

Company Performance and Macroeconomics Variables Influence on Stock Price

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Abstract—This study examined the influence of company performance and macroeconomics variables on stock price. The company performance is measured by profitability ratios. The profitability ratios used are: return on equity and net profit margin. Price earnings ratio and price to book value are used as measurement of market value ratio. Whereas the macroeconomics variables are measured by interest rate and inflation rate. The samples of this study are financial and manufacture sectors in the Indonesia Stock Exchange (IDX). Combined, those sectors have the biggest capitalization in IDX. This study uses pooled panel data of 27 companies. The data is yearly data of seven variables taken from 2009 until 2015, therefore there are 189 observed data. Using fixed effect model, result of the study showed that company performance and macroeconomic variables have strong influence on stock prices. Test of hypotheses showed that simultaneously company performance and macroeconomics variable have significant influence on stock price. Whereas partially, interest rate, price earnings ratio and return on equity have significant influence to stock price. Net profit margin, inflation and price to book value do not have significant influence on stock price.

Keywords—stock price; company performance; macroeconomics variables

I. INTRODUCTION

Financial market condition in one country is often influenced by macroeconomics condition of that country. Inflation as measured by consumer price index (CPI) is considered to be a problem for many countries. This is because once inflation takes hold; its impact on value of money is unpredictable [1]. From economic point of view, interest rate or other returns are the price of borrowing or lending [2]. Investors have many alternatives on where to invest their money. Therefore a change in the interest rate will affect stock price in many possible way, depending on the return of alternatives investment instrument open to investors.

Profitability ratios are used to measure how efficient a firm using its assets and managing operations. A company's higher profit is preferable to investors. Therefore company's higher profit is expected to drive investor to buy that company's stock and it in turn will drive the stock price up. Price earnings ratio is a measure of how much investors are willing to pay per-unit current earnings. Higher price earnings ratio often used as

indicator that the firm have significant prospect for future growth [3].

Based on the above explanation, this research is focusing on the study of company performance and macroeconomics variables influence on stock price. The purpose of this study is to measure the impact of company performance and macroeconomics variables on stock price of financial and manufacture sectors in the Indonesia Stock Exchange.

This study's research hypothesis is to predict that both company performance and macroeconomics variables simultaneously have significant effect on stock price.

This study is limited to companies' stock price in the financial sector and manufacture sector on the Indonesia Stock Exchange from 2009 to 2015. Companies' financial performance is measured by net profit margin, return on equity, price-earnings ratio, and market to book ratio. Whereas macroeconomics situation is measured by Inflation rate and interest rate.

II. THEORETICAL FRAMEWORK

Financial statements may use as a tool for performance measurement. Financial statements are the primary means of communicating financial information both within the firm and outside the firm [3]. Financial analysis is about reviewing financial statements that can be used not only to evaluate historical performance, but also for making projections and improving future financial performance [4].

Financial ratios are used to standardize financial information in order to make a comparison inside the firms across the time as well as with other peer group of companies. Net profit margin (NPM) basically measures how efficient a company in managing its business operations. Return on equity (ROE) is a concept of the accounting rate of return on stockholders' investment [3]. Price earnings ratio measures the amount that investors are willing to pay for each rupiah of a firm's earnings. Market to book ratio measures company's effectiveness in managing its business so that it create value to its shareholders. A stock that is expected to earn high return relative to its risk typically will sell at a higher M/B multiples [5]. The formulas for those financial ratios are as follows:

Net Profit Margin = (Net income)/Sales

Return on Common Equity = (Net income)/ (Common stock equity)

Price/Earnings ratio = (Market price per share of common stock)/ (Earning per share)

Market book ratio = (Market price per share of common stock)/ (Book Value per share of common stock)

Inflation is a percentage annual increase in a general price level. The demand pull inflation occurs from demand side of economy, such as increase in consumption, investment, government spending. The cost push inflation occurs because there is an increase in companies' production cost. Interest rate is the price paid for borrowing money for period of time [2]. High interest rates will reduce the present value of future cash flows, thereby reducing the attractiveness of an investment opportunity. For this reason, the interest rate is a key determinant of business investment spending. The interest rate is perhaps the most important macroeconomic factor to consider in an individual's investment analysis [6].

Study in 2013 revealed that causality between stock market and economy growth vary among countries. In Kenya there is bidirectional causality between stock market development and economic growth, while in Ghana and Nigeria there are none [7].

Study about the impact of interest rate, exchange rate and inflation on stock return in 2012 for Pakistan stock market, discovered that the relationship between independent and dependent variable is weak. The impact of interest rate and inflation on stock return is insignificant, whereas exchange rate has significant impact on stock return [8].

Study in 2013 whether movement of economic variables affect stock movement in Colombo stock market discovered that there is a relationship between macroeconomic variables and stock market performance [9].

Another study about the effect of inflation interest rate and exchange rate on stock price in Kingdom of Saudi Arabia (KSA) and United Arab Emirate (UAE) in 2012 showed different result for the two countries. In UAE, there is no significant relation between inflation and interest rate on stock price. Whereas for KSA, there is a significant relationship between inflation rate and stock price in the long run [10].

Study about relationship between financial ratio and stock return in Thailand stock exchange (SET) in 2014 discovered that ROE and PE have significant relationship with stock return [11]. Another study in 2013 about determinants of equity share prices in India, reveal that dividend per share and earning per share being the strongest determinant of market price. His study also discover that financial factor prove to be beneficial for the investor [12].

Overview of all literature studies above showed that impact of inflation and interest rate varies among countries. There is no one general result for effect of macroeconomics on stock price. The effect of financial performance to stock price is also varies among nation and industries.

III. METHOD

A. Population and Sample

Population in this study is companies in the financial and manufacture sectors in the Indonesia Stock Exchange market. Stratified random sampling is used in order to have 27 companies as samples that represent all sub-sector of the population. Sources of data used in this study are taken from published data of Indonesia Central Bank, Indonesia Statistic Central Bureau, Indonesia Stock Exchange Market and Bloomberg.

In this study, company performance is measured by financial ratios. Financial ratios used this study are: price earnings ratio (PER), price to book value (PBV), net profit margin (NPM) and return on equity (ROE). Whereas inflation rate and interest rate are used as proxy for macroeconomics variables.

B. Multiple Regression Model

This study uses multiple regression analysis technique. The model in this study is as follows:

$$=a + {}_1INF + {}_2INT + {}_3PER + {}_4PBV + {}_5NPM + {}_6ROE + e$$

Where:

is stock price

INF is inflation rate

INT is interest rate

PER is price earnings ratio

PBV is price to book value ratio

NPM is net profit margin

ROE is return on equity

e is error term

This study uses reviews program to run the data. In order to have the best multiple regression result, the following steps is taken: first the data was run with common effect model, fixed effect model and random effect model. Then several test were run, those test were: Chow test, Hausman test and Lagrange multiplier test. Based on those steps taken above, one best model will be chose.

C. The Statistical Hypotheses

$$Ho: {}_1= {}_2= {}_3= {}_4= {}_5= {}_6= 0.$$

There is no significant influence of company performance and macroeconomics variables on stock price

$$Ha: {}_1 {}_2 {}_3 {}_4 {}_5 {}_6 \neq 0.$$

There is significant influence of company performance and macroeconomics variables on stock price

IV. RESULTS AND DISCUSSION

A. Test of Classical Assumptions

Using reviews-program, result of normality test showed that the data are normally distributed, the probability of standardize residual is bigger than 0.05, with the jarque-berra coefficient of 5.379. Multicollinearity test showed that value of correlation matrix among all independent variables are all below 0.80; this means there is no multicollinearity. Heteroscedasticity test showed the probability bigger than 0.05 therefore there is no heteroscedasticity. Autocorrelation test showed a Durbin-Watson statistic of 0.708997, this value is bigger than zero and lower than dl value of 1.6969; therefore there is no autocorrelation in the data used.

B. Analysis of Regression Result

In order to have best regression result, the data is smoothed using normal logarithm. The fixed effect model is chosen for the multiple regression model. Table 1 below showed the result of fixed effect model. From table 1, the regression model in this study can be written as follows:

$$= 5.166 + .039 \text{ INF} + .102 \text{ INT} + .046 \text{ PER} - .036 \text{ PBV} + .001 \text{ NPM} + .031 \text{ ROE} + e$$

From the regression equation above; inflation, interest rate, price earnings ratio, net profit margin and return on equity have positive relation with stock price, while price to book value ratio has negative relation with stock price. The positive relation between inflation rates to stock price can be explained as follows. Inflation rate means that there is an increase in general price. This means that inflation will make people prefer to spend now rather than later. That way they can avoid further increase in price of goods. From point of view of manufacture companies this consumer decision will tend to make sales of the company increase and hence its profit margin, assuming other factors constant. Generally, investors prefer to buy stock of companies with higher profit margin. This will drive an increase in stock price of companies with higher profit margin. The same explanation is also true for positive relation of ROE and NPM to stock price. ROE and NPM are ratios that measure company's profitability performance. From investors' point of views, a company with higher ROE and NPM means that in the future that company's stock will also have an opportunity to growth higher. Investors will drive to buy that stock, this in turn will drive stock price to increase. Positive relation between interest rate and stock price in this study is also justified by theory. Stock is a risky investment therefore its return is expected to be higher than that of saving and time deposit. When interest rate is high, investor will expect that required return from investing in stock will be higher. Higher return of investing in stock is literally means that there is an increase in stock price. The explanation for relation of market value to stock price is as follow: theoretically a company which has better market value will have higher stock price. However, the regression result in this study showed that positive relation between market value and stock price is true only for PER and not for PBV. The regression result show negative relation of PBV to stock price that is contrary to theory. However, in this

study the influence of PBV to stock price turn out to be not significant, as showed by t-stat result in table 1. Therefore, in this study the role of PBV in influencing stock price cannot be analyzed individually.

The regression coefficient of .039 means that if inflation rate increase by one percent, the stock price will increase by Rp.039 assuming all other independent variables constant. The regression coefficient of .102 means that an increase of interest rate by one percent will increase stock price by Rp.102 assuming all other independent variables constant. The regression coefficient of .046 means that one time increase of price earnings ratio will increase stock price by Rp.046 assuming all other independent variables constant. The regression coefficient of .036 means that one time increase of price to book value will decrease the stock price by Rp.036 assuming all other independent variables constant. The regression coefficient of .001 means that an increase of net profit margin by one percent will increase stock price by Rp.001 assuming all other independent variables constant. The regression coefficient of .031 means that an increase of return on equity by one percent will increase stock price by Rp.031 assuming all other independent variables constant.

TABLE I. FIXED EFFECT MODEL

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	5.166228	0.320882	16.10009	0.0000
INF	0.038551	0.041866	0.920803	0.3586
INT	0.102404	0.036923	2.773476	0.0062
PER	0.046320	0.007263	6.377894	0.0000
PBV	-0.035928	0.020655	-1.73938	0.0839
NPM	0.001026	0.000873	1.174562	0.2420
ROE	0.031022	0.007467	4.154800	0.0001

Sources: research data, processed

TABLE II. CROSS-SECTION FIXED (DUMMY VARIABLES)

R-squared	0.959156	Mean dependent var	7.004466
Adjusted R-squared	0.950778	S.D. dependent var	1.706192
S.E. of regression	0.378538	Akaike info criterion	1.052313
Sum squared resid	22.35337	Schwarz criterion	1.618333
Log likelihood	-66.44362	Hannan-Quinn criter.	1.281622
F-statistic	114.4813	Durbin-Watson stat	0.847512
Prob(F-statistic)	0.000000		

Sources: research data, processed

C. Result of Coefficient of Determination

Table II showed that the coefficient of determination of the regression model is showed by adjusted R-square of .9507. This means both company performance and macroeconomics variable simultaneously can explain 95% fluctuation of stock price, while 5% of stock fluctuation is explained by other variables. This high value of adjusted R-square is justifiable since samples in this study are companies in financial and manufacture sectors. For companies whose main business is in financial sectors such as bank, insurance, financing company etc. Interest rate play dominant role influencing their business. As for manufacture sector, inflation will increase their nominal values of sales through increase in their product sales price. Interest rate, on the other hand, will influence companies' credit sales. This increase in sales will in turn increase the company performance.

D. Testing of Hypothesis

Table II showed that probability F-statistic is lower than .05. Therefore result of this study reject H_0 or accept H_a . This mean that inflation, interest rate, price earnings ratio, price to book value, net profit margin and return on equity simultaneously have significant effect on stock price. Whereas partially, there are three independent variables that have significant influence to stock price. They are: interest rate, price earnings ratio and return on equity. Inflation rate, net profit margin and price to book value do not have significant influence to stock price.

IV. CONCLUSION

Result of this study showed that company performance and macroeconomics variable do have relative high impact on stock price as measured by adjusted R-square. High value of adjusted R-square is justifiable for companies which main business in financial and manufacture sector. Of two macroeconomics variables used in the study, only interest rate has significant effect to stock price. Inflation rate on the other hand do not have significant effect on stock price. Of two profitability ratio used, only ROE has significant influence on stock price. Of two market ratios used, only PER has significant influence on stock price. In general the relation between independent variables to stock price mostly supports the theory except for price to book ratio. There is significant influence of company performance and macroeconomics variables on stock price.

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