

Determinants of Stock Price of Financial Sector - A Study on Banks and Non-Bank Financial Institutions in Bangladesh

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ABSTRACT

This study investigates the impact of some selected variables like dividend, Price Earnings Ratio (P/E), Net Asset Value (NAV), Earnings per Share (EPS), Dividend Payout Ratio, and the size on the movement of the share price of the financial sector in Bangladesh. The financial sector includes banks and non-bank financial institutions. The sample size includes 30 banks and 18 non-bank financial institutions listed on the Dhaka Stock Exchange (DSE) of Bangladesh. Secondary data was collected from these companies from 2011 to 2015. This study uses multiple regression analysis through SPSS 20. The findings demonstrate that the impact of the variables varies among companies. For the banks, factors comprise of dividend, P/E, NAV, EPS, Dividend Payout Ratio and size are primary factors that have significant effects on stock prices of financial sectors in Bangladesh. Whereas the non-bank financial institutions are only affected by dividend, P/E, Dividend Payout Ratio and NAV.

Keywords: Stock Price, Dhaka Stock Exchange, Banks, Non-Bank Financial Institutions.

1. INTRODUCTION

The capital market plays a crucial role in the formation of capital from savers to borrowers. The stock market, which is included in the capital market, is essential in sustaining the growth in the economy as it facilitates the movements of funds among investors, government and other stakeholders (Uddin, Rahman and Hossain, 2013). The stock market is important in the economy because it is one of the major places of investment. The investment decision of the investors of the stock market is greatly influenced by the market price of a share (Uddin, Rahman and Hossain, 2013). The yields from such investments vary depending on the performance of the individual stock in a market and the fluctuations of the stock price (Bhattacharai, 2014). The price of the stocks is affected by various factors related to the company, industry and the economy as a whole. Numerous studies have been conducted by different researchers examining the impacts of factors on stock price movements. Different theories like the Capital Asset Pricing Model (CAPM), and Arbitrage Pricing Theories (APT) have been developed and tested in different countries on different perspectives. Due to differences in geographic location, time, income level, taste, the degree of risk averseness, government policy, and stock market rules and regulations; no single model or theory has been found to be effective and acceptable for every stock market. There are different researchers who have examined the factors affecting stock price movements by incorporating different variables at different times and also applying different methods.

Bangladesh is a developing the country with huge potential for development. Development of a country requires both money market and capital market. The investment flow is essential for the development of business and industries. The investment flow processed and accumulated by the capital markets will help speed up the economic growth. There are two stock exchanges

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in Bangladesh located at Dhaka and Chittagong. The stock exchange is dominated by the financial sector, which includes banking companies and non-bank financial institutions. Though the reasons for price movements in the stock exchange of Bangladesh have been explained by different researchers, no specific in-depth study has been conducted on financial sectors. The financial sector is different than other industrial sectors in terms of the nature of financial positions and performances. The investment decision should be made based on proper analysis and identification of the relevant influential factors that could affect the price movements. This study aims to identify the influential factors that influence the movements of stock price for banking and non-banking financial companies listed at Dhaka Stock Exchange. The investors are supposed to gain benefit for making proper investment decisions based on the identified factors. The policymakers of the financial sectors will also be benefitted by managing the influential factors in making the price competitive.

2. LITERATURE REVIEW

Figeac, Lipchev, & Dietrich (2017) tested the effect of bank-specific, industry and macroeconomic determinants on the price movements of share of 10 commercial banks in Europe from 2007 to 2016. They performed panel regression and found that as bank specific determinants, (ROAE) and Equity/Assets ratios were the most influential ones. Wadud (2017) explored the impact of some determinants such as net asset value per share, interest rate, dividend per share, book to market ratio, Price Earnings Ratio (P/E ratio), leverage, earning per share, Return on Equity (ROE), total number of share outstanding, book value per share, total size of the company, and the total age of the company on the share price movements of 30 commercial bank of Bangladesh listed in Dhaka Stock Exchange (DSE). He used pooled Ordinary Least Squares (OLS), the random effects, and the fixed effects model in the sample from 2007 to 2016. He found that dividend per share, net asset value per share, return on equity, leverage, earnings per share, book value per share, book to market ratio, price to earnings ratio, total size of the bank, and total age of the bank are the important determinants in the fixed effect model.

Arshad, Arshaad, Yousaf & Jamil (2015) used linear multiple regression analysis to explore the internal and external factors that affect the share price of commercial bank listed in Karachi stock exchange from 2007 to 2013. It was found that earning per share, book to market value ratio, and interest rate were positively and negatively related with share price respectively. In the year 2015, Greogoriou, Healy and Gupta (2015) used panel data analysis from telecom sector of 160 countries and 45 companies from 2000 to 2011 in order to identify the determinants of the stock prices. They found that capital expenditures and book value have a significant impact on stock prices.

Almumani (2014) investigate the impact of dividend per share, earning per share, size, price earnings ratio, book value, dividend payout ratio, and the market price on share prices. Almumani (2014) used the listed banks in the Amman Stock Exchange from 2005 to 2011. By using ratio analysis, correlation, and linear multiple regression models, they discovered that among the variables, EPS, BV, P/E and S are the most important as the determinants of the share price.

Rahman, Uddin and Hossain (2013) used EPS, NAV, NAPT, and P/E Ratio to study the determinants of stock prices in financial sector companies in DSE by using data from 2005 to 2010. This study used simple and multiple regression analysis and concluded that there is a positive relationship between stock price and EPS, NAV, NAPT, P/E Ratio. The regression analysis indicates that EPS and NAV have a strong effect on stock price. On the other hand, the NAPT and P/E affect stock price positively but they are statistically insignificant among the variables.

By using data from 221 Pakistani firms from 1995 to 2006, the study by Nisa and Nishat (2011) stated that share price is mostly affected by the firm size and earnings per share. Bhatt and Sumangala (2012) used data of 50 Indian companies between 2006-2007 and 2010-2011 about EPS and market value of equity share and found the EPS as the major determinants of share price movements.

Sharma (2011) used some selected variables such as book value per share, dividend per share, earning per share, price earnings ratio, dividend yield, dividend payout, size in terms of sale and net worth to study their impact on stock price. Although earning per share, dividend per share and book value per share significantly affect the market price of a share; dividend per share and earnings per share have the strongest effect on market price. Dividend per share and price-earnings ratio are found as the major determinants of share prices for data collected from 2000 to 2009 from Indian stock markets (Nirmala *et al.*, 2011).

According to Al-Shubiri (2010), net asset value per share (NAV), earnings per share (EPS), and dividend percentage have a significant positive impact on the price of the stock. The study used simple and multiple regression analysis and collected data from 14 commercial banks listed in Amman Stock Exchange, Jordan.

A significant relationship was found between net asset value per share, dividend percentage, earnings per share, and the market price of the stock (Uddin, 2009). Data were collected from December 2007 to November 2008 by using random sampling from 62 companies listed on the DSE. On the other hand, AL-Omar and AL-Mutairi (2008) studied data from seven Kuwaiti banks from 1980 to 2004 and concluded that earnings per share and book value per share affects the movements of share prices.

Sharma and Singh (2006) identified that earnings per share, price-earnings ratio, dividend per share, dividend coverage, dividend payout, book value per share, and firm size are the major determinants of share prices by using data of 160 Indian firms from 2001 to 2005. Amidu and Abor (2006) stated a key relationship between dividend, earning, and stock prices by using OLS Regression Model in Ghana.

The conducted studies discussed above have identified various factors that influence the movement of prices in different countries including Bangladesh. There are very few studies in Bangladesh on the determinants of stock prices in general. No studies have been conducted on financial sectors elaborating the factors that influence the prices. The financial sector is very influential and significant in Bangladesh, therefore, it would be helpful if specific factors that influence the price movement of stocks of financial sectors in Bangladesh are examined and identified.

3. METHODOLOGY OF THE STUDY

3.1 Model and Data

This study was conducted based on the secondary data collected from DSE's websites. Only companies associated with the financial sector (banks and non-bank financial institutions) were selected for this study. A total of 48 financial companies (30 banks and 18 non-bank financial institutions) were selected and their data on variables were collected from 2011 to 2015. Therefore, the total sample size is 240. Table 1 specifies the variables:

Table 1 Variable and the corresponding equation

Variables	Type	Equations
stock price	Dependent	the closing price of the stock at the end of the financial year of the bank has been taken
Dividend per Share	independent	The total amount of dividend paid to equity shareholders/Number of equity shares outstanding
Earnings per Share (EPS)	Independent	[Net Profits after Tax – Preference Dividend] / Number of Equity Shares Outstanding
Net asset value (NAV)	Independent	[Equity Share Capital + Shareholders Reserves]/Total No. of Equity Shares Outstanding
Dividend Payout Ratio	Independent	{Dividend per Share/ Earning Per Share }X 100
Price /Earnings Ratio (P/E)	Independent	Market Price of Share/ Earnings per Share
Size	Independent	The natural logarithm of total assets

The stepwise multiple regression model has been applied for the analysis of data using statistical software SPSS 20. This study uses the following model:

$$\text{Stock price} = \beta_0 + \beta_1 \text{Dividend} + \beta_2 \text{EPS} + \beta_3 \text{NAV} + \beta_4 \text{Dividend Payout} + \beta_5 \text{P/E} + \beta_6 \text{Size} + \epsilon$$

The following hypotheses were developed in this study:

- H₁: There is a relationship between Earnings per Share (EPS) and stock price
- H₂: There is a relationship between Net Asset Value per Share (NAV) and stock price
- H₃: There is a relationship between dividend and stock price
- H₄: There is a relationship between Price Earnings Ratio (P/E) and stock price
- H₅: There is a relationship between dividend payout ratio and stock price

The hypotheses were developed based on the previous studies where researchers identified that EPS, NAV, DPS, P/E Ratio, size and D/P ratio significantly affecting the stock prices. As per those studies, we assume to have a significant positive relationship between stock price (as dependent variables) and EPS, dividend per share, dividend payout ratio, price-earnings ratio, size and net asset value (as independent variables). The relationship can be tested by using regression analysis.

4. RESULTS AND DISCUSSION

4.1 Multiple Regression Analysis for Commercial Bank

Tables 2 shows the results extracted from the regression analysis of commercial bank. In Table 2, the R-value is 0.951. Therefore, the R-value (.951) suggest that these factors have a strong effect on the stock price. In addition, the coefficient of determination (R-square value) of 0.904 representing 90.4% variation of stock price of a commercial bank is due to the independent variables, which in fact, is a strong explanatory power of regression.

Table 2 Model Summary

Model	R	R Square	Adjusted R Square	Std. error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.951 ^a	.904	.899	7.70570	.904	215.601	6	138	.000

a. Predictors: (Constant), Size, Dividend, Dividend payout, Net Asset Value, Price Earning, Earning Per Share

Source: SPSS, Version 20

Table 3 ANOVA^a

Model	Sum of Squares	df	Mean Square	F	Sig.
1					
Regression	76811.610	6	12801.935	215.601	.000 ^b
Residual	8194.133	138	59.378		
Total	85005.742	144			

a. Dependent Variable: Price

b. Predictors: (Constant), Size, Dividend, Dividend payout, Net Asset Value, Price Earning, Earning Per Share

Source: SPSS, version 20

From the Table 3, it is tested that the overall model was reasonably fit and there was a statistically significant association between stock price and independent variables (size, dividend, dividend payout, net asset value and price earning).

Table 4 Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
1							
(Constant)	38.536	20.543		1.876	.063		
Dividend	.631	.143	.222	4.413	.000	.276	3.628
Earning Per Share	5.954	.805	.512	7.401	.000	.146	6.860
Price Earning	1.870	.153	.475	12.224	.000	.462	2.163
Net Asset Value	.354	.082	.203	4.292	.000	.312	3.201
Dividend payout	-2.008	.359	-.239	-5.601	.000	.384	2.607
Size	-4.460	1.703	-.076	-2.619	.010	.828	1.208

a. Dependent Variable: Price

In Table 4, unstandardized coefficients indicate how much the dependent variable varies with an independent variable when all other independent variables are held constant. It is found that all the factors i.e. dividend, earning per share, price earning, net asset value, dividend payout, and size have a significant impact on the stock price of commercial bank of Bangladesh. Among the variables, dividend, earning per share, price earnings, and net asset value are positively related to stock price of the commercial bank of Bangladesh. Whereas, the dividend payout ratio and size are negatively related to the stock price.

4.2 Multiple Regression Analysis for Non- Bank Financial Institutions

Table 5 indicates that R-value is 0.785. The R-value (.785) suggest that there is a strong effect of these factors on the stock price. From Table 5, it is also seen that the coefficient of determination, i.e. the R-square (R^2) value is 0.617, which represent 61.7% variation of the stock price of non-financial institutions is due to the independent variables, which in fact, is a strong explanatory power of regression.

Table 5 Model summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.785 ^a	.617	.586	19.18866	.617	20.130	6	75	.000

a. Predictors: (Constant), Size, Dividend, Price Earning, Earning Per Share, Net Asset Value, Dividend Payout

Source: SPSS, Version 20

Table 6 ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	44471.334	6	7411.889	20.130	.000 ^b
	Residual	27615.351	75	368.205		
	Total	72086.684	81			

a. Dependent Variable: Price

b. Predictors: (Constant), Size, Dividend, Price Earning, Earning Per Share, Net Asset Value, Dividend Payout

Source: SPSS, version 20

From the Table 6, it is tested that the overall model was reasonably fit and there was a statistically significant association between stock price and independent variables (size, dividend, dividend payout, net asset value and price earning).

From Table 7, unstandardized coefficients indicated how much the dependent variable varies with an independent variable when all other independent variables are held constant. It was found that dividend, price earnings, net asset value and dividend payout have a significant impact on the stock price of non-bank financial institutions in Bangladesh. Among the variables, dividend, price earnings ratio and net asset value are positive and the dividend payout ratio is negatively related to the stock price of the non-bank financial institutions of Bangladesh.

Table 7 Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	17.866	35.873		.498	.620		
Dividend	1.545	.392	.495	3.938	.000	.324	3.089
Earning Per Share	-.861	2.610	-.055	-.330	.742	.182	5.492
1 Price Earning	.386	.078	.708	4.918	.000	.246	4.062
Net Asset Value	1.190	.461	.374	2.582	.012	.243	4.108
Dividend payout	-2.054	.565	-.579	-3.635	.001	.201	4.965
Size	-1.572	3.960	-.036	-.397	.693	.609	1.642

a. Dependent Variable: Price

Source: SPSS, version 20

5. CONCLUSION

This study found that among the selected variables; dividend, earning per share, price earning, and net asset value positively affects the price of the commercial banks. Oppositely, dividend, price earnings ratio, and NAV positively affect the price of the non-bank financial institutions. The findings imply that if a dividend, earning per share, price earning, and net asset value increased, the stock prices of the banks will also increase. On the other hand, the stock price of the non-bank financial institutions may increase if dividend, price earnings ratio and net asset value increased. Overall, it is examined that dividend, price earnings ratio, net asset value and dividend payout ratio are the primary factors that affect the stock price of the financial sectors of Bangladesh. Among the factors, dividend, price earnings ratio, and net asset value positively affect the stock price while the dividend payout ratio negatively affects the stock price. The investors may expect higher prices of the stock of commercial banks if the dividend, earning per share, price earnings ratio and net asset value are higher. The investors of non-bank financial institutions may expect better prices of the stock if the rate of dividend and net asset value are higher. The management of the banks should make policies to increase their EPS, and also improve the price-earnings ratio. The management of the non-bank financial institutions may make effective policies so that the NAV can be increased and they can pay a dividend at a higher rate. There might be further study covering longer study periods to examine the impacts of factors affecting the stock prices in Bangladesh because this study only used data of five years period.

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