

The effect of fundamental and technical variables on stock price (Study on manufacturing companies listed in Indonesia Stock Exchange)

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ABSTRACT

A capital market is any trade in securities which are called stock exchanges. In the capital market, the sellers and buyers meet in order to raise capital. More specifically, stock price used by investors is one of the important information before deciding investment. Therefore, the investors must have guidelines when investing to be done. This study aims to analyze the effect of fundamental and technical variables on stock prices. The variables used in this study are Debt Equity Ratio (DER), Return On Equity (ROE), Price Earnings Ratio (PER), Interest Rates (IR), and Exchange Rates (ER). Data analysis was performed on 45 manufacturing companies listed in Indonesia stock Exchange during 2007-2011 by using multiple analysis regression. The results showed that Return on Equity, Price Earnings Ratio and Exchange Rate have positive effect to stock prices, but Debt to Equity Ratio and Interest Rates has no effect on stock prices. The practical implication is that in determining stock prices not only from the company's internal factors, but also from external companies.

ABSTRAK

Pasar modal merupakan tempat perdagangan yang terorganisir dalam bursa yang disebut bursa efek. Di pasar modal, penjual dan pembeli bertemu dalam rangka untuk meningkatkan modal. Lebih spesifik lagi, harga saham digunakan oleh para investor sebagai salah satu informasi penting sebelum melakukan investasi agar investor mempunyai pedoman dalam mengambil keputusan investasi. Penelitian ini bertujuan untuk menganalisis pengaruh faktor-faktor fundamental dan teknikal terhadap harga saham. Variabel yang digunakan dalam penelitian ini adalah Debt Equity Ratio (DER), Return On Equity (ROE), Price Earning Ratio (PER), Interest Rates (IR), dan Exchange Rates (ER). Analisis data dilakukan pada perusahaan manufaktur yang terdaftar di Bursa Efek Indonesia periode 2007-2011. Hasil dari analisis data menggunakan analisis regresi berganda menunjukkan bahwa variabel Return On Equity, Price Earning Ratio dan Exchange Rates berpengaruh positif terhadap harga saham, sedangkan Debt to Equity Ratio dan Interest Rates tidak mempunyai pengaruh terhadap harga saham. Implikasi praktis adalah bahwa dalam menentukan harga saham tidak hanya dari faktor internal perusahaan, tetapi juga dari perusahaan eksternal.

1. INTRODUCTION

A capital market is anything in the physical sense of well-organized trade in securities which are called stock exchanges. In the capital market, the sellers and buyers meet in order to raise capital. The parties who have surplus funds intend to invest the cash-strapped party whereas the par-

ties who invest the fund, in return, will earn a return on their investments. Two main factors influence an investor to invest. They are the return (the return on shares) and risk factors.

In terms of the return, they can obtain dividend income (dividend yield) as well as income from the difference between the selling prices of

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the stock on the purchase price (capital gain). In terms of the risk factors, they think also that they will be encountered by investors. This perspective consists of systematic risk and unsystematic risk.

Some studies have also been conducted to determine the effect of the fundamental and technical variables that affect the stock price. For example, the study which tested the influence of fundamental variables on stock prices by Njo Anastasia (2003). The results showed that the book value variables affect the stock price.

However, the variables of return on assets, return on equity, debt to equity ratio have no effect on stock prices. Unlike the case with research conducted by Dimitropoulos (2007) and Stella (2009), they found that the debt-to-equity ratio has a negative effect on stock prices. Another example is the study by Adjasi (2009) revealing that the variables of cocoa prices and interest rates have a positive effect on Stock Price volatility. The variables of gold prices, oil prices, and money supply have a negative effect on Stock Price volatility. Yet, the variables of inflation and the exchange rate have no effect on Stock Price volatility.

Still others, Al Dini (2011) found that the variable of Earning per Share (EPS) positive effect on the stock price. But, the variables of Dividends per Share (DPS) and Price to Earnings ratio (P/E) negatively affect the stock price. Also, Yopi Atul (2012) found that the variables of interest rate and exchange rate have a significant negative effect on stock prices. But, again, the inflation variable does not affect the stock prices of banks in Indonesia. Another evidence is found by Achmad Thobarry (2009) who uses the variables of exchange rate and interest rate, finding, for a variable interest rate has no effect on stock prices, while having an exchange rate positively on the company's stock price in the property sector.

Sri Astute (2007) revealed that the ROE and ROA has no effect on stock prices. Yet, the research conducted by Edi Subiyantoro (2003) and Moh Syafriel (2005) found that the ROE positive effect on stock prices. The reason this research is that the stock price is used by investors as one of the important information before making an investment because the investor's share price can predict how the benefits to be gained in this relation to capital gains. Investors' decision whether to buy or sell shares held is based on how the condition of the current stock price. In addition,

the differences in the results of research done in the previous ones also become the reason for the study was conducted.

As done by Adjasi (2009) and Ahmad Thobarry (2009) who have different results in analyzing the effect of exchange rate and the interest on the stock price.

The method of analysis used to analyze stock consists of two methods of analysis, using fundamental analysis and technical analysis. Siregar (2004) explains that the fundamental analysis is an analysis of the value of a stock which includes the analysis of the condition of the company, industry analysis, analysis of the national economy and international economic analysis While technical analysis is the analysis of the movement of a stock price based on historical price movements in the stock itself the past.

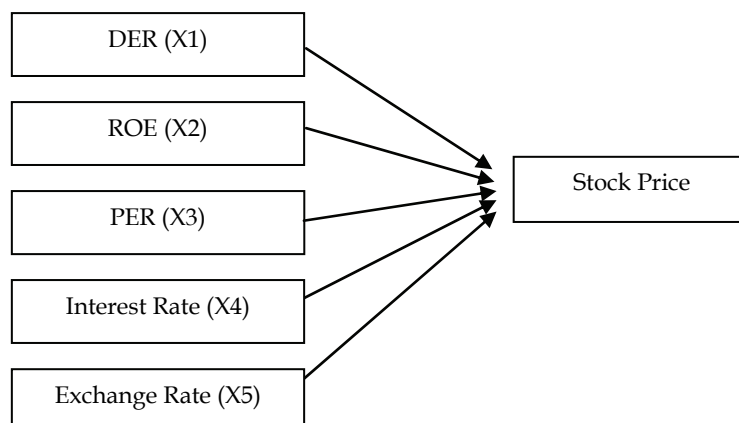
Based on previous studies, the next issue to be discussed is whether there is a fundamental influence of variables consisting of Debt to Equity Ratio, Return on Equity, and the Price Earnings Ratio and technical variables that are rested on interest rates and exchange value of the company's stock price in manufacturing companies listed in Indonesia Stock Exchange. The aim of this study is to examine and analyze the influence of fundamental variables consisting of Debt to Equity Ratio, Return on Equity, and the Price Earnings Ratio and technical variables which consist of Interest Rate and Exchange Rate on stock prices in manufacturing companies listed in Indonesia Stock Exchange.

2. THEORETICAL FRAMEWORK, AND HYPOTHESIS

In this case, the stock price is the selling prices of a share among the investors. Stock prices used are based on the share price of each company's closing stock price at the end of the year. Debt to Equity Ratio is the ratio of debt to equity. This ratio indicates the risk of the company, where the greater Debt to Equity Ratio (DER), reflecting the greater the company's ability to guarantee the debt to equity owned (Mursidah Nurfadillah 2011). The higher the ratio of DER, the higher the risk of the company because most of the funds rose came from debt. The lower the value of DER is, the better the performance of the company because the risk is too small. It will attract investors to invest. Thus, the company's share price has also increased.

Research on the effects of DER on stock prices performed by Hijri (2007) and Grace (2008)

Figure 1
The Framework of Research Concept



showed that there was no effect of the DER ratio of the stock price. Yet, the research conducted by Dimitropoulos (2007) showed that the DER negatively affects the stock price. Ratio Return On Equity (ROE) is the ability of its own capital to generate profits for shareholders (Mohammad Syafriel 2005). ROE used in this study because of the stock investing, investors will consider how the return to be provided by the company he invest their shares. The higher return is, it will be more attractive to investors that the stock price will raise. Research carried out by Subiyantoro (2003) and Syafriel (2005) showed that the ROE positive effect on stock prices.

Price Earnings Ratio (PER) is the company's ability to demonstrate how much the amount of money spent by the investor to pay the amount of income reported (Sharma, 2011). PER is used in this research because by using PER ratio, investors can compare the price of the stock company with another company. Thus, the investor will do the right investment decisions. The higher the ratio the PER, the investors' assessment of the stock will be higher as well so will cause the stock price to be high. On the contrary, the lower the PER, the investors' assessment of the stock will be lower and will result in the stock price is low. Sharma (2011) and Srinivasan (2012) suggested that PER positive effect on stock prices.

In fact, Interest Rate (IR) is one of the important components in providing advice to investors whether to invest in stocks or not. SBI (Central Bank Security) interest rate set by Bank Indonesia will affect the decisions of investors. Higher interest rates attract investors can make investment in shares and it is possible to invest in other forms such savings. Research related to the effect

of interest rates on stock prices performed by Al - Shubiri (2010) and Nishat (2011) shows that interest rates negatively affect the stock price.

On the contrary, the research conducted by Thobarry (2009) showed that the interest rate does not affect the stock price. The exchange rate (exchange rate) used in this study because the exchange rate is an important component of business activities. The importance of the exchange rate in the manufacturing business activity is related to the export and import activities. For example, in the imports of raw materials, the exchange rate will affect the price of the raw material. In this study, the exchange rate used is the exchange rate between the dollars (USD) against the rupiah (IDR). If the price of the dollar rose and the rupiah dropped, it will be more dollars paid by importers to obtain raw materials production. A stronger dollar will also cause investors to withdraw their funds in stocks and more interested in investing in the form of dollars compared to stocks. This will cause the stock price to go down.

Thobarry (2009) states that the Exchange Rate (ER) negatively affects the stock price. This study will show how the relationship between stocks prices with fundamental and technical variables as shown in the conceptual framework as seen in Figure 1.

Research Hypothesis

Based on the conceptual framework as presented in Figure 1, the research hypotheses can be formulated as follows:

1. Debt to Equity Ratio effects stock prices
2. Return on Equity affects stock prices
3. Price Earnings Ratio affects the stock price
4. Interest rates affect the share price

Table 1
Results of Hypothesis Testing

Model	Unstandardized Coefficients			t	Sig.	Tolerance	VIF
	B	Std. Error	Beta				
1 (Constant)	1.816	1.445		1.257	.210		
DER	-6.47	.427	-.100	-1.517	.131	.933	1.072
ROE	1.208	.427	.214	2.829	.005	.704	1.421
PER	.918	.338	.205	2.715	.007	.706	1.410
IR	-.054	.147	-.025	-.368	.713	.886	1.129
ER	.289	.076	.248	3.795	.000	.948	1.055

Source: Processed data in 2013.

5. The exchange rate affects on stock prices

3. RESEARCH METHOD

This is an explanatory research study. This study was conducted in the Indonesia Stock Exchange in which it obtained the data from manufacturing companies in the form of financial statements of the company with the study period 2007-2011. The population in this study was all manufacturing companies that meet the following criteria:

- (1) Companies are listed on the Indonesia Stock Exchange,
- (2) Companies have earnings in the observation period 2007 to 2011. It is related to the use of financial ratios such as ROE and PER that is considered as basic earnings factor calculation.

The sampling technique used is saturated samples, where all members of the population were used as a sample that consisting of 45 companies.

Data Analysis Methods

Data analysis is done by means of multiple regression analysis. Regression model can be shown by the following formula:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + e. (1)$$

Description:

Y = closing share price (Closing Price)

β_0 = constant

$\beta_1, \beta_2, \beta_3, \beta_4, \beta_5$ = regression coefficient

X_1 = Debt to Equity Ratio

X_2 = Return On Equity

X_3 = Price Earnings Ratio

X_4 = Interest Rate

X_5 = Exchange Rate

e = residual error (Imam Ghozali, 2006: 89).

4. DATA ANALYSIS AND DISCUSSION

Data Analysis

The dependent variable is the stock price (Y) while the independent variables are DER (X_1),

ROE (X_2), PER (X_3), IR (X_4) and ER (X_5). The results of regression analyzes can be seen in Table 1.

Description:

- The number of the data (observations) = 225

- Dependent variable Y

Based on the result of regression analyzes I Table 1, the model can be stipulated in the regression equation as follows:

$$Y = 1.816 - 0.647 DER + 1.208 ROE + 0.918 PER - 0.054 IR + 0.289 ER + e$$

The equation shows that the ROE, PER, and ER has a positive direction or proportional to the dependent variable, while the variable DER and IR has a negative direction or inversely related to the dependent variable.

The variable of DER has t-calculated 1.517 and probability 0.000. Because of the t-calculated is $< t$ table ($1.517 < 1.97$) or sig. $t > 5\%$ ($0.131 > 0.05$), then the variable of DER has no significant effect on stock prices.

The variable of ROE has t-calculated 2.829 and probability 0.000. Because of the t-calculated is $> t$ -table ($2.829 > 1.97$) or sig. $t < 5\%$ ($0.005 < 0.05$), then the variable of ROE has a significant effect on stock prices.

The variable PER has t-calculated 2.715 and probability 0.000. Because of the t-calculated is $< t$ -table ($2.715 > 1.97$) or sig. $t < 5\%$ ($0.007 < 0.05$), then the variable of PER has a significant effect on stock prices.

The variable of IR has t-calculated 0.368 and probability 0.087. Because of the t-calculated is $< t$ -table ($0.368 < 1.97$) or sig. $t > 5\%$ ($0.713 > 0.05$), then the variable IR has no significant effect on stock prices.

The variable of ER has t-calculated 3.795 and probability 0.001. Because of the t-calculated is $> t$ -table ($3.795 > 1.97$) or sig. $t < 5\%$ ($0.000 < 0.05$), then the variable ER has a significant effect on stock prices.

The results from determinant coefficients R

Table 2
Determination Coefficients

Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.340 ^a	.116	.095	1.90335

Predictors: (Constant), SNT,DER,ROE,SSB,PER

Dependent Variable : Stock Price

Source: Processed data in 2013.

Square (R²) is 11.6%. This result explained that the stock price was affected by DER, ROE, PER, IR and ER by 11.6% while the remaining 88.4% is influenced by other variables outside the five independent variables of this study. The result is shown in Table 2.

Discussion

The Effect of Debt Equity Ratio on Stock Price

The results showed that the variable DER has no significant effect on stock prices. The high level of debt burden assumes that the company has in its operations so that the interest of investors in shares in the company to be reduced. Accordingly, investors tend to avoid investing in companies with high DER. Investors will be more selective in choosing shares to be purchased and would not choose to invest in companies with high DER. Therefore, DER will not affect the movement of the stock price.

The results appears consistent with previous studies such as those by the Hijri (2007) and Grace (2008) stating that the DER has no effect on stock prices. However, it is on the contrary with the research by Kabajeh (2012), finding that the DER has positive effect on stock prices and that by Dimitropoulos (2007), Hatta (2012) and Stella (2009) also finding that the DER negatively affect the stock price.

The Effect of Return on Equity on Stock Price

The variable ROE is found to have a positive effect on stock prices which is to the potential investors that prefer companies that provide high returns than investing in low return. The companies with high ROE means they are more optimal to use their own capital in order to attract investors.

The results are consistent with previous research studies of Subiyantoro (2003) and Syafriel (2005) which suggests that the ROE had positive effect on stock prices. This research is contrary to research conducted by Kabajeh (2012) and Haque (2013) which stated that the ROE did not affect the stock price.

The Effect of Price Earnings Ratio on Stock Price

PER has positive effect on stock prices. It also increases the ratio of the PER which will be able to create a view of the company with good investors who believe that the company has good prospects. As such, it can cause the stock price to be high. With these assumptions, the investors will entrust their funds to be invested in the company. This will result in the stock price rises.

The results are consistent with research conducted by Hijri (2007), Sharma (2011), Srinivasan (2012), Nauman (20120) and Malhotra (2013) who suggested that PER positive effect on stock prices. However, these results are not in accordance with the results of Marian Vorek (2009), Al Dini (2010) and Nishat (2011) which states that the PER negatively affect the stock price.

The Effect of Interest Rate on Stock Price

In fact, interest rate (IR) has no effect on stock prices. Based on the theory, rising interest rates will lower stock prices. This is because the interest rate increases impact on the attitudes of investors who would prefer to invest in the form of deposits. Interest rates have negative relationship with stock prices. However, the nature of fluctuating interest rates because investors tend to ignore the interest rate as a basis for consideration. Rise and fall of interest rates will lead to uncertainty. The variable interest rate is a variable that has no direct influence on stock prices. Investors did not directly respond to changes in interest rates. Thus, the interest rate has no effect on stock prices.

The results are consistent with studies of Thobarry (2009) General (2013), and Kewal (2012) in which the interest rate does not affect the stock price. However, the results of this study contrast with the study of Al - Shubiri (2010), Nishat (2011), Nature (2009), Gunu (2009), and Momani (2012) which states that the interest rates negatively affect the stock price as well as the study of Adjasi (2009) which states that the interest rate has positive effect on stock prices.

The Effect of Exchange Rate on Stock Price

Again, there is a positive of Exchange Rate (ER) on stock prices. The strengthening of the rupiah showed that a positive trade balance in which there was an increase in exports. The strengthening of the rupiah also indicated that Indonesia's economy improved. Therefore, the desire of investors to invest increased so that stock prices also rose. Likewise, if the exchange rate down (rupiah weakened), this indicates that the Indonesian economy deteriorated so may cause foreign investors flocked to sell stake in Indonesian industry. Thus, the stock price will go down.

The results are consistent with research Thobarry (2009), the Great (2013), and Stavarek (2005) which states that the exchange rate has positive effect on stock prices. But the results of this study contrast with research conducted by Aroni (2011) and Murtianingsih (2012) which states that the exchange rate negatively affect the stock price as well as the study of Kutty (2010) which states that the exchange rate has no effect on stock prices.

5. CONCLUSION, IMPLICATION, SUGGESTION, AND LIMITATION

As discussed through the finding, it can be concluded that the return on equity, price earnings ratio, and the exchange rate have significant effect on stock prices. However, the debt-to-equity ratio and interest rates do not affect the company's stock price movements. From this evidence, it is clear that the company's stock price movements are not only influenced by the fundamental variables, but even technical variables also contribute to stock prices. It implies that to provide an explanation of a connection as well as the influence of fundamental and technical variables of the manufacturing companies on the stock price. The practical implication is that in determining stock prices not only from the company's internal factors, but also from external companies.

This study can be used as guidance for investors and potential investors in investing in shares in manufacturing companies. For that reason, it is advisable for future research to increase the variable in both fundamental and technical variables for analysis, such as how they affect stock prices. By adding fundamental and technical variables that are analyzed, there will be more information that can be used in considering investment decisions.

The companies used for the sample in this

study are only manufacturing companies that are expected to further research. Thus, it would be better if all the companies listed on the Stock Exchange can be taken as well. By doing so, it can detect the characteristics of companies in the manufacturing sectors and other sectors related to the fundamental and technical variables that affect stock prices.

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