
The Factors Affecting Board Stock Price of Lq45 Stock Exchange 2012-2016: Case of Indonesia

Rudi Bratamanggala¹

Abstract:

The method used in this research is a descriptive method with the help of analytical tools of Eviews version 8. This research was conducted by using secondary data collected from the publication of the Indonesian Stock Exchange.

The case study in this research is a company that is included in LQ45 in Indonesian Stock Exchange in the period of 2012 to 2016. For the analysis we have used multiple regression techniques and hypothesis testing using the t test partial and the F test with the level of significance at 5% as well as the coefficient of determination test.

The factors affecting stock prices are Earning Per Share, Price to Book Value and Return on Assets. The results show that the Price to Book Value and the Earning Per Share have a significant effect on stock prices.

Also simultaneously and partially the Price to Book Value, the Earning Per Share and the Return on Assets have a significant effect.

Keywords: *Earning Per Share, Price to Book Value, Return on Assets and Stock Prices.*

¹Faculty of Economics, University Borobudur Jakarta, Indonesia
rudibrata_dong@yahoo.com

1. Introduction

The issuance of shares can be done to raise additional capital by selling part of the ownership of the company in the form of shares to investors (Alagidede and Panagiotidis, 2010). A lot of capital can be obtained through the issuance of shares, based on the number of shares issued by the company and the par value determined by the company. The greater the capital earned by the firm, the more shares bought by the investor (Eita, 2012). In the purchase of shares, various factors can be used as consideration in the purchase of shares, one of which is the stock price of the company. Investors will tend to choose stocks that continue to increase in prices. This is because investors can gain profit in the form of capital gains when investors resell the shares to other parties. Therefore, stock prices become important for investors' consideration in buying shares therefore investors should analyze the stock price of the company throughly (Tangjitprom, 2012; Thalassinos *et al.*, 2012a).

The fundamental analysis can be used by investors since it is focusing more on the financial statements by taking into account whether the stock price has been and has not been appropriately appreciated. The analysis of financial ratios would be better if it had a sufficient understanding of the company's financial performance (Geetha *et al.*, 2011; Thalassinos *et al.*, 2015a).

The financial ratios that can be used to measure stock prices are actually market ratios. The market ratios are the ratios that link the values within the firm to the market value of the firm. Market ratios that have an influence on stock prices are the Price to Book Value (PBV), the ratio that compares the stock price with the price of the book. A good PBV value is more than one, which means that the price of shares sold in the market is higher than the value issued by the company. The higher the PBV value will lead to an increase in the stock price. This is because the stock price of a company continues to increase compared with the book value of the company. If the selling value of a stock in the market continues to increase, many investors will be interested to buy the shares, since it is associated with capital gains that can be obtained by the sale of shares. The increase in demand of a company's stock, will cause an increase to the stock price (Grossi and Tamborini, 2011; Thalassinos *et al.*, 2012b).

Financial ratios analysis can be used to predict stock prices. The ratio Return on Assets, for example, which means the company's ability to generate profit over a certain period by using existing assets. Return on Aseets is used to measure the success of management in achieving profits by using the existing assets of the company. The greater the level of the company's ability to generate profits by using own assets, the more profitable and attractive the investment in the company is. This will have a positive effect on stock prices. In general, stable firms show stability in growth with a high Return on Investments (Husain and Mahmood, 2001; Thalassinos and Liapis, 2014).

2. Theory and Hypothesis

Shares are proof of possession of a company in which the owner is also called a shareholder or stockholder (Hahzadi and Chohan, 2012). Shares show proof of ownership of a company in the form of a Limited Liability Company (PT). The owner of a company is called shareholder. The responsibility of the company's owner in the form of PT is limited to the amount paid in capital. Evidence that a person or a party may be considered as a shareholder is if they are already registered as shareholders in a book called Shareholders' List (Aras and Yilmaz, 2008).

A company may decide to sell its ownership interest in stocks. If there is only one type of stock issued, this share is called a common stock. In this case, every common share has equal rights. To attract a wider investment market, the company may issue one or more types of shares with various privileges. An example is the privilege of getting a dividend first. This kind of stock is usually called preferred stock (Ali, 2011). Financial ratio analysis and trend analysis are usually used to determine the financial health and progress of the company each time the financial statements are published. Ratio analysis is to compare between elements of balance sheet, elements of income statement and financial ratios of one issuer with financial ratios of other issuer.

Price to book value (PBV) is a calculation or comparison between market value and the book value of a stock. This ratio works to complete the book value analysis. In the book value analysis, investors know the capacity per share of the value of shares, and how many times the market value of a stock is different from its book value. To calculating the price to book value we can use the following formula:

$$\text{Price to Book Value} = \frac{\text{Market Price}}{\text{Value of Share Book}}$$

Financial ratios are often used by stock investors (or potential investors) to analyze the ability of the company to gain earnings based on the stocks that are owned where earning per share (EPS) or profit of each share can be calculated using the formula below:

$$\text{Earning Per Share} = \frac{\text{Revenue After Tax}}{\text{Number of outstanding shares}}$$

EPS can be used for several kinds of analysis. First, EPS can be used to analyze the profitability of a stock by securities' analysts. EPS is easily linked to the market price of a stock and generates a PER (Price Earning Ratio) ratio. PER is the market or share price divided by its EPS. Buying a stock means buying the prospect of the company, which is reflected in earnings per share. If earnings per share are higher,

then the prospect of the firm is better, while if earnings per share are lower, they are not so good, and this negative perspective of earnings per share is a financial weakness for the company.

Return on Asset describes the asset turnover as measured by sales volume. The typical formula used is:

$$\text{ROA} = \frac{\text{Profit before tax}}{\text{Total assets}} \times 100\%$$

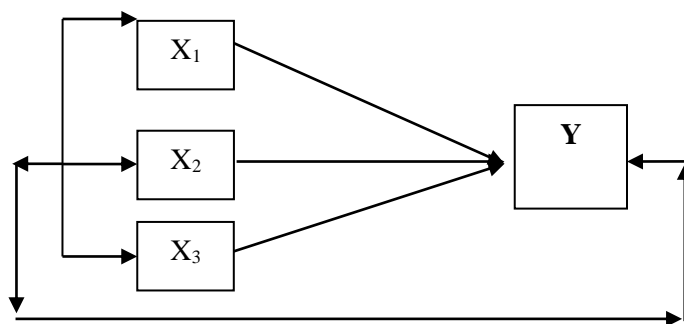
3. Hypothesis Development

1. There is a simultaneous significant influence of Price to Book Value, Earning Per Share and Return on Assets to LQ45 share price;
2. There is a partially significant positive influence of Price to Book Value on LQ45 top level share price;
3. There is a partially significant positive influence of Earning Per Share on LQ45 top level share price;
4. There is a partially significant positive influence on the Return on Asset to LQ45 top level share price.

3.1 Theoretical Framework

The theoretical framework in this research between the PBV, EPS and ROA on stock prices is as follows:

Figure 1. Thinking Framework



where:

X1: Price to Book Value (PBV)

X2: Earning Per Share (EPS)

X3: Return on Assets (ROA)

Y: Stock Price

4. Research Methodology

Data used in this research is a data pool set consisting of time series and cross section data. Estimation is done by bringing together these two kinds of data using Eviews section 8 program. First we perform three different kinds of tests. The multicollinearity, the heteroskedasticity and the autocorrelation tests before we finalize the research model.

Multicollinearity Test:

Multicollinearity test aims to test whether there is correlation between the independent variables. A good regression model should not show correlation between the independent variables. To know whether exists or not multicollinearity the correlation matrix is used. If the correlation coefficient is above 0.80 then it is suspected that there is multicollinearity problem. Conversely if the correlation coefficient is below 0.80 then it is assumed that the model does not contain multicollinearity.

Heteroscedasticity Test:

The heteroscedasticity test aims to test whether the regression model has unequal variances in the residuals from one observation to another. If the variance of the residuals from one observation to another remains the same this is a sign of homocedasticity, while if it is different a sign of heteroscedasticity. To determine the existence or not of heteroscedasticity we can use the White test. If the value of Chi-squared probability is greater than 0.05, then there is no heteroscedasticity problem, otherwise if the Chi-squared probability value is less than 0.05, it is assumed that the model has heteroscedasticity.

Autocorrelation Test:

Autocorrelation test aims to test whether the regression model has correlation in the residuals from one observation to another. A good regression model requires no autocorrelation. To detect the presence or the absence of autocorrelation we used the Breusch-Godfrey test, better known as Lagrange-Multiplier test (Lagrange Multiplier). The provision for the Lagrange-Multiplier test is in the case where the value of Chi-squared probability is greater than 0.05. In this case there is no autocorrelation problem while if the Chi squared probability value is less than 0.05, it is assumed that the regression model has autocorrelation problem.

The Model:

Given the fact that the regression equation is clear from the problems presented above the research uses the model as described in equation (1) to detect the above mentioned hypotheses regarding the influence of the selected financial ratios to share price. A multiple linear regression model is used as follows:

Model 1:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + e \quad (1)$$

Where:

Y = Stock Price

X1 = Price to Book Value

X2 = Earning Per Share

X3 = Return on Assets

A = Constant

$\beta_1 - \beta_5$ = Regression coefficients

e = Error term.

To measure the model's ability to explain the variation we can use the coefficient of determination. The value of the coefficient of determination lies between 0 and 1 ($0 < R^2 < 1$). When the coefficient of determination is approaching 1 it means that the independent variables included in the model provide almost all the information needed to predict the dependent variable.

The use of R square is biased against the number of independent variables entered into the model. When additional independent variables are added into the model, R square must increase no matter whether the independent variable is statistically significant or not. Unlike R square, the adjusted R square values can rise or fall if there are additional independent variables into the model. Therefore it is better to use the adjusted R square value to determine the best regression model.

5. Analysis

The results from the model in equation (1) above are presented in Table 1 as follows:

Table 1. Variable Free of Partial Correlation

Free variable	Coefficient	Partial Correlation	Simultaneous Correlation	
		Sig.	Sig.	R ²
Constant	3,8000	0,000	0,000	85,43%
PBV	4,8680	0,0000		
EPS	2,2638	0,0000		
ROA	3,4684	0,0000		

Determination of the correlation test is used to measure model's ability to explain the relationship between the independent variables and the dependent variable. The coefficient of determination is between zero and one ($0 \leq R^2 \leq 1$). The greater the value the better the model. Estimation results have a value of 0.8543 or 85.43%.

This means that the variables Price to Book Value, Earning Per Share and Return on Assets can explain the dependent variable Stock Price Manufacturing Company LQ45 in BEI in the period of 2012-2016 to a level up to 85.43%. The remaining 4.57% can be explained by other variables not included in this study.

Based on the results the simultaneous influence of all independent variables to the dependent variable (F-test) at significance level $\alpha = 5\%$ using Eviews version 8 is statistically significant. Therefore the interpretation is that the independent variables PBV, EPS and ROA together have a significant influence on stock prices of manufacturing companies LQ45 in BEI in the period of 2012-2016. The multiple linear regression equation of the relationship between these variables, Price to Book Value, Earning Per Share and Return on Assets, to stock price of manufacturing companies LQ45 in BEI in the period of 2012-2016 is:

$$\text{Share Price} = 3,8000 + 4,8680 \text{ PBV} + 2,2638 \text{ EPS} + 3,4684 \text{ ROA} + e \quad (2)$$

Therefore the first research hypothesis is accepted meaning that the effect of PBV, EPS and ROA on stock prices simultaneously affect the stock price positively. This is not in accordance with the research by Alagidede and Panagiotidis, (2010) which showed that there is no significant influence between ROE, EPS, PBV and PER against stock price. However, this result is in line with the research conducted by Ohlson, (2001) which shows that EPS, CR and PER have a simultaneous significant positive effect on stock price.

The second research hypothesis is accepted meaning that the PBV variable partially affects the dependent variable. The regression equation (2) shows that the value of the coefficient of EPS variable is 2,2638 and its probability value is 0,0000 therefore the hypothesis is accepted, meaning that EPS variable partially affects the dependent variable.

This result is in accordance with Alagidede and Panagiotidis, (2010) in their research on the influence of Earning Per Share (EPS) on the stock market price of manufacturing companies. They have found that EPS has a positive correlation and significant effect on stock market prices.

Grossi and Tamborini, (2011) in their research on the influence of Price Earning Ratio (PER), Debt to Equity Ratio (DER), Return on Assets (ROA) and Price to Book Value (PBV) to stock prices also found that DER and PBV have a positive and significant impact on stock prices.

Based on the results above there is evidence for an effect of capital stock ratios such as Price to Book Value (PBV), Earning Per Share (EPS) and Return on Assets (ROA) on Stock Price. The interpretation of this finding is as follows: The third and the fourth hypotheses test the effect of EPS and ROA on stock prices on a separate manner. The result obtained is that the value of Probability (sig-F) is 0.0000 in both

cases. Since the probability is less than 0.05, H₀ is rejected which means that the EPS and ROA variables partially affect the Stock Price. This is not in accordance with the research by Alagidede and Panagiotidis, (2010).

6. Conclusion

This study aimed to examine the influence of financial ratios such as Price to Book Value, Earning Per Share and Return on Assets on stock price of manufacturing companies entering LQ45 in BEI. As it has been proven taking simultaneously the variables Price to Book Value, Earning Per Share and Return on Asset we determinend statistically significant effect to stock price, with the coefficient of determination beeing 0,8543 or 85,43%. This result sypports the hypotheses set regarding the influnce of the independent variable (Price to Book Value, Earning Per Share and Return on Asset) on the dependent variable (stock price). On a partially basis the inderperndent variables Price to Book Value and Earning Per Share have a significant potitive influence on stock price too.

References:

- Alagidede, P. and Panagiotidis, T. 2010. Can common stocks provide a hedge against inflation? Evidence from African countries. *Review of Financial Economics*, 19(3), 91-100.
- Ali, M. 2011. Inflation, Output, and stock prices: Evidence from Brazil. *Journal of Applied Business Research*, 18(1), 84-92.
- Afzal, N. and Shahadat, H.S. 2011. An empirical analysis of the relationship between macroeconomic variables and stock prices in Bangladesh. *Bangladesh Development Studies*, 34(4), 95.
- Apergis, N. and Eleftheriou, S. 2002. Interest rates, inflation, and stock prices: the case of the Athens Stock Exchange. *Journal of Policy Modeling*, 24(3), 231-236.
- Aras, G. and Yilmaz, M.K. 2008. Price-earnings ratio, dividend yield, and market-to-book ratio to predict return on stock market: Evidence from the emerging markets. *Journal of Global Business and Technology*, 4, 18-31.
- Arshad, I., Rani, H. and Shaikh, A. 2012. Volatility modeling of Karachi stock exchange. *Shindh UniversityResearch Journal*, 144(1), 125-130.
- Eita, H.J. 2012. Modelling macroeconomic determinants of stock market prices : Evidence from Namibia. *Journal of Applied Business Research*, 28(5), 166-167.
- Fairfield, P.M. (1994) . P/E, P/B and the present value of future dividends. *Financial Anaiysts Journal*, 23-32.
- Farka, M. 2010. Monetary policy effects on the relation between inflation and sock returns. *Journal Policy Studies Journal*, 234-255.
- Foster, E.M. 1970. Price-earnings ratio and corporate growth. *Financial Analyst Journal*, 96-99.
- Geetha, C., Mohidin, R., Chandran, V.V. and Chong, V. 2011. The relationships between inflation and stock market: Evidence from Malaysia, United States and China. *International Journal of Economics and Management Science*, 1(1), 1-16.

- Grossi, M. and Tamborini, R. 2011. Stock prices and monetary policy: Reexamining the issue in a New Keynesian model with endogenous investment. *Economics discussion papers*, 223-237.
- Hsing, Y. 2011. The stock market and macroeconomic variables in a BRIC's country and policy implications. *International Journal of Economics and Financial Issues*, 1(1), 12-18.
- Hamilton, J.D. 1994. *Time series analysis*. Princeton University Press.
- Husain, F., Mahmood, T. 2001. The stock market and the economy in Pakistan. *The Pakistan Development Review*, 40(2), 107-114.
- Hussain, M.M., Aamir, M., Rasool, N., Fayyaz, M., Mumtaz, M. 2012. The impact of macroeconomic variables on stock prices: An empirical analysis of Karachi stock exchange. *Mediterranean Journal of Social Sciences*, 3(3), 295-312.
- Ibrahim, T.M, Agbaje, O.M. 2013. The relationship between stocks return and inflation in Nigeria. *European Scientific Journal*, 9(4), 140-157.
- Ittner, C.D., Larcker, D.F. 2001. Assessing empirical research in managerial accounting: a value-based management. *Journal of Accounting and Economics*, 32, 349-410.
- Kimani, D.K., Mutuku, C.M. 2013. Inflation dynamics o the overall stock market performancs: The case of Nairobi securities exchange in Kenya. *Economics and Finance Review*, 2(11), 1-11.
- Ohlson, J.A. 2001. Earnings, book values, and dividends in equity valuation: An empirical perspective. *Contemporary Accounting Research*, 18, 107-122.
- Omotor, 2009. Structural break, demand for and monetary policy. *Pakistan Journal of Social Sciences*, 6, 54-59.
- Penman, S.H. 1996. The articulation of price-earnings ratios and market-to-book ratios and the evaluation of growth. *Journal of Accounting Research*, 34, 235-259.
- Pourmohammad, N., Kheradyar, S., Ghahremani, H. 2015. A study into the effect of income dispersion and stock pricing on companies listed on the Tehran Stock Exchange. *International Journal of Review in Life Sciences*, 5(9), 499-508.
- Rapach, D.E. 2002. The long-run relationship between inflation and real stock prices. *Journal of Macroeconomics*, 24(3), 331-351.
- Sims, H. 1990. Can external shocks explain Asian side of Global imbalance? Lesson from VAR. Working paper, 41.
- Shahed, I., Barker, R., Clubb, C. 2008. The use of valuation models by UK investment analysts. *European Accounting Review*, 17, 503-535.
- Shahzadi, H., Chohan, M.N. 2012. Impact of gold prices on stock exchange: A case study of Pakistan: Working paper series. *Karachi Stock Exchange*, 10(2), 1-12.
- Stauropoulos, A., Samaras, I., Arsenos, P. 2012. Equity Valuation with the use of multiples. *American Journal of Applied Sciences*, 9(1), 60-65.
- Suozzo, P., Copper, S., Sutherland, G., Deng, Z. 2001. Valuation multiples: A primer global equity. *Global Equity Research*.
- Tangjitprom 2012. Mccroeconomic factos of emerging stock market: The evidence from Thailand. *International Journal Finance and Research*, 3(1), 124-130.
- Thalassinos, I.E., Haniias, P.M. and Curtis, G.P. 2012a. Time series prediction with neural networks for the Athens Stock Exchange indicator. *European Research Studies Journal*, 15(2), 23-31.
- Thalassinos, I.E., Maditinos, D. and Paschalidis, A. 2012b. Observing evidence of insider trading in the Athens Stock Exchange. *Journal of Economic Structures*, 1(1), 1-15.
- Thalassinos, I.E. and Liapis, K. 2014. Segmental financial reporting and the internationalization of the banking sector. Chapter book in, *Risk Management:*

- Strategies for Economic Development and Challenges in the Financial System, (eds), D. Milos Sprcic, Nova Publishers, 221-255, ISBN: 978-163321539-9; 978-163321496-5.
- Thalassinos, I.E., Pintea, M., Rațiu, I.P. 2015. The Recent Financial Crisis and Its Impact on the Performance Indicators of Selected Countries during the Crisis Period: A Reply. *International Journal of Economics and Business Administration*, 3(1), 3-20.
- Wahyu, M. 2017. The Influence of Crude Oil Prices in Biodiesel and its Implication on the Production of Palm Oil: The Case of Indonesia. *European Research Studies Journal*, 20(2).