

Determinants of Dividends of Islamic Financial Institutions Operating in Bangladesh

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***Abstract:** The dividend payout policy is one of the most debated issues in corporate finance and some academics have called the company's dividend payout policy an unsolved puzzle. Even though an extensive amount of research regarding dividends has been conducted, there is no uniform answer to the question: what are the determinants of the companies' dividend payout ratios? The purpose of the paper is to investigate the relationship between the dividend payout rate and method and the companies' selected variables which can influence the dividend policy. The study mainly focuses on stocks of IFIs (Islamic Financial Institutions) of Bangladesh that are listed on Dhaka Stock Exchange (DSE). The study follows a quantitative research method with a deductive approach in order to determine whether there is a relationship between the companies selected independent variables and the dividend payout rate and method by using different statistical instruments. The paper mainly tries to examine the influence of the independent factors such as size of the firm, profitability, lagged dividend, age of firm and leverage over the dividend policy of Islamic financial institutions.*

***Keywords:** Dividend, Profitability, Size, Leverage, P/E Ratio, Age of Firm, Islamic Financial Institutions*

1. Introduction

The dividend payout policy is one of the most debated topics within corporate finance and many academics have been trying to find the missing pieces in the dividend puzzle for more than a half century (Baker, 2009). But dividends is not a new phenomenon, payouts to shareholders have been a standard procedure for most companies in hundreds of years. However, some of the most successful companies during the last years such as Apple and Google have chosen not to pay dividends (Ciaccia, 2012). This indicates that it is possible to be successful without paying dividends, so why do firms pay dividends at all?

This question has been extensively debated and one of the most powerful arguments towards the impact of dividends was presented by Modigliani and Miller (1961). This is

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contrary to the view of Brealey et al. (2008) who state that the dividend payout controversy is one of the ten major unsolved problems in corporate finance and further research within the area is crucial in order to increase the understanding of the subject. A lot of research in various countries has also been conducted in order to describe the relationship between a number of factors and the company's dividend payouts to shareholders. But even though many studies have been conducted, the results indicate that there are some differences between countries regarding which factors that have an impact on dividend payouts. For example Rozeff (1982) conducted an investigation regarding the determinants of dividends in United States and he found a strong negative relationship between the riskiness and the dividend payouts. These results are contrary to the study made by Al Shabibi and Ramesh (2011) in the United Kingdom. The study revealed a positive relationship between the dividend payouts and the riskiness of the company.

A very few studies regarding determinants of dividend payouts have been conducted in Bangladesh till now, especially on the Islamic Financial Institutions of this country. Dividend payouts play a major role for many Bangladeshi shareholders and during the last years the dividends among Bangladeshi firms have been increasing. In the last two decades the number of Islamic Financial Institution is growing gradually and their financial performance has become good enough to be compared to other traditional FIs. Besides Dhaka Stock Exchange has launched Shariah Index named "DSES" keeping the demand of the religious people in mind. Therefore it would be interesting to conduct a research regarding the relationship between a number of preselected company factors and the dividend payouts on the Islamic Financial Institutions of Bangladesh.

2. Research Question

In order to thoroughly determine the relationship between the independent variables and the dividend policies and to update the previous findings regarding the dividend puzzle the following research questions have been formulated:

What determines dividend policy of Islamic Financial Institutions of Bangladesh?

What is the relationship between the dividend rate and the selected independent variables for Islamic Financial Institutions of Bangladesh?

What is the relationship between the dividend policy (method of paying dividend) and the selected independent variables for Islamic Financial Institutions of Bangladesh?

What is the impact of these selected variables on dividend and dividend policies of these Financial Institutions of Bangladesh?

How the dividend pattern of IFIS differs from the traditional ones? And,

Is there any significant dissimilarity across the countries in terms of dividend determinant variable?

3. Review of Literature

Most of the previous studies regarding determinants of firms dividend policies have been conducted in the United States. But we also wanted to include studies from other countries in the sample in order to capture studies from different economical environments. For example, we included studies from Ghana, India and GCC countries since it would be interesting to see whether these countries have some similar features to the Bangladeshi market. Table 1 provides an overview of the selected studies:

Table 1: Overview of Selected Studies

Authors	Country	Positive Relationship	Negative Relationship
Rozeff (1982)	USA	Number of SH	Risk (Beta), Insider ownership, Growth
Lloyd et. al (1985)	USA	Size (log of sales)	Risk (beta), Insider ownership, Growth
Holder et al. (1998)	USA	FCF, Size (log of sales)	Insider ownership, Growth, Risk (Std of return)
Gill et.al, (2006)	USA	Prof (EBIT/Total assets), tax	Growth
Amidu & Abor (2006)	Ghana	Prof (EBIT/Tot Assets), CF, tax	Risk (Var in CF), M/B value, Growth, Insider ownership
Hedensted & Raaballe (2006)	Denmark	Retained Earnings, ROE, Size	
Anil & Kapoor (2008)	India	Profit (EBIT/total assets), CF, tax	Growth, M/B value,
Al-Kuwari (2009)	GCC Countries	Gov ownership, Size, Profit (ROE)	Leverage (D/E)
Al Shabibi & Ramesh (2011)	United Kingdom	Size, Profit, Risk	
Huda. F & Farah. T (2011)	Bangladesh	Cash, Net Income	Revenue, EPS, RE

Rozeff (1982) tested the correlation between the dividend payout ratio and a number of company factors. The study reveals that there is a positive relationship between the number of shareholders and the dividend payout ratio. Rozeff argues that companies with a larger amount of external shareholders have to pay higher dividends in order to reduce the agency conflict. The results also indicate that there is a negative relationship between dividends payout ratios and risk, insider ownership and growth (in revenue). The negative relationship between dividends and insider ownership is also related to the agency conflict, since a large part of the share is held by insiders the company does not have to pay high dividends. Rozeff (1982) also states that future growth opportunities have a greater impact on the dividends than past realized growth.

Lloyd et.al (1985) presented another research regarding the relationship between the dividend payout ratio and the company's selected factors. Lloyd's research is based on the study made by Rozeff (1982) and he wanted to test if Rozeff's results were applicable during another time period. Lloyd added size as one additional variable to the tested factors. Lloyd et.al (1985) argues that large companies tend to have a better access to capital markets, which makes them less dependent on internally generated funds which in turn contributes to that they are able to pay higher dividends. Apart from size, Lloyd's research found the same results as Rozeff and dividend payments are negatively correlated to risk, insider ownership and growth (in revenue). Lloyd et.al states that risk is negatively correlated to dividend payments since riskier companies face higher uncertainty and therefore chose to retain earnings instead of paying dividends to shareholders.

Holder et.al (1998) presented a study regarding the determinants of dividend policies in United States; indicate that there is a positive relationship between dividend payout ratio and size (log of sales) and the free cash flow. Holder et.al states that large companies have easier access to capital markets and should therefore be able to pay higher dividends compared to small firms. Companies with high free cash flow also tend to pay higher dividends and the authors' states that this supports the agency theory, companies with larger free cash flow have to pay higher dividends in order to reduce the agency conflict. A negative relationship was discovered between dividends and risk (standard deviation of returns), internal ownership and growth (in sales).

Gill et.al (2006) conducted a study in the United States. They argue that it is beneficial for companies to pay dividends due to a number of reasons; dividends indicate financial wellbeing, attractive for investors and dividends help to maintain the market price of the stock. The sample consisted of 266 randomly selected public companies from different industries in United States. The company selected factors in the study are: profit (EBIT/Total assets), cash flow, tax (corporate profit/net profit), and growth, market to book value and debt to equity ratio. There was a positive relationship between dividends

and profit and tax and negative relationship between dividends and growth. However, Gill et.al (2006) argues that the impact of the profit is industry specific and varies a lot depending in which industry the company is located. No significant relationship between dividend payments and cash flow, market to book value and debt to equity ratio could be established. This is contrary to previous research which has found a rather strong relationship between cash flow and dividends.

Amidu and Abor (2006) investigated the relationship between a number of company selected factors and the dividend payout ratio in Ghana. The sample consists of companies that have been listed on Ghana stock exchange during 1998-2003 and even though the sample just consists of 20 companies, they represent 76 percent of all listed firms in Ghana during the time period. The factors included in the research are profit (EBIT/total assets), risk (variability in profit), cash flow, tax (corporate profit/net profit), institutional holding, growth (in sales) and market to book value. Amidu and Abor (2006) found a positive correlation between the companies' dividend payout ratios and profitability and cash flow. A positive correlation was also established between dividends and taxes. The authors state that the result came as a surprise and it contradict existing literature. A negative correlation between dividends and growth (in sales) and market to book value was revealed. There also existed a negative but insignificant relationship between the dividend payout ratio and risk and institutional holdings.

Hedensted and Raaballe (2006) conducted a study in Denmark regarding the determinants of dividends. The sample consists of 365 companies that were listed on Copenhagen stock exchange during 1988-2004. The variables used in the research in order to reveal the relationship with dividends are: earnings, return on equity, market to book value, leverage (debt/equity) and size. Hedensted and Raaballe used dividend yield instead of dividend payout ratio as a measurement of the dividend payments. But they did not use the regular dividend yield since it is heavily influenced by the stock price and is therefore not a good measurement. Instead they used dividend yield with equity measured in fixed market prices. The authors found a positive relationship between the dividend yield and retained earnings, return on equity and size. There existed no significant relationship between dividend yield and market to book value and the firms leverage (debt/equity). As a conclusion, the authors state that the results of the study support both the agency and the signaling theories of dividends.

Anil and Kapoor (2008) conducted a study among Indian IT-companies and the data was collected during the period 2000-2006. The authors used five company factors in order to test the relationship with the company's dividend payout ratio. The authors state that there is a positive but insignificant relationship between the dividend payout ratios and the companies' profit (EBIT/total assets) and taxes. The results indicate that profit is not of major importance when an IT-company decides to pay dividends. However the results

indicate that there is a strong relationship between cash flow and dividend payments. Anil and Kapoor states that a good liquidity position is an important factor which influences companies' dividend payout ratios. Companies with stable and high cash flows are more likely to pay dividends compared to companies who have low or unstable cash flows. The author also found an insignificant negative correlation between dividends and growth and market to book value.

Daunfeldt et al. (2009) conducted the only relevant Swedish study that we were able to find. The main focus of the study is towards the taxation of Swedish companies' dividend payments, but it also deals with the determinants of dividends and investigates the relationship between a number of company selected factors and the dividend yield. Even though the study was presented in 2009 it is based on data collected during 1991-1995 from Stockholm stock exchange and it is therefore not up to date, but we still think that it is important to include a study from Sweden. A fairly strong positive relationship was established between dividends and size (logarithm of employees) and the authors' state that this is due to the higher agency costs connected to larger companies. A positive but insignificant relationship was established between dividends and cash flows and earnings. The authors explain the results by stating that profitable companies should pay higher dividends and the same applies for firms with higher liquidity (cash flow). However, a negative relationship was established between the market to book value and the dividend yield. Daunfeldt et al. (2009) states that the negative relationship can be explained by the fact that firms with growth opportunities pay low dividends in order to exploit their growth opportunities. But the authors further argue that this is against the signaling theory since companies with higher growth opportunities should pay higher dividends in order to inform shareholders about the growth prospects.

Al-Kuwari (2009) conducted a research among companies listed on Gulf-cooperation council stock exchanges (GCC), which includes six countries at the Arabian Peninsula. The sample consists of 191 non-financial companies and data from the period 1999-2003 was collected. A strong relationship between the companies' dividend payout ratios and government ownership, size and profit existed. Al-Kuwari (2009) explains the positive relation between government ownership and dividends by stating that a high degree government ownership makes it easier for a company to attract external funds. With the external funds the company may pay additional dividends or make additional investments in profitable projects. Al-Kuwari (2009) also states that larger firms pay additional dividends in order to reduce agency costs due to the dispersion of the ownership. A strong negative relationship could be established between the companies leverage (debt/equity) and dividend payout ratio. Al-Kuwari (2009) explains the result by stating that companies with higher leverage face higher transaction costs connected to external financing. But no significant relationship between dividend payout ratios and companies free cash flows, growth and risk (beta) was revealed.

Al Shabibi and Ramesh (2011) presented a study regarding determinants of dividends in United Kingdom. The sample consisted of 102 non-financial companies listed on the stock exchange in United Kingdom in 2007. Al Shabibi and Ramesh used a large number of company selected factors in order to determine the relationship with the dividend payments. The result revealed no significant relationship between dividends and growth, industrial type, tangibility and gearing ratio. However a fairly strong relationship was established between the companies' dividends and profit, size and risk. The authors explain the positive relationship with risk by referring to the signaling theory. They state that riskier firms may want to signal stability and therefore chose to pay dividends to shareholders.

3. Methodology

3.1 Sampling

The research primarily focuses on stocks of IFIs (*Islamic Financial Institutions*) of Bangladesh that are listed on Dhaka Stock Exchange (DSE). The time frame of this study is 2009 to 2013. One of the criteria when deciding which stocks to include was that the stocks had to be listed on the same segment on DSE during the whole time period. The total number of companies belongs to this sector (Islamic Financial Institutions) is thirteen (13). The list of these observations (IFIs) in this population is given in the table below:

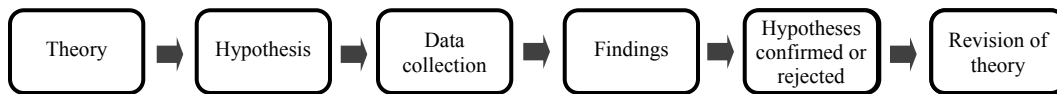
Table 2: Selected Financial Institutions

Islamic Bank	Non-bank Islamic FI	Islamic Insurance Company
1. Al Arafah Islami Bank	1. Islamic Finance & Investment	1. Fareast Islami Life Insurance
2. EXIM Bank		2. Islami Insurance Bangladesh Limited
3. First Securities Islami Bank		3. Prime Islami Life Insurance
4. ICB Islamic Bank		4. Takaful Islami Insurance
5. Islami Bank		5. Padma Islami Life Insurance.
6. Shahjalal Bank Limited		
7. Social Islami Bank Limited		

Total numbers of observations in population are 13 companies. Among these companies ICB Islamic Bank is not paying any dividend in any form in the last five years, so it is excluded from our analysis. Due to unavailability of data, Fareast Islami Life Insurance, Prime Islami Life Insurance and Padma Islami Life Insurance have been excluded from our analysis. So, our sample size is reduced to 9 companies.

3.2 Research Approach

There basically exist two main types of research approaches which describe the relationship between theory and the research process, deductive and inductive. In the deductive approach the researcher bases their research on already existing theories in order to create a number of hypotheses which later will be tested against empirical data. The other main research approach is the inductive, which in contrast to the deductive approach, bases the research on empirical data that is used in order to create a theory. For our analysis, the deductive approach is most appropriate in this case since we will test the different theories against our hypothesis. The steps in the deductive approach are described in figure given below:



3.3 Research Method

The qualitative and the quantitative methods are the most common research methods used in academic studies. The purpose of our study is to investigate the determinants of the company's dividend payout ratio by using a number of company factors such as profit, size, age of firm etc. Based on the methodological assumptions and the research approach it has been decided that the most appropriate research method for our study is a quantitative research method.

3.4 Defining Variables

3.4.1 Dependent Variables:

Two dependent variables have been considered in our analysis in order to find out the solution of our two major research questions. The first one is dividend rate (Y1); it may be either of cash, stock or both given as percentage form. It will help to find out the relationship between the dividend and selected variables for Islamic Financial Institutions of Bangladesh. The second one is way of paying dividend (dividend policy Y2). In this case a dummy variable has to be used. The procedure described below:

Dividend Policy Y2 = Parameters

No dividend = 0

Stock Dividend = 1

Cash Dividend = 2

Both Stock and Cash =3

It will help to find out the relationship between the dividend policy (method of paying dividend) and the factors in question for Islamic Financial Institutions of Bangladesh.

3.4.2 Independent Variables:

3.4.2.1 Size: A large firm typically has better access to capital markets and finds it easier to raise funds with lower cost and fewer constraints compared to a small firm. This suggests that the dependence on internal funding decreases as firm size increases. Therefore, *ceteris paribus*, large firms are more likely to afford paying higher dividends to shareholders. Numerous empirical studies have documented that size is a significant determinant of a firm's dividend policy, and that it is positively related to dividends (see Lloyd et al., 1985, Barclay et al., 1995, Reeding, 1997, Holder et al. 1998, Fama and French, 2001, among others). There are different measures of firm size (e.g. employment, sales, assets, and capitalisation). This measure has frequently been used by earlier research. Based on the aforesaid discussion and consistent with previous research the size variable is expected to have a positive relationship with dividend payouts. This suggests the following hypothesis:

H1: *Ceteris paribus*, the likelihood of paying a dividend increases with firm size.

Measure of Size: The Size of the firm is measured by the natural logarithm of the book value of the firm's Total Assets. (Joseph 2001)

Size (LTA) = Natural Log of Total Assets

3.4.2.2 Profit: 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 dividends⁴. 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 (see, for example, Jensen et al, 1992, Han et al., 1999, and Fama and French, 2002). Evidence from emerging markets also supports the proposition that profitability is one of the most important factors that determines dividend policy. Based on the above discussion, profitability is expected to be a key determinant of corporate dividend policy in Bangladesh. To test this hypothesis, the after Return on Equity (ROE) is used as a measure of a firm's profitability. The hypothesized relationship between profitability and dividends is positive. Thus, the following hypothesis is proposed:

H2: Ceteris paribus, the likelihood of paying a dividend increases for more profitable firms.

Measure of Profitability: The profitability has been measured by either,

Return on Equity (ROE) = Net Profit after Preference Dividend/Number of Equity Shares outstanding,

Return on Assets (ROA) = Net Profit/Total Assets or

Earnings per Share (EPS) = Net Profit/ Number of Equity shares outstanding.

ROE will be considered for this study in percentage form.

3.4.2.3 Risk: The P/E ratio implicitly incorporates the perceived risk of a given company's future earnings. A high P/E suggests that investors are expecting higher earnings growth in the future compared to companies with a lower P/E (Fama and French 1998, Puckett 1964). Raising dividends reduces the risk of future cash flows to the stockholder which increases stock price and the P/E ratio. High P/Es may be associated with low risk and higher payout ratios, whereas low P/Es may be attributed to high risk and lower payout ratios. Amidu and Abov (2006) a negative relationship is there between payout ratio and risk.

H3: Ceteris paribus, Risk has a negative relationship with the dividend policy. Alternatively, P/E ratio is positively associated with the Dividend payouts.

Measure of Risk: The risk of the company has been measured by Price of Share/Earning per share (P/E) ratio.

3.4.2.4 Growth: Recent experiences have shown that growth in revenues tend to pay lower dividends. There will be a high demand of capital if a firm is fast growing. The pecking order theory states that firms should finance new projects first with least information-sensitive sources. Also, firms with high growth opportunities are likely to retain a greater portion of their earnings to finance their expansion projects as against returning these dividends to shareholders. Based on the foregoing discussion, the following hypothesis is proposed:

H4: Ceteris paribus, mature firms with less investment opportunities are more likely to pay dividends.

Measure of Growth: We will consider Income Growth for this study. It is given in absolute form. The Growth of the company has been measured by

$$\text{Growth} = \left[\frac{\text{Income year}(x)}{\text{Income year}(x-1)} \right]^{-1}$$

3.4.2.5 Collateral capacity: Bradley et al (1984), in the world of business, companies that have a superior percentage of their assets as tangible assets is in better position to raise capital through debt and get it at a cheaper cost and this will result in reducing undue pressure on the internally generated fund, thus, all thing being equal, collateral capacity is anticipated to have a positive outcome on a firm's dividend policy. Firms that have most of it assets as tangible is collaterally position in the eyes of the investing public. Based on the foregoing discussion, the following hypothesis is proposed:

H5: Ceteris paribus, the likelihood of paying a dividend increases for firms with greater collateral capacity.

Measure of Collateral Capacity: the collateral capacity of the company has been measured by;

$$\text{Collateral Capacity} = \text{Fixed asset} / \text{Total asset}$$

3.4.2.6 Lagged dividend: Lagged dividend refers to the cash dividend paid by the firm to the investors one year prior to the year under certain consideration. Past dividend trend is significant enough to influence the current dividend payment in order for management to follow a stable dividend policy. This variable has been included as an important determinant in most of the theoretical and empirical studies. Based on the discussion, the following hypothesis is proposed:

H6: Ceteris paribus, the likelihood of paying a dividend increases for firms paid more dividends in the last year.

3.4.2.7 Age of the firm: Companies that have been in business for so long times are positioned to have a good reputation for themselves against companies with short period in business. When reputation of a firm is managed as it should be can be used as a foundation for attracting cheaper credit to finance expansion and operational ventures. Such firms therefore are likely to pay more dividends. The research seeks to test this by using age squared due to the apparent variation. Based on the foregoing discussion, the following hypothesis is proposed:

H7: Ceteris paribus, mature firms with greater age are more likely to pay dividends more.

3.4.2.8 Leverage: The financial structure of a firm consists of both debt (liabilities) and equity financing. Long-term financing usually refers to the firm's capital structure, and the extent to which a firm relies on debt financing is called financial leverage. In addition to the tax advantages (interests deduction on income), the use of debt financing can lever-up shareholders' return on equity. However, leverage entails risk; that is, when a firm acquires debt financing it commits itself to fixed financial charges embodied in interest payments and the principal amount, and failure to meet these obligations may lead the firm into liquidation.

The risk associated with high degrees of financial leverage may therefore result in low dividend payments because, *ceteris paribus*, firms need to maintain their internal cash flow to pay their obligations rather than distributing the cash to shareholders. Moreover, Rozeff (1982) points out that, firms with high financial leverage tend to have low payouts ratios to reduce the transaction costs associated with external financing. In addition, some debt covenants have restrictions on dividend payments. Therefore, the following hypothesis is proposed:

H8: *Ceteris paribus*, the probability of paying a dividend increases with low financial leverage.

Measure of Leverage: the Leverage of the company has been measured by

$$DP/TA = \frac{[\text{Deposit+Placement from Banks \& Other Financial Institutions}]}{\text{Total Asset}}$$

3.5 Statistical Tests

A number of statistical tests such as multiple regression using Ordinary Least Square (OLS), Tobit Model for dummy variable and hypotheses testing have been conducted in order to determine whether there is a relationship between the companies selected factors and the dividend payout ratio. The main statistical programs used in the research are MS Excel, SPSS and STATA which are commonly used in these types of studies.

3.5.1 Regression Analyses

A multiple regression analysis may include all selected factors (independent variables) in one single test and compare them with the dividend rate (dependent variable) and as well as dividend policy. The regression equation used in the test:

For Model 1

$$Y_1 = \alpha + \beta_1 X_{1,t} + \beta_2 X_{2,t} + \beta_3 X_{3,t} + \beta_4 X_{4,t} + \beta_5 X_{5,t} + \beta_6 X_{6,t} + \beta_7 X_{7,t} + \beta_8 X_{8,t} + \varepsilon$$

Where;

Y_{1t} = Dividend Rate (DD%) for firm i at time t ; the percentage of total dividend paid to the common shareholders.

X_{1t} = Size (Sz), Natural Log of Total Assets for firms i at time t .

X_{2t} = Return on Equity (ROE), Net Profit after Preference Dividend/Number of Equity Shares outstanding for firm i at time t . (Pr)

X_{3t} = Growth (Gr), [(Income year(x))/(Income year (x-1))] -1 for firm i at time t .

X_{4t} = Risk (Rk), Price of Share/Earning per share ratio for firm i at time t

X_{5t} = Collateral Capacity (Clc), Fixed asset/ Total asset for firm i at time t .

X_{6t} = Last year dividend (LDv) for firm i at time t .

X_{7t} = Age of the firm for firm i at time t .

X_{8t} = Debt Ratio (Dpt/TA), [(Deposit + Placement from Banks & Other Financial institutions)/(Total Asset)] for firm i at time t .

ε = Error variable.

Table 3: Expected Signs of Independent Variables

Independent Variables	Calculations	Expected Sign
1. Size	Sz = Natural Log of Total Assets	(+)
2. Profit	ROE = Net income/Shareholders' equity	(+)
3. Risk	PE = Price of share / Earnings	(-)
4. Growth	Gr = $\left[\frac{\text{Income year (x)}}{\text{Income year (x-1)}} \right] - 1$	(-)
5. Collateral capacity	Clc = Fixed asset/ Total asset	(+)
6. Lagged dividend	Ldv = Dividend of previous year	(+)
7. Age of the firm	Counted from the date of incorporation.	(+)
8. Leverage	DP/TA = $\frac{\text{Deposit} + \text{Placement with other FI} + \text{Placement from Banks \& Other Financial Institutions}}{\text{Total Asset}}$	(-)

3.5.2 Tobit Model

In addition to the multiple regression analysis, we have also applied the Tobit model which is a type of censored regression model. The main difference between the ordinary multiple regressions and the Tobit regression is that the Tobit model takes censoring and truncation into consideration. Censoring refers to the case when data in the dependent variable is lost while the independent variables not are subject to any loss in data. Truncation refers to the case when data is lost in both the independent and dependent variable. The Tobit model is a development of the Probit model and it was created by James Tobit in 1958. The equation for the structural Tobit model is the same as the equation applied in the multiple regression analysis:

For Model 2

$$Y_2 = \alpha + \beta_1 X_{1,t,t} + \beta_2 X_{2,t,t} + \beta_3 X_{3,t,t} + \beta_4 X_{4,t,t} + \beta_5 X_{5,t,t} + \beta_6 X_{6,t,t} + \beta_7 X_{7,t,t} + \beta_8 X_{8,t,t} + \varepsilon$$

Here;

Y_2 = Dividend policy (DvP); method of paying dividend for firm i at time t.

The dependent variable (dividend payout ratio) is censored to zero if the observation has a negative value

Dividend Policy $Y_2 =$ Parameters

No dividend = 0

Stock Dividend = 1

Cash Dividend = 2

Both Stock and Cash =3

The equation is the cumulative distribution function for the standard normal distribution. The parameters included in β are typically estimated by the maximum likelihood method. Coefficient of correlation will be calculated by using various financial variables to determine the relationship between them. After determining their relation characteristics of cash dividend paying firms and stock dividend-paying firms, we will determine how strong the relationship of the financial variables is with dividend policy.

3.5.3 Hypothesis Testing

In order to determine whether there is a relationship between the dividend payout ratio and the selected variables we formulated a number of hypothesis which we described

earlier in this chapter. The structure of all hypotheses is the same, the null hypothesis states that there is relationship between the company selected factor and the dividend payout ratio, $H_0: r = 0$. The alternative hypothesis states that there is no relationship between the companies selected factor and the dividend payout ratio, $H_1: r \neq 0$.

Table 4: The Hypothesis

Hypothesis #	Null Hypothesis [H0]	Alternative Hypothesis [H1]
01.	Ceteris paribus, the likelihood of paying a dividend does not increase with firm size.	Ceteris paribus, the likelihood of paying a dividend increases with firm size.
02.	Ceteris paribus, the likelihood of paying a dividend does not increase for more profitable firms	Ceteris paribus, the likelihood of paying a dividend increases for more profitable firms
03.	Ceteris paribus, Risk does not have a negative relationship with the dividend policy.	Ceteris paribus, Risk has a negative relationship with the dividend policy.
04.	Ceteris paribus, mature firms with less investment opportunities are not likely to pay dividends.	Ceteris paribus, mature firms with less investment opportunities are more likely to pay dividends.
05.	Ceteris paribus, the likelihood of paying a dividend does not increase for firms with greater collateral capacity.	Ceteris paribus, the likelihood of paying a dividend increases for firms with greater collateral capacity.
06.	Ceteris paribus, the likelihood of paying a dividend does not increase for firms paid more dividends in the last year.	Ceteris paribus, the likelihood of paying a dividend increases for firms paid more dividends in the last year.
07.	Ceteris paribus, mature firms with greater age are not likely to pay dividends more.	Ceteris paribus, mature firms with greater age are more likely to pay dividends more.
08.	Ceteris paribus, the probability of paying a dividend does not increase with low financial leverage.	Ceteris paribus, the probability of paying a dividend increases with low financial leverage.

3.5.4 Multicollinearity

Since some of the independent variable used in the study is related to each other there may be a risk of multicollinearity. Multicollinearity is a statistical condition in which the independent variables are highly correlated to each other. It is possible to detect multicollinearity by investigating the correlation between the independent variables.

4. Empirical Analysis and Findings

In this section, an attempt has been done to find out the associations between Dividend and selected independent variables with assistance of few statistical apparatus. The Whole analysis is divided into two stages:

Model 1:

Method: Ordinary Least Square (OLS)

Dependent Variable: Dividend Rate (DD%)

Categories: a) Entire Islamic Financial Institutions Industry b) Islamic Banking Sector c) Islamic NBFIs

Model 2:

Method: Tobit Model

Dependent Variable: Dividend policy (DvP); method of paying dividend for firm i at time t

Categories: a) Entire Islamic Financial Institutions Industry b) Islamic Banking Sector c) Islamic NBFIs

The independent variables have been discussed earlier in the methodology section. Before moving on to the analysis section, a multicollinerity test needs to be performed to verify the data set.

4.1 Multicollinearity Tests

In order to detect and exclude multicollinearity, we need to investigate the correlation between the independent variables. A correlation higher than 0.70 (in either case positive or negative) percent indicates that multicollinearity may be a problem. Table 5 shows the correlation between the independent variables. The highest correlation among the independent variables is found between collateral and leverage. However, the correlation coefficient between this two is -0.631 which is less than 70%. However, it is not enough to look at the correlation in order to conclude whether multicollinearity is a problem and we therefore employed additional tests. We have therefore conducted VIF and tolerance

tests. It has been stated that a VIF above 4 and a tolerance below 0.25 is a sign of multicollinearity. From table 6 and 7 we have found that our dataset have overcome both VIF and Tolerance test. None of the output in these two tests is fall in area of multicollinearity. So we are in safe zone and therefore decided to use the dataset without making any change.

Table 5: Correlation Matrix

Correlation	DD%	Sz	Pr	Rk	Gr	Clc	LDv	Age	Dpt/TA
DD%	1.000								
Sz	0.318	1.000							
Pr	0.503	-0.035	1.000						
Rk	-0.250	-0.384	-0.202	1.000					
Gr	0.035	0.089	0.146	-0.135	1.000				
Clc	-0.295	-0.392	-0.333	0.111	-0.263	1.000			
LDv	0.706	0.410	0.224	-0.081	-0.032	-0.272	1.000		
Age	0.254	0.415	-0.068	-0.259	-0.193	0.082	0.289	1.000	
Dpt/TA	0.308	0.617	0.296	-0.304	0.203	-0.631	0.399	0.033	1.000

Table 6: Variance Inflation Factor (VIF)

VIF	DD%	Sz	Pr	Rk	Gr	Clc	LDv	Age	Dpt/TA
DD%									
Sz	1.11								
Pr	1.34	1.00							
Rk	1.07	1.17	1.04						
Gr	1.00	1.01	1.02	1.02					
Clc	1.10	1.18	1.12	1.01	1.07				
LDv	1.99	1.20	1.05	1.01	1.00	1.08			
Age	1.07	1.21	1.00	1.07	1.04	1.01	1.09		
Dpt/TA	1.10	1.61	1.10	1.10	1.04	1.66	1.19	1.00	

Table 7: Tolerance

Tolerance	DD%	Sz	Pr	Rk	Gr	Clc	LDv	Age	Dpt/TA
DD%									
Sz	90%								
Pr	75%	100%							
Rk	94%	85%	96%						
Gr	100%	99%	98%	98%					
Clc	91%	85%	89%	99%	93%				
LDv	50%	83%	95%	99%	100%	93%			
Age	94%	83%	100%	93%	96%	99%	92%		
Dpt/TA	91%	62%	91%	91%	96%	60%	84%	100%	

4.2 Empirical Models and Implications

As the entire analysis is formulated in such a way that there are two types of model (OLS & Tobit) and Islamic Financial industry have been divided into three separate categories, so ultimately we get six different elements to inspect. They are as follows:

Model-1a: The Impact of selected variables on dividend rate (DD%) in the whole Islamic financial industry of Bangladesh.

Model-2a: The Impact of selected variables on dividend policy (Dvp) [method of paying dividend] in the whole Islamic financial industry of Bangladesh

Model-1b: The Impact of selected variables on dividend rate (DD%) in the banking sector of the Islamic industry.

Model-2b: The Impact of selected variables on dividend policy (Dvp) [method of paying dividend] in the banking sector of the Islamic industry.

Model-1c: The Impact of selected variables on dividend rate (DD%) in the non-banking(NBFI) sector of the Islamic industry.

Model-2c: The Impact of selected factors on dividend policy (Dvp) [method of paying dividend] in the non-banking (NBFI) sector of the Islamic industry.

Model -1a: It shows the findings for Islamic Financial Industry of Bangladesh as a whole where Dividend Rate (DD%) is considered as dependent variable and OLS has been employed.

Table 8: Results for Model 1-a

R square	66.13%
Value of F test	0.00

The R square for the OLS regression is approximately 66.13%. This indicates that 66.13 percent of the variation in the dividend rate is explained by the eight company selected variables included in the test. F - Test at 95% confidence level states that the result is significant as it is less than .05. So the overall fit of the model is relatively good and it managed to explain some of the variation in the dividend rate.

Among the independent variables except Growth and Collateral all other variables conform to their expected sign. However among the variables only profitability, represented by ROE and lagged dividend, presented by LDv are showing statistically significant relationship (p-value is lower than 0.05) with their expected sign. It indicates that a 1% increase in ROE tends to increase dividend rate of the IFIs by on an average of 0.4% and 1% increase in the dividend rate of a year will tend to increase the dividend rate of next year by on an average of 0.54% (Ceteris paribus). Since no other variable is statistically significant those are not explained for the model.

Model-1b: This shows the regression for banking sector of Islamic Financial Industry of Bangladesh.

Table 9: Results for Model 1-b

R square	79.02%
Value of F test	0.00

As can be seen in the table, the R square for the OLS regression is approximately 79.02%. This indicates that 79.02 percent of the variation in the dividend rate is explained by the eight company selected factors included in the test. F - Test at 95% confidence level states that the result is significant as it is less than .05.

Among the independent variables only Profitability, Risk, Collateral and lagged dividend conform to their expected signs. However among the variables only profitability, represented by ROE, lagged dividend, presented by LDv are showing statistically significant relationship (p-value is lower than 0.05) with their expected sign. Leverage is also showing statistically significant relationship (p-value is lower than 0.05) but its sign does not conform to its expected sign. It indicates that a 1% increase in ROE tends to

increase dividend rate of the Islamic Banks by on an average of 0.47%, 1% increase in the dividend rate of a year will tend to increase the dividend rate of next year by on an average of 0.74% and 1% increase in the Dpt/TA (Leverage) of a year will tend to increase the dividend rate by on an average of 70.34% (Ceteris paribus). This is interesting because we know that the more deposit a bank can collect, the more opportunity it gets to make investment and thus the more profit it will be able to generate.

Model 1-c It shows the results of OLS for non-banking sector of Islamic Financial Industry of Bangladesh.

Table 10: Results for Model 1-c

R square	77.54%
Value of F test	0.013

As can be seen in the table, the R square for the OLS regression is approximately 77.54%. This indicates that 77.54 percent of the variation in the dividend rate is explained by the eight company selected factors included in the test. F - Test at 95% confidence level states that the result is significant as it is less than .05.

Among the independent variables except Size, Profitability and Leverage no other variable conform to their expected sign. However among the variables only profitability, represented by ROE is showing statistically significant relationship (p-value is lower than 0.05) with their expected sign.

Model 2-a: This model is about the whole Islamic Financial industry using Tobit model where dividend policy or method of paying dividend is considered to be dummy variable. From the iteration log, it's found indicating that how quickly the model converged. The log likelihood (-17.145558) can be used in comparisons of nested models. The likelihood ratio chi-square of 30.12 with a p-value of 0.0004 tells us that our model as a whole is statistically significant, that is, it fits significantly better than a model with no predictors. Among the independent variables size, profitability, age and Leverage are statistically significant. The Tobit regression coefficients give the change in the z-score or Tobit index for a one unit change in the predictor.

- For a one unit increase in size, the z-score decrease by 0.95
- For each one unit increase in profitability, the z-score decreases by 0.27
- For a one unit increase in age, the z-score increases by 0.22
- For a one unit increase in Leverage, the z-score increases by 1.21

This indicates that IFIs with higher asset base and higher profitability along with lower age and lower deposit are more likely to pay stock dividend.

Model 2-b: This model interprets results for Islamic Banks using tobit model where dependent variable is dividend payment model. The log likelihood -9.6349251 can be used in comparisons of nested models. The likelihood ratio chi-square of 30.96 with a p-value of 0.0001 tells us that our model as a whole is statistically significant, that is, it fits significantly better than a model with no predictors. Among the independent variables lagged dividend and age are statistically significant. Other findings are as follows:

- For a one unit increase in age, the z-score increases by 0.18.
- For each unit increase in lagged dividend, the z-score decreases by 0.12.

This indicates that IFIs with higher lagged dividend along with lower age more likely to pay stock dividend.

Model 2-c: This model is employed for NBFIs operating in Islamic Industry. The likelihood ratio chi-square of 13.53 with a p-value of 0.1401 tells us that our model as a whole is not statistically significant, that is, it does not fit significantly.

4.3 Summary of the Statistical Analyses

Table 11: Level of Significance and Explanatory Power of the Models

Method Used	Model		Significance	Prob > chi ²	R Square	Is the Model Significant?	
			(F)				
OLS	M-1	a	IFIs	1.437E-06	-	0.6613	Yes
		b	Banks	1.293E-05	-	0.7902	Yes
		c	NBFIs	0.0131385	-	0.7754	Yes
Tobit Model	M-2	a	IFIs	-	0.0004	0.4676	Yes
		b	Banks	-	0.0001	0.6164	Yes
		c	NBFIs	-	0.1401	0.4746	No

In this study, six different models have been executed to reach to a conclusion. Among these six models, three models for M-1a to M-1c have been formulated using OLS method to come up a solution about dividend rate of IFIs of Bangladesh and the others

three models M-2a to M-2c have been implemented using Tobit-Model to come up a solution about the way of paying dividend (dividend policy) of same industry.

From the table 11, it can be observed that except M-2c, the model used for revealing the way of paying dividend of non-bank Islamic Financial Institutions, all the models used in this analysis fit significantly. That means the models we used in this analysis succeed to reveal the answers of our research questions.

Table 12: Test of Expected Sign of the Selected Variables

Independent Variables	Expected Sign	Model-1a	Model-1b	Model-1c	Model-2a	Model-2b	Model-2c
1. Size	(+)				-0.95		
2. Profit	(+)	0.40	0.47	0.81			
3. Risk	(-)						
4. Growth	(-)						
5. Collateral capacity	(+)						
6. Lagged dividend	(+)	0.54	0.74			- 0.11918	
7. Age of the firm	(+)				0.22	0.18478	.0001905
8. Leverage	(-)		70.34		1.20		

From the table 12 the direction of the significant variables and their significance levels can be observed. It can be seen that Profit and age of the firm are the variables which turned out to be significant in case of three models and also its sign is according to the expectation. Lagged dividend and leverage is also found to be significant but drawback is that the expected signs do not match.

4.3.1 Summary of Test of Hypothesis

The summary of the test of hypothesis of the overall study is shown by the table 13.

Table 13: Test of Hypothesis Synopsis

Hypothesis #	Null Hypothesis [H0]	Model-1	Model-2
01.	Ceteris paribus, the likelihood of paying a dividend does not increase with firm size.	Accepted H0	Rejected only in case of 2a
02.	Ceteris paribus, the likelihood of paying a dividend does not increase for more profitable firms	Rejected H0	Accepted H0
03.	Ceteris paribus, Risk does not have a negative relationship with the dividend policy.	Accepted H0	Accepted H0
04.	Ceteris paribus, mature firms with less investment opportunities are not likely to pay dividends.	Accepted H0	Accepted H0
05.	Ceteris paribus, the likelihood of paying a dividend does not increase for firms with greater collateral capacity.	Accepted H0	Accepted H0
06.	Ceteris paribus, the likelihood of paying a dividend does not increase for firms paid more dividends in the last year.	Rejected H0 in case of 1a and 1b. Accepted H0 only in case of 1c	Rejected only in case 2b with opposite sign.
07.	Ceteris paribus, mature firms with greater age are not likely to pay dividends more.	Accepted except for model 1b	Rejected
08.	Ceteris paribus, the probability of paying a dividend does not increase with low financial leverage.	Rejected only in case of 1b with opposite sign.	Rejected only in case of 2a with opposite sign.

5. Conclusion

Dividend policy is an important area of research in corporate finance. Even though a number of researches have been conducted on dividend policy, a limited number of studies have revealed the applicability of the dividend theory on some listed companies in an organized stock exchange. Key factors behind the dividend decision have been studied by numerous researchers. According to Linter (1956) the dividend payment pattern of a firm is influenced by the current year earnings and previous year dividends. Baker, Farrelly and Edelman (1986) concluded that the major determinants of dividend payments are anticipated level of future earnings and pattern of past dividends. Pruitt and Gitman (1991) reported that current and past year profits are important factors influencing dividend payments. Baker and Powell (2000) concluded that dividend determinants are industry specific and anticipated level of future earnings is the major determinant. Jensen, Solberg and Zorn (1992) showed higher profit contributed by lesser director ownership, provides lower growth rate and lower level of investment, resulting higher level of dividend payout ratio. Eventually, the number of factors identified in the literature as being important to be considered in making dividend decisions increased substantially.

In this particular paper, the endeavor has been made to find out the pattern of dividend rate and also the dividend payment method for a particular Bangladeshi Financial Institution sector which is Islamic sharia based. The study focused on Islamic financial institution such as Banks and Non Bank Financial institution and different statistical instruments have been employed to observe the results. We used two different models, OLS and Tobit to examine two different aspects of dividend payment like Dividend Rate and Method of Dividend payment which are considered as dependent variables. There are eight independent variables that have been engaged to explain and draw relationships with the dependent variables. Moreover, we tried to check out eight hypotheses which are related to eight company selected variables to complement our research. Based on our whole study, calculations, analysis, results and interpretations finally we have come up with few observations:

- Firms' size does not have any relationship with dividend rate but it increases the probability of paying cash dividend.
- Profitability has a very strong relationship with dividend rate but it has no impact on cash dividend.
- Dividend is positively related with previous year dividend but it induces firms to pay stock dividend.

- Age of the firm does not have any significant relationship with dividend rate but it encourages the firm to pay cash dividend as time passes.
- Leverage of the firms does not have any significant relationship except for bank, where it is positively related but it persuades the whole industry to pay cash dividend.
- Besides risk, measured by P/E; does not have any impact on any spheres of this study. It might be due to the fact that the companies we have selected for our analysis are different in nature from other traditional FIs. These are Islamic Shariah based firms, the firms are audited in different ways, and mainly these firms are audited from the Shariah perspective as well as financial perspective. Another notable thing is that, generally more literal and Shariah conscious investor deals with this sector as a result the various risks of these firms are eliminated.
- Growth, measured by revenue growth, does not play a significant role in this analysis in any case. This result seemed quite unusual and it does not have any significant impact on this analysis. So further research is necessary in this regard.
- Collateral Capacity, measured by fixed asset to total asset, does not have any impact in this study. It may be due to the fact that the companies of our analysis are from financial sector. In this sector fixed asset are not pivotal matter of fact.

From overall study, it can be observed that the influential variables that are closely related to dividend are profitability, lagged dividend and age of the firm which have positive relation with the dependent variable. These variables are found to be statistically significant in all the models and also conform to the expected signs. Although leverage is statistically significant but it deviates from its expected sign. Finally it can be said that, the overall level of significance of the selected independent variables are not highly satisfactory so in further research it is recommended that the insignificant variables found in this study should be excluded and some other probable influential variables need to be included.

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Appendices

Appendix 1: Data Set of the Study

	Year	DvP	DD%	Sz	Pr	Rk	Gr	Clc	LDv	Age	Dpt/TA
		Y2	Y1	X1	X2	X3	X4	X5	X6	X7	X8
AIBL	2009	1.00	30.00	4.69	24.10	11.23	0.08	0.01	30.00	14.00	0.79
AIBL	2010	1.00	26.00	4.87	20.01	13.24	-0.12	0.01	30.00	15.00	0.73
AIBL	2011	1.00	21.00	5.03	18.34	10.13	2.42	0.01	26.00	16.00	0.77
AIBL	2012	1.00	17.00	5.17	13.51	10.21	0.32	0.02	21.00	17.00	0.79
AIBL	2013	1.00	13.50	5.24	14.15	7.76	0.11	0.01	17.00	18.00	0.81
EXIM	2009	1.00	35.00	4.94	25.22	7.52	0.24	0.00	26.00	10.00	0.86
EXIM	2010	1.00	35.00	5.05	27.85	11.34	0.32	0.00	35.00	11.00	0.84
EXIM	2011	1.00	14.00	5.11	13.87	12.76	0.15	0.00	35.00	12.00	0.83
EXIM	2012	1.00	10.00	5.22	13.00	10.14	0.29	0.00	14.00	13.00	0.84
EXIM	2013	1.00	11.00	5.29	9.28	7.80	0.16	0.02	10.00	14.00	0.85
FSIB	2009	1.00	10.00	4.68	11.41	15.39	1.32	0.01	0.00	10.00	0.88
FSIB	2010	1.00	12.00	4.80	14.00	25.21	0.57	0.01	10.00	11.00	0.89
FSIB	2011	1.00	10.00	4.96	12.75	15.37	0.31	0.01	12.00	12.00	0.86
FSIB	2012	1.00	10.00	5.11	13.50	9.99	0.36	0.00	10.00	13.00	0.85
FSIB	2013	2.00	10.00	5.21	12.00	8.08	0.18	0.02	10.00	14.00	0.86
IBBL	2009	2.00	30.00	5.44	16.93	12.87	0.19	0.02	30.00	26.00	0.88
IBBL	2010	0.00	35.00	5.52	19.00	13.29	0.27	0.02	30.00	27.00	0.88
IBBL	2011	2.00	32.00	5.59	17.42	11.27	0.30	0.02	35.00	28.00	0.88
IBBL	2012	2.00	25.00	5.68	13.42	12.21	0.12	0.03	32.00	29.00	0.87
IBBL	2013	2.00	18.00	5.74	11.36	11.17	-0.92	0.03	25.00	30.00	0.86
SJIB	2009	1.00	25.00	2.57	22.90	12.24	0.31	0.01	22.00	8.00	0.81

SJIB	2010	1.00	30.00	2.62	30.71	17.04	0.16	0.02	25.00	9.00	0.80
SJIB	2011	1.00	25.00	2.70	14.75	12.38	0.58	0.01	30.00	10.00	0.78
SJIB	2012	1.00	20.00	2.77	17.93	11.01	0.51	0.02	25.00	11.00	0.77
SJIB	2013	1.00	10.00	2.84	11.92	8.60	-0.11	0.02	20.00	12.00	0.79
SIBL	2009	1.00	11.00	2.57	30.12	16.74	0.35	0.02	10.00	14.00	0.79
SIBL	2010	1.00	14.00	2.62	49.35	28.09	0.54	0.02	11.00	15.00	0.81
SIBL	2011	2.00	10.50	2.70	12.41	15.23	0.69	0.03	14.00	16.00	0.79
SIBL	2012	3.00	15.00	2.77	16.99	9.33	0.31	0.02	10.50	17.00	0.81
SIBL	2013	2.00	12.00	2.84	11.77	7.47	-0.19	0.02	15.00	18.00	0.81
IFIL	2009	1.00	25.00	2.57	27.41	63.67	0.07	0.01	16.00	8.00	0.61
IFIL	2010	1.00	16.00	2.62	13.36	84.07	0.08	0.01	25.00	9.00	0.59
IFIL	2011	1.00	10.00	2.70	2.91	137.60	0.19	0.02	16.00	10.00	0.60
IFIL	2012	1.00	10.00	2.77	6.62	29.35	0.24	0.02	10.00	11.00	0.51
IFIL	2013	3.00	10.00	2.84	6.21	24.29	0.13	0.02	10.00	12.00	0.53
IIBL	2009	0.00	0.00	2.57	5.87	67.87	-0.24	0.07	10.00	10.00	0.13
IIBL	2010	1.00	20.00	2.62	15.04	0.00	0.09	0.06	0.00	11.00	0.17
IIBL	2011	1.00	10.00	2.70	7.62	45.00	0.02	0.06	20.00	12.00	0.15
IIBL	2012	1.00	12.00	2.77	10.80	0.00	0.58	0.05	10.00	13.00	0.26
IIBL	2013	1.00	15.00	2.84	13.98	16.84	-0.07	0.05	12.00	14.00	0.21
TIIL	2009	1.00	15.00	2.57	14.58	23.49	-0.13	0.02	0.00	18.00	0.12
TIIL	2010	1.00	15.00	2.62	18.26	40.57	0.21	0.02	15.00	19.00	0.13
TIIL	2011	1.00	17.00	2.70	11.28	37.12	0.12	0.02	15.00	20.00	0.13
TIIL	2012	1.00	15.00	2.77	12.97	19.86	0.43	0.03	17.00	21.00	0.16
TIIL	2013	1.00	15.00	2.84	12.17	19.04	0.02	0.02	15.00	22.00	0.13

Appendix 2: Model-1a (whole industry): The Impact of company selected factors on dividend rate (DD%) in the whole Islamic financial industry of Bangladesh.

SUMMARY OUTPUT								
M-1a	whole industry							
<i>Regression Statistics</i>								
Multiple R	0.813195							
R Square	0.661285							
Adjusted R Square	0.586015							
Standard Error	5.394623							
Observations	45							
<i>ANOVA</i>								
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>			
Regression	8	2045.407	255.6759	8.785521	1.437E-06			
Residual	36	1047.671	29.10196					
Total	44	3093.078						
	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95.0%</i>	<i>Upper 95.0%</i>
Intercept	3.26	5.60	0.58	0.56	-8.11	14.62	-8.11	14.62
Sz	0.77	1.05	0.73	0.47	-1.36	2.89	-1.36	2.89
Pr	0.40	0.12	3.33	0.00	0.16	0.64	0.16	0.64
Rk	-0.04	0.04	-1.09	0.28	-0.12	0.04	-0.12	0.04
Gr	0.02	1.90	0.01	0.99	-3.84	3.88	-3.84	3.88
Clc	-39.74	69.07	-0.58	0.57	-179.83	100.35	-179.83	100.35
LDv	0.54	0.10	5.29	0.00	0.34	0.75	0.34	0.75
Age	0.05	0.18	0.30	0.76	-0.30	0.41	-0.30	0.41
Dpt/TA	-6.25	4.72	-1.32	0.19	-15.83	3.33	-15.83	3.33

Appendix 3: Model-1b (bank): The Impact of company selected factors on dividend rate (DD%) in the banking sector of the industry.

SUMMARY OUTPUT								
M-1b		Bank						
<i>Regression Statistics</i>								
Multiple R	0.888947							
R Square	0.790228							
Adjusted R Square	0.710314							
Standard Error	4.84079							
Observations	30							
<i>ANOVA</i>								
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>			
Regression	8	1853.769	231.721	9.8885	1.293E-05			
Residual	21	492.0982	23.4332	5				
Total	29	2345.867						
	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95.0%</i>	<i>Upper 95.0%</i>
Intercept	-56.00	23.45	-2.39	0.03	-104.76	-7.24	-104.76	-7.24
Sz	-0.28	1.54	-0.18	0.86	-3.48	2.93	-3.48	2.93
Pr	0.47	0.15	3.06	0.01	0.15	0.80	0.15	0.80
Rk	-0.44	0.26	-1.69	0.11	-0.97	0.10	-0.97	0.10
Gr	1.89	1.85	1.02	0.32	-1.95	5.74	-1.95	5.74
Clc	63.11	225.31	0.28	0.78	-405.45	531.66	-405.45	531.66
LDv	0.74	0.12	6.34	0.00	0.50	0.98	0.50	0.98
Age	-0.10	0.32	-0.32	0.75	-0.76	0.56	-0.76	0.56
Dpt/TA	70.34	30.80	2.28	0.03	6.30	134.39	6.30	134.39

Appendix 4: Model 1c (NBFI): The Impact of company selected factors on dividend rate (DD%) in the non-banking sector of the industry.

SUMMARY OUTPUT								
M-1c		NBFI						
<i>Regression Statistics</i>								
Multiple R	0.880566							
R Square	0.775396							
Adjusted R Square	0.475924							
Standard Error	4.046126							
Observations	15							
<i>ANOVA</i>								
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>			
Regression	8	339.1065	42.38831	2.58921	0.0131385			
Residual	6	98.22682	16.37114					
Total	14	437.3333						
	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95.0%</i>	<i>Upper 95.0%</i>
Intercept	-28.41	57.42	-0.49	0.64	-168.90	112.08	-168.90	112.08
Sz	14.15	29.99	0.47	0.65	-59.23	87.53	-59.23	87.53
Pr	0.81	0.29	2.77	0.03	0.10	1.53	0.10	1.53
Rk	0.02	0.08	0.24	0.81	-0.17	0.21	-0.17	0.21
Gr	3.82	8.11	0.47	0.65	-16.03	23.66	-16.03	23.66
Clc	-69.77	252.02	-0.28	0.79	-686.43	546.89	-686.43	546.89
LDv	-0.13	0.25	-0.50	0.64	-0.75	0.49	-0.75	0.49
Age	-0.16	1.52	-0.10	0.92	-3.87	3.55	-3.87	3.55
Dpt/TA	-3.44	41.36	-0.08	0.94	-104.64	97.76	-104.64	97.76

Appendix 5: Model-2a (whole industry): The Impact of company selected factors on dividend policy (Dvp) [method of paying dividend] in the whole Islamic financial industry of Bangladesh.

tobit dvp dd sz pr rk gr clc ldv age dptta, ll(1)						
Tobit estimates		Number of obs =		45		
		LR chi2(9) =		30.12		
		Prob > chi2 =		0.0004		
Log likelihood =		-17.145558		Pseudo R2 =		0.4676

dvp	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
-----+-----						
dd	.0966089	.0960929	1.01	0.321	-.0982765	.2914943
sz	-.9511506	.3488473	-2.73	0.010	-1.658646	-.2436554
pr	-.2671699	.1522346	-1.75	0.088	-.575916	.0415763
rk	-.0213059	.0245028	-0.87	0.390	-.071	.0283882
gr	.1172772	.7964072	0.15	0.884	-1.497911	1.732466
clc	9.290765	36.95422	0.25	0.803	-65.65587	84.2374
ldv	-.1004949	.0648023	-1.55	0.130	-.2319199	.0309302
age	.2200386	.0953196	2.31	0.027	.0267214	.4133557
dptta	1.214927	2.356775	2.64	0.012	1.435167	10.99469
_cons	-.0437205	2.175639	-0.02	0.984	-4.456121	4.36868
-----+-----						
_se	.9180769	.2443906	(Ancillary parameter)			

Obs. summary:		36 left-censored observations at dvp<=1				
		9 uncensored observations				

Appendix 6: Model-2b (bank): The Impact of company selected factors on dividend policy (Dvp) [method of paying dividend] in the banking sector of the industry.

```

tobit dvp dd sz pr rk gr clc ldv age, ll(1)

Tobit estimates                Number of obs =      30
                               LR chi2(8)   =    30.96
                               Prob > chi2   =    0.0001
Log likelihood = -9.6349251          Pseudo R2   =    0.6164
-----+-----
      dvp |   Coef.  Std. Err.   t   P>|t|   [95% Conf. Interval]
-----+-----
      dd |  .0679754  .0611403    1.11  0.278   -.0588218   .1947726
      sz | -.3868729  .1958929   -1.97  0.061   -.7931299   .019384
      pr |  .0137005  .0788922    0.17  0.864   -.1499118   .1773129
      rk | -.2579974  .1373864   -1.88  0.074   -.5429195   .0269246
      gr |  .7787506  .4655557    1.67  0.109   -.1867527   1.744254
      clc | 119.6953   77.7365    1.54  0.138   -41.5203    280.911
      ldv | -.119178  .054403   -2.19  0.039  -.2320029   -.006353
      age | .1847786  .0890572    2.07  0.050  .0000853    .3694718
      _cons | .4813859  1.701668    0.28  0.780   -3.047658   4.01043
-----+-----
      _se |  .5320687  .1452007          (Ancillary parameter)
-----+-----

Obs. summary:  22 left-censored observations at dvp<=1
                8  uncensored observations

```

Appendix 7: Model-2c (NBF1): The Impact of company selected factors on dividend policy (Dvp) [method of paying dividend] in the non-banking sector of the industry.

```

. tobit dvp dd sz pr rk gr clc ldv age dptta, ll(0)
Tobit estimates                Number of obs =    15
                                LR chi2(9)   =   13.53
                                Prob > chi2  =   0.1401
Log likelihood = -7.489641      Pseudo R2   =   0.4746
-----+-----
dvp |   Coef.  Std. Err.   t   P>|t|   [95% Conf. Interval]
-----+-----
dd |   .0376723  .0432634   0.87  0.417   -.0681894   .143534
sz |   .5620451  3.721547   0.15  0.885   -8.544253   9.668344
pr |  -.0513614  .0446844  -1.15  0.294   -1.607002   .0579774
rk |  -.0110817  .008304   -1.33  0.230   -.031401   .0092375
gr |  -.4966012  .9025874  -0.55  0.602   -2.705153   1.711951
clc | -3.605661  34.11544  -0.11  0.919   -87.08314   79.87181
ldv | .0001905  .0254812   0.01  0.994   -.0621597   .0625408
age |   .041286  .1927355   0.21  0.837   -.4303207   .5128927
dptta | 2.638507  5.291052   0.50  0.636  -10.30823   15.58524
_cons | -1.113068  6.368002  -0.17  0.867  -16.69501   14.46887
-----+-----
   _se | .3959501  .0757565          (Ancillary parameter)
-----+-----

Obs. summary:    1 left-censored observation at dvp<=0
                 14 uncensored observations

```