911	1.097
	SIZE	11.096	5.128	.353	2.164	.046	.226	21.966	.366	.476	.350	.980	1.021

a. Dependent Variable: DPR

Table-6 : Excluded Variables[c]

Excluded Variables[d]

Model		Beta In	t	Sig.	Partial Correlation	Collinearity Statistics		
						Tolerance	VIF	Minimum Tolerance
3	EPS	-.005c	-.026	.980	-.007	.774	1.291	.774
	Lagged DPR	.044c	.225	.825	.058	.726	1.378	.704
	CF	-.321c	-1.781	.095	-.418	.708	1.413	.708
	SG	.046c	.243	.811	.063	.787	1.271	.787
	OWN(SPONSOR)	-.154c	-.842	.413	-.212	.791	1.265	.791
	OWN(INDIVIDUAL)	.044c	.245	.810	.063	.852	1.173	.843
	OWN(INSTITUTION)	.120c	.488	.633	.125	.453	2.210	.453
	RISK	-.085c	-.481	.638	-.123	.882	1.134	.823
	AGE	-.242c	-1.460	.165	-.353	.884	1.131	.834
	INVEST. OPPORT.	.061c	.343	.736	.088	.863	1.159	.863
	ROA	.063c	.271	.790	.070	.511	1.957	.501

a. Predictors in the Model: (Constant), LEV
b. Predictors in the Model: (Constant), LEV, RE/TE
c. Predictors in the Model: (Constant), LEV, RE/TE, SIZE
d. Dependent Variable: DPR

Summary of Findings:

RE/TE (Retained earnings to total equity ratio):

The coefficient of RE/TE is -2.247 and the t value is -2.73(p=0.015) which is negatively significant. It indicates that the DPR is negatively related to RE/TE because a firm that plans to finance future investment opportunities from retained earnings would distribute lesser profits as dividends. Thus, retained earnings of the current year are negatively associated with dividend paid.

SIZE (Size):

The coefficient of size is 11.096 and the t value is 2.16(p=0.046) which is positively significant. The positive relationship between dividend payout policy and firm size is also supported by a growing number of other studies (Eddy and Seifert, 1988; Jensen et al., 1992; Redding, 1997; Holder et al., 1998; Fama and French, 2000; Manos, 2002; Mollah 2002; Travlos et al., 2002; Al-Malkawi, 2007).

As mentioned previously, larger firms pay a higher cash dividend for several reasons. First, large firms face high agency costs as a result of ownership dispersion, increased complexity, and the inability of shareholders to monitor firm activity closely. Hence, such firms pay a larger dividend to reduce agency costs (Jensen and Meckling, 1976; Lloyd et al., 1985). Second, as a result of the weak control in monitoring management in large firms, a large dividend payout increases the need for external financing, which, in turn, leads to the increased monitoring of large firms by creditors. This may be a quality that is attractive to the shareholders (Sawicki, 2005). Another explanation for this positive association might be related to large firms' easier access to capital markets, and their ability to raise funds with lower issuance costs for external financing. Consequently, large firms are better able than small firms to distribute higher dividends to shareholders (Holder et al., 1998).

LEV (Leverage):

The coefficient of leverage is 5.96 and the t value is 3.73(p=0.002) which is positively significant. Because, the, firms with high leverage ratios have high transaction costs, and are in a weak position to pay higher dividends to avoid the cost of external financing. In some industries payout and leverage ratios are positively related while in other industries the relationship is negative. Mollah et al. (2001) examined an emerging market and found a direct relationship between financial leverage and debt-burden level that increases transaction costs.

7. Recommendations

The companies should follow continuous dividend policy practices with a view to boosting investor morale as well as keeping stock market as safe harbor for investment and financing sector. The dividend decision makers should consider mainly the liquidity and earnings of the company for giving dividend to the shareholders. The decision maker,

investors and other stakeholders should follow these findings.

8. Conclusion

The purpose of the study is to identify the determinants of dividend decision of listed banks in DSE. The significant determinants are retained earnings to equity, size, lagged DPR. These findings will help the investors, dividend decision maker and other related parties in the capital market of Bangladesh.

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