





# “An empirical analysis of internal and external factors of stock pricing: evidence from Indonesia”

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<b>ARTICLE INFO</b>	Hesty Juni Tambuati Subing, R. Wedi Rusmawan Kusumah and Gusni (2017). An empirical analysis of internal and external factors of stock pricing: evidence from Indonesia. <i>Problems and Perspectives in Management</i> , 15(4), 178-187. doi: <a href="https://doi.org/10.21511/ppm.15(4-1).2017.02">10.21511/ppm.15(4-1).2017.02</a>
<b>DOI</b>	<a href="http://dx.doi.org/10.21511/ppm.15(4-1).2017.02">http://dx.doi.org/10.21511/ppm.15(4-1).2017.02</a>
<b>RELEASED ON</b>	Monday, 25 December 2017
<b>RECEIVED ON</b>	Thursday, 22 June 2017
<b>ACCEPTED ON</b>	Sunday, 05 November 2017
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<b>JOURNAL</b>	"Problems and Perspectives in Management"
<b>ISSN PRINT</b>	1727-7051
<b>ISSN ONLINE</b>	1810-5467
<b>PUBLISHER</b>	LLC “Consulting Publishing Company “Business Perspectives”
<b>FOUNDER</b>	LLC “Consulting Publishing Company “Business Perspectives”



NUMBER OF REFERENCES

**36**



NUMBER OF FIGURES

**0**



NUMBER OF TABLES

**4**

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BUSINESS PERSPECTIVES



LLC "CPC "Business Perspectives"  
Hryhorii Skovoroda lane, 10, Sumy,  
40022, Ukraine

[www.businessperspectives.org](http://www.businessperspectives.org)

Received on: 22<sup>nd</sup> of June, 2017

Accepted on: 5<sup>th</sup> of November, 2017

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# AN EMPIRICAL ANALYSIS OF INTERNAL AND EXTERNAL FACTORS OF STOCK PRICING: EVIDENCE FROM INDONESIA

## Abstract

Stock prices change from time to time along with the latest conditions and information derived by investors dealing with the outlook for the company. Changes in stock prices are probably triggered by various factors, both internal and external, coming the company. Internal factors used in this study are price earnings ratio, return on assets, systematic risk, while external factors used are inflation, interest rates, and oil prices. The purpose of this study is to identify factors affecting stock pricing in the consumer goods industry, and determine which factors are most influential on stock prices company. The data used in this study were collected during the period from 2008 to 2015 of companies in consumer goods industry listed on the Indonesia Stock Exchange, and samples were taken from 18 companies. Panel data regression methods have been used to explain factors affecting the stock pricing of the company. Regression result indicates that price earnings ratio, return on assets, and Oil Prices have a positive impact on company stock prices, while inflation has a negative impact on company stock prices. Moreover, systematic risk and interest rate not impact the stock price of the company.

## Keywords

stock price, internal factors, external factors

## JEL Classification

E44, G11

## INTRODUCTION

Capital markets have an important role in the economy of a country. One of the investment instruments in the capital market that many investors are interested in is stock. Stock prices always fluctuate from time to time in accordance with the market activity that is influenced by the strength of demand and supply of those shares in the market. The higher the demand for a stock, the more the stock price will rise in the market and can provide benefits for investors, on the contrary, the lower the demand for a stock, the more will the stock price fall (Gusni, 2016).

In Indonesia, the consumer goods industry is an industry sector which is quite rapidly growing despite the unstable global economic situation. The stocks in the consumer goods sector are able to survive so that many investors prefer to invest their funds in the consumer goods industry. Companies incorporated into the consumer goods industry have a high level of competition, thus demanding the performance of a company which is always excellent to excel in the competition. This condition also affects the movement of stock prices of issuers in the consumer goods sector, investors interest in the company's stock is reflected from the fluctuations of its shares in the Indonesia Stock Exchange.

Changes in stock prices can be caused by various, both internal and external, factors. The internal factor is related to company performance, capital structure, company value, the prospect of a company in the future and others. Internal factors can be changed, controlled and perfected by the company so it is expected to provide benefits or benefits for the stakehold-

ers. While the external factors of the company related to macroeconomic conditions that include economic growth, inflation, interest rates, world oil prices and others to take into account the overall economic conditions, it can be seen whether or not the current economic conditions are good for investing in stock market. These internal and external factors can be used as a reference by investors in predicting stock prices. Internal factors used in this study are price earnings ratio, return on assets, systematic risk, while external factors used are inflation, interest rates, and world oil prices.

Evaluation of stock prices and the analysis of the determinants of the things that are very interested investors. A number of empirical studies have tried to analyze the factors that influence stock prices, including the internal factor of price earnings ratio, this ratio illustrates the market's appreciation of the company's ability to generate profits (Darmadji & Fakhrudin, 2012). According to Suselo, Djazul, and Indrawati (2015), the bigger price earning ratio means the market price of each share will get better. But the lower the price earnings ratio, the smaller the attractiveness of the stock as an investment. The previous research which concerned the influence of price earnings ratio (PER) on stock price was led by Safitri (2013), Astutik, Surachman, and Djazuli (2014), Sharif, Purohit, and Pillai (2015) and Suharno (2016) indicated that price earnings ratio has a significant effect on stock price. These results were contrary to the research conducted by Salman (2011) that pointed to price earnings ratio, which has no effect on stock prices.

Return on assets is variable profitability ratio that is predicted to have the relationship with stock price. According to Rahmi, Arfan, and Jalaluddin (2013), the higher of return on assets ratio showed that firms were increasingly effective in leveraging assets to generate net income after tax, which also could be interpreted that the company's performance was more effective. This would further increase the attractiveness of the company to investors, which impact on stock prices of these companies in the capital market would also elevate; in other words, ROA would affect the stock price of the company. Previous research leading the effect of return on assets on stock prices was performed by Rahmi, Arfan, and Jalaluddin (2013), Suharno (2016), Zulkarnaen, Syamsun, and Maulana (2016) showed that return on assets has a significant effect on stock prices. However, it is contrary to the research conducted by Safitri (2013), and Aulianisa (2013), which showed that return on assets had no significant effect on stock prices.

Systematic risk is also predicted as an internal factor affecting stock prices. This risk can be measured by beta coefficients. The higher the beta level, the higher the systematic risk that can not be eliminated due to diversification. Diversification of this risk is very important for investors, because it can minimize risk without having to reduce the return received. Previous research that examines the effect of systematic risk on stock prices was by Hijrah (2007) and Setianingrum (2009) suggested that systematic risk does not affect stock prices. The results were dissimilar to research conducted by Maryanne and Menina (2009), Amanda and Pratomo (2013), Rahmi, Arfan, and Jalaluddin (2013), which indicated that systematic risk had an influence on stock prices.

Not only internal factors are predicted to have an influence on stock prices, but also external factors are suspected to have an influence on stock prices. External factors in this study include inflation. Increased inflation is relatively a negative signal for investors in the capital market. Inflation increases the company's revenue and costs. If the increase in production costs is higher than the increase in prices that can be enjoyed by the company, then the profitability of the company will go down. If the profit is obtained by small companies, this will result in investors being reluctant to invest funds in the company so that stock prices decline (Kewal, 2012). Previous research that examines the effect of inflation on stock prices is done by Maryanne and Menina (2009), Kewal (2012), Amin (2012), Agustina and Sumartio (2014), Zulkarnaen, Syamsun, and Maulana (2016) research results say that the inflation rate does not affect the stock price. These results are different from research conducted by Krisna and Wirawati (2013), which states that the inflation rate affects the stock price.

Interest rates are also predicted as external factors that affect stock prices. According to Tandelilin (2010), an increase in interest rates could cause investors to withdraw their investments in stocks and move them to investments in the form of savings or deposits. Therefore, high interest rates are a negative signal to stock prices.

Previous research that examines the effect of interest rates on stock prices is performed by Amin (2012) who states that interest rates affect stock prices. Unlike Kewal (2012), Krisna and Wirawati (2013) Syarofi (2014), Agustina and Sumartio (2014), Astutik, Surachman dan Djazuli (2014), and Zulkarnaen, Syamsun, and Maulana (2016) who say that the interest rate does not affect the stock price.

Oil is an important factor in the needs of human life includ as an industrial raw material so that it is suspected to have an influence on stock prices. Petroleum is one of the world's renewable energy sources. Therefore, the price of petroleum is one of the determinants of global economic performance. Investors in the capital market consider that rising global oil demand is a sign of improving global economic recovery after the. On the other hand, the decline in global oil demand reflects a weakening global economic recovery. Thus, if the world oil price rises, expectations of the improved performance of companies will also increase and auto stock prices will increase (Syarofi, 2014). Previous studies that examine the effect of world oil prices on stock prices are made by Witjaksono (2010), Syarofi (2014), and Handiani (2014), who say that world oil prices have an effect on stock prices. In contrast to Hanafiah, Sudjana, and Sulasmiyati (2015), that world oil prices have no effect on stock prices.

Based on previous research and existing phenomena and inconsistent results of research conducted by previous researchers, the researchers are interested in examining the factors that affect the stock price of companies in the consumer goods industry listed on the Indonesia Stock Exchange during the period 2008–2015.

## 1. LITERATURE REVIEW

### 1.1. Stock price

The stock price is a stock piece of value issued by the issuer which consists of necessary information required by a investor to appraise the performance of one's company (issuer). Stock prices are influenced by the number of demand and supply of shares in the capital market, if stock demand is higher than stock offer, the stock price will rise, on the contrary, if stock offer is higher than stock demand, the stock price will fall (Gusni, 2016).

### 1.2. Stock price affecting factors

Arifin (2007) argued that the stock price shift can be affected by many factors including internal and external factors which can be in form of company's fundamental and outside the area of the company itself.

### 1.3. Internal factor

Internal factor or fundamental factor is one of the factors related to company's issues such as human resource development management organizing issue, and company's finance which is reflected in the company finance performance (Arifin, 2007). Fundamental value is essential to value of one's stock analyzed in order to appraise financial per-

formance using company's financing data such as earnings per share (EPS), price earnings ratio (PER), net profit margin (NPM), return on assets (ROA), return on equity (ROE) and other financial ratios.

In this research paper, three variables for the internal factor are taken: price earnings ratio (PER), return on assets (ROA) and systematic risk (beta).

### 1.4. Price earnings ratio

According to Fahmi (2011), price earnings ratio (price ratio toward profit) is an equivalent between market price per share (stock price per share) and earnings per share (profit per share). Rivai et al. (2013) proposed a formula to calculate price earnings ratio as follows:

$$\text{Price earnings ratio} = \frac{\text{Market price of common stock}}{\text{Earning per share}} \quad (1)$$

This formula is used by capital marketers to assess stock price. Price earnings ratio (PER) gives indication length of time needed to turn grant up to stock price level and company's profit during the certain period of time.

### 1.5. Return on assets

Kasmir (2012) argued that return on assets (ROA) shows return for cumulative assets used in the

company. ROA describing better ratio for company profitability, because it shows the effectiveness of management in using assets to gain income.

On the other hand, Sudana (2011) argued that ROA is company's ability to obtain income after tax by using all owned assets. The higher the ratio, the better the asset productivity in gaining net profit. This can intensify the appeal of the company to the investor, because the return will be higher for the investor, which may attract more potential investor and this can affect company's stock price. The formula used to calculate the return on assets (ROA) as follows:

$$\text{Return on assets} = \frac{\text{Earning after tax}}{\text{Total assets}}. \quad (2)$$

### 1.6. Beta ( $\beta$ ) as systematic risk ratio tools

According to Gitman (2009), beta is a relative measure of non-diversifiable risk an index of the degree an asset's return in response to changes in the market return. An asset's historical return is used in finding the asset's beta coefficient. On the other hand, Jogiyanto (2013) argued that beta is volatility return measurement on securities or portfolio toward the market return. Beta as systematic risk ratio tool affects the portfolio return, because each investment is dependent on beta that measures variants return related to market return.

The formula used to calculate beta according to Jogiyanto is as follows:

Information:

$$\beta_i = \frac{\sum_{t=1}^n (R_{it} - \bar{R}_{it}) \cdot (RM_t - \bar{RM}_t)}{\sum_{t=1}^n (RM_t - \bar{RM}_t)^2}, \quad (3)$$

where  $R_{it} - \bar{R}_{it}$  - result of return from stock  $i$  minus the expected result from stock  $i$   $RM_t - \bar{RM}_t$  - result of market return minus the expected result of market return and  $n$  is the total value of research.

Beta can be calculated by the formula given below:

$$\beta_i = \frac{\sigma_{im}}{\sigma_{im}^2}, \quad (4)$$

where  $\beta_i$  - beta securities,  $\sigma_{im}$  - covarians return between securities to  $i$  and market return.

### 1.7. External factor

The external factor is a factor related to the event outside the company, commonly related to country's social economic circumstances. Alwi (2003) argued some external factors such as government's issued to change interest rate and deposit, exchange rate, inflation, and other economic regulation and deregulation issued by government; legal announcement including employee's rights toward company or manager, manager's rights toward company, and company's right toward manager; securities announcement such as annual meetings report, insider trading, volume or stock price trading, limiting or postponement trading; politics issue, and the fluctuation of exchange value can significantly impact the shift of stock price in stock exchanges. In this research, three variables of external factors are taken: inflation, interest rate, and crude oil value.

### 1.8. Inflation

Inflation is the increment cost of daily goods and services causing purchasing power to fall and escalating living cost, inflation can occur when the currency value is slumped, which results in economic crisis. The country's economic status can be described through inflation (Tandelilin, 2010). Inflation rate can be counted by consumer cost index which shows the annual percentage. Inflation itself can occur if demand is higher in job opportunity level of the national output which takes effect on pulling the costs higher and the higher cost of input factor (salary and staple) take effect on pushing the costs up further.

### 1.9. Interest rate

Husnan (2009) argued that interest rate is returning ratio of some investment in form of rewards for the investor. On the contrary, Sunariyah (2011) argued that interest rate is a cost of a loan. Interest rate declared as money percentage from base per unit of time. Interest is also a measurement of resource price used by the debtor that must be paid to the creditor. The interest rate used in this research is Bank Indonesia interest rate (BI rate).

Siamat (2005) argued that BI rate is interest rate with one month tenor announced by Bank Indonesia periodically within the certain length of time as a stance in monetary policy. However, according to



Bank Indonesia, BI rate is set of interest rate monetary policy reflecting the stance of monetary policy which is applied and publicly announced by Bank Indonesia. From two different argument above, it can be concluded that BI rate is functioning as a response signal from Bank Indonesia monetary policy in form of inflation, deflation, or plateau BI rate.

### 1.10. World crude oil price

World crude oil price can be measured by world crude oil market, West Texas Intermediate (WTI) is commonly used as a standard, because crude oil sold in WTI is high-quality crude oil. This light-weight crude oil consists of low levels sulfur and very suitable as a fuel affects the oil price and thus set as a standard for oil trading around the world ([http://useconomy.about.com/od/economic-indicators/p/Crude\\_Oil.htm](http://useconomy.about.com/od/economic-indicators/p/Crude_Oil.htm)).

The price of Brent consists a mixture of 15 crude oil from 15 different oil fields located in the North Sea. The quality of crude oil Brent is not as good as crude oil WTI, but still suitable if processed into fuel. The price of crude oil Brent is applied as a standard in Europe and Africa. Crude oil Brent is approximately one or two dollars cheaper than crude oil WTI, but four dollars higher than oil price (OPEC) ([en.wikipedia.org](http://en.wikipedia.org)). Along with the new industrial countries, the needs of crude oil will escalate. The demand for crude oil will affect world crude oil price and also affect the country's economic matters if attributed to economic activities.

## 2. METHODOLOGY

### 2.1. Data

The data for the study was gathered from the official website of Indonesia Stock Exchange (IDX), Statistic Indonesia, Bank of Indonesia and U.S. Energy Information Administration. The data were secondary data. Secondary data are the data that are published or utilized by other organization, not by the user. Secondary data are used in this research in the form of documents on financial statements and other related information such as company annual report, and share statistic report. For additional information, the researcher also takes information which has already existed, like articles, journals, textbooks,

etc. The data used in this research are the combination of time series data and cross-section data, which is known as pooling data that is an observation period from 2008 until 2015 and 18 companies in consumer goods industry listed on the Indonesia Stock Exchange. The number of samples is obtained by using purposive sampling method.

### 2.2. Research hypotheses

Hypotheses are interim to answer a formulated problems of the research and an answer based on relevant theory, it is not basically empirical facts from data gathering. Based on a review of several prior studies, there are several testable hypotheses. Table 1 shows the definition of the variables and research hypotheses used.

**Table 1.** Research variables and hypotheses

Variables	Definition	Symbol	Expected sign
<b>Independent variables</b>			
Price earning ratio	Stock pricing/earning per share	PER	H1 (+)
Return on assets	Earning before tax/total assets	ROA	H2 (+)
Systematic risk	Covariance of Ashare return and market return/ variance of market return	Beta	H3 (-)
Inflation	Ratio IHK	Inf	H4 (-)
Interest rate	Interest rate on SBI	IR	H5 (-)
Oil prices	Ln oil prices	OP	H5 (+)
<b>Dependent variables</b>			
Stock pricing	Ln closing share price on December 31 for the years studied	SP	-

### 2.3. The empirical model and data analysis method

The hypotheses in this research are tested by using panel data regression model. The regression equation model is presented below:

$$SP = \alpha_i + \beta_1 PER + \beta_2 ROA - \beta_3 Beta - \beta_4 INF - \beta_5 IR + \beta_6 OP + e, \tag{5}$$

where  $\alpha$  is constant,  $\beta_1, \beta_2, \beta_3, \beta_4, \beta_5$  are regression coefficients, and the variables already being defined in Table 1 above.

The researcher will use EVIEWS version 9 for running the statistic data and analyzing the results. The primary step in conducting panel data regres-

sion model, several classic assumption tests have to be conducted. The tests consist of normality, multicollinearity, autocorrelation, and heteroscedasticity test. Normality test is used to test whether the residual is distributed normally in a regression model. Normality test used in this research is normality test using Jarque-Bera test. Multicollinearity test is used to determine the relationship of independent variables in the regression model. To detect if the regression model is experiencing multicollinearity, it uses matrix Pearson correlation. Autocorrelation test is used to test if the linear regression has a correlation between the errors in the  $t$  period with a  $t-1$  period. If the correlation occurs, then autocorrelation problem exists. One of the tests that are generally used in detecting autocorrelation is by using Durbin-Watson statistic test, developed by J. Durbin and G. Watson in 1951 (Gujarati, 2004).

Heteroscedasticity test is to examine whether the regression model is having inequality of variance from residual of one observation to other observation (Ghozali, 2013). According to Gujarati (2004), to detect the heteroskedasticity problem, it can use the formal and informal method. The formal method can be done by statistical test including Park test, White test, Glejser test and Breusch-Pagan-Godfrey (BPG) test. In this research, the research will use the BPG test in detecting the heteroskedasticity problem.

Next step was a test of the accuracy of the regression function in predicting the value of the dependent variable is determined by the goodness-of-fit (Ghozali, 2013). In measuring the goodness-of-fit, a panel data regression model can be analyzed through F-test,  $t$ -test and adjusted  $R^2$ .

F-test is known as ANOVA test is used to find the impact of independent variables simultaneously toward a dependent variable or to test if the model used is fixed or not. The  $t$ -test is supposed to analyze the effect of each independent variable individually toward the dependent variable or called

as a hypothesis test.  $R^2$  test which is coefficient determination test to measure the ability of the model or the independent variables used to define changes in the dependent variable.

### 3. RESULTS

The result of normality test using Jarque-Bera test show that Jarque-Bera probability value is  $0.80 > \alpha$  ( $\alpha = 0.05$ ), it can be said that the data are normally distributed. Furthermore, multicollinearity test using correlation matrix for each independent variable resulted by the data processing shows that there is no multicollinearity between independent variable, because the coefficient correlation is below 0.8 as seen in Table 2 below.

The autocorrelation test results showed the Durbin-Watson number of 0.57. The value will be compared with the Durbin-Watson table with the number of observations ( $n$ ) = 114, the number of independent variables ( $k$ ) = 6 and the 0.05% significance level then the results obtained  $dL = 1.5855$  and  $dU = 1.8065$ ,  $4 - dL = 2.4145$  and  $4 - dU = 2.1935$ . The comparison between the Durbin-Watson score with the Durbin-Watson table shows that the Durbin-Watson count is greater than the  $4 - dL$  value which means autocorrelation occurs. To overcome the problem of autocorrelation, the approach of Newey-West standard error contained in program EViews can be used ([www.werner-murhadi.wordpress.com](http://www.werner-murhadi.wordpress.com)). The result of heteroskedasticity using the Breusch-Pagan-Godfrey (BPG) test resulted in p-value obs\*-square  $0.09 > 0.05$ , meaning that there is no heteroscedasticity among the residuals in the regression model or the variance of the residuals keep staying the same across different observation or different values of independent variables.

This study uses panel data regression analysis, because the data analyzed are a combination of cross-section data with time series (pooling data) to determine the effect of price-earnings ratio, re-

**Table 2.** Coefficient correlation matrix

Source: IDX, Statistic Indonesia, Bank of Indonesia and U.S. Energy Information Administration (processing data).

	PER	ROA	Beta	INF	IR	OP
PER	1.000000	-0.444695	-0.005111	-0.113225	-0.113569	-0.071987
ROA	-0.444695	1.000000	-0.126471	0.032281	-0.012313	-0.021324
Beta	-0.005111	-0.126471	1.000000	-0.025890	-0.213172	-0.025879
INF	-0.113225	0.032281	-0.025890	1.000000	0.696242	0.793661
IR	-0.113569	-0.012313	-0.213172	0.696242	1.000000	0.474731
OP	-0.071987	-0.021324	-0.025879	0.793661	0.474731	1.000000

**Table 3.** Panel data regression results

Source: IDX, Statistic Indonesia, Bank of Indonesia and U.S. Energy Information Administration (processing data).

Variables	Coefficient	Std. Error	Prob.
PER	0.121757	0.030912	0.0001
ROA	0.194261	0.019705	0.0000
Beta	-0.006730	0.014006	0.6318
INF	-0.233235	0.065939	0.0006
IR	0.152987	0.145628	0.2958
OP	5.736495	1.436352	0.0001
C	-6.109029	1.668746	0.0004
R-squared	0.595525	-	-
F-statistic	26.25676	-	-
Prob (F-statistic)	0.000000	-	-

turn on assets, and systematic risk, and inflation, interest rate and oil price to stock price. The results of the regression are shown in Table 3 below:

The regression analysis results show that the coefficient of variation ( $\beta$ ), which explains the direction of variability is positive for PER, ROA, IR, and OP, while it is negative for beta and INF. For the F-test results show that  $F_{calculated}$  is 26.2567 with  $\alpha_{calculated}$  is 0.0000, meanwhile  $F_{table}$  equal to 2.18 with  $\alpha = 0.05$ . It shows that  $F_{calculated} > F_{table}$ , and  $\alpha_{calculated} < 0.05$ . Meaning that independent variables used in this research are simultaneously able to define dependent variable in a good way or the regression model is fit.

From the  $t$ -test result as seen in the Table 4 above, PER, ROA, and OP (oil prices) are independent variables whose  $\alpha$  value is lower than significant level of 0.05 and  $t_{calculated}$  greater than  $t_{table}$ . It can be said that PER, ROA, and OP (oil prices) have a positive impact and are significant toward stock pricing and INF (inflation) variables have a negative impact and are significant toward stock pricing. Meanwhile, the other variables (systematic risk/ beta and interest rate/ IR) are having  $\alpha$  value higher than significant level of 0.05 and  $t_{calculated}$  lower than  $t_{table}$ . It means that systematic risk/ beta and interest rate/ IR do not impact on stock pricing.

The model developed for stock pricing is weak, because the coefficient of determination ( $R^2$ ) as shown in Table 3 above is 0.5955. It can be said that

the variation in the stock pricing in consumer goods industry listed at Indonesia Stock Exchange can be explained by the variation in PER, ROA, beta, INF, IR, and OP by 59.55%, taking into account the sample size and number of independent variables, while the remaining of 40.45% is explained by the variation of other variables outside of the regression model.

#### 4. DISCUSSION

Based on the results of data processing as shown in the table attached, it can be referred that the price-earnings ratio (PER) has a significant effect on stock prices, so the research hypothesis is accepted. According to the result of this research, PER is able to influence investor interest in their decision to invest shares in the company, the investors shall observe the other more influential factors to invest their shares in the company. The results of this study were supported by Safitri (2013), Astutik, Surachman, and Djazuli (2014), Sharif, Purohit, and Pillai (2015) and Suharno (2016) who showed that PER had a significant effect on stock prices. Meanwhile, research conducted by Salman (2011) mentioned the opposite that PER did not significantly affect the stock price.

Return on asset (ROA) has a significant influence on stock prices, so the research hypothesis is accepted. It shows the company's ability to generate profits with better corporate performance. This will keep investors enthusiast to invest. With the increasing magnitude of the attraction, many investors had purpose to own shares of the company. If the demand for shares

**Table 4.**  $t$ -test result (hypotheses test)

Source: IDX, Statistic Indonesia, Bank of Indonesia and U.S. Energy Information Administration (processing data).

Variables	$t_{calculated}$	$\alpha_{calculated}$	$t_{table}$	$\alpha_{table}$
PER	3.9388	0.0001	1.9824	0.05
ROA	9.8585	0.0000	1.9824	0.05
Beta	-0.4805	0.6318	1.9824	0.05
INF	-3.5371	0.0006	1.9824	0.05
IR	1.0505	0.2958	1.9824	0.05
OP	3.9937	0.0001	1.9824	0.05



of a company increases excessively, then the stock price will increase. The results of this study were as equal as the research conducted by Rahmi, Arfan, and Jalaluddin (2013), Suharno (2016), Zulkarnaen, Syamsun and Maulana (2016) stated that return on assets had an influence on stock prices. However, contrary to research conducted by Safitri (2013), and Aulianisa (2013), the return on assets had no effect on stock prices.

Systematic risk has no significant effect on stock price, so the research hypothesis is rejected. The less effect of systematic risk (beta) on stock prices indicates that market instability causes most investors to buy stocks for short-term profit in the form of capital gains; therefore the systematic risk (beta) occurred in the market does not affect the stock price. In contrast to the theory by Tandelilin (2010), the greater the beta of a security, the greater the sensitivity of the securities return to changes in market return. In other words, the riskier the investment (shown by the beta coefficient), the lower the stock price. Systematic risk is a risk associated with the alteration that occurs in the market totally. Systematic risk cannot be minimized by diversification. The greater the risk facing the company, the investor will consider speculating in investing shares to the company, thus causing the company's stock price to decrease. Conversely, the lower the risk faced by the company, the more investor will be interested to invest the shares into the company, thus causing the company's stock price to increase. No effect of systematic risk (beta) on stock prices indicates that market instability causes most investors to buy stocks for short-term profit in the form of capital gains so that systematic risk (beta) that occurs in the market does not affect the stock price. The results of this study are reciprocally equal to the research conducted by Hijrah (2007) and Setianingrum (2009) who stated that the systematic risk did not affect the stock price. However, contrary to research by Maryanne and Menina (2009), Amanda and Pratomo (2013), Rahmi, Arfan, and Jalaluddin (2013) said that systematic risk affected stock prices.

In this research, the inflation rate has a significant influence on stock prices, with a negative trend; thus, the research hypothesis is accepted. The results provide a picture that inflation can encourage market reaction to stock prices. The inflation rate may have both positive and negative effects depend-

ing on the rate of inflation. High inflation rates can be harmful to the economy in global, the number of companies will experience financial distress. High inflation can also lower stock prices in the market. However, a low inflation rate can push the economy better by strengthening national income and getting people to be more productive, earning money, saving money and investing. The results of this study are in accordance with the research conducted by Krisna and Wirawati (2013) who said that inflation had an influence on stock prices. Meanwhile, according to Maryanne and Menina (2009), Kewal (2012), Amin (2012), Agustina and Sumartio (2014), Zulkarnaen, Syamsun, and Maulana (2016), inflation did not affect the stock price.

The interest rate does not affect the stock price; as the result, the research hypothesis is rejected. The interest rate does not affect the stock price triggered by the type of Indonesian investors who prefer to conduct stock transactions in the short term (trader/ speculator), so investors tend to obtain profit taking in an expectation of obtaining higher capital gains in the capital market than invest in the form of deposits. In addition, some listed companies that provide high dividends to their shareholders are also one of an enticement for investors to invest in stocks rather than in the form of securities in the money market. The results of this study are equal to the research conducted by Kewal (2012), Krisna and Wirawati (2013) who said that interest rates had no effect on stock prices. But it is contrary to research by Amin (2012) who said that the interest rate affected on stock prices.

Crude oil prices have a significant effect on stock prices, so the research hypothesis is accepted. As oil prices in the world rise, it becomes the trigger of the increase in almost all sectors. Considering that oil serves as fuel and industrial production materials, the rise in oil prices causes the production costs for the industry which furthermore undermine the fundamental aspects of the company. The results of this study turn to be the same to a research conducted by Witjaksono (2010), Handiani (2014), and Pardede et al. (2016), the results of his research show that world oil prices affected the stock price. However, it is contrary to research led by Hanafiah, Sudjana, and Sulasmiyati (2015) who stated that world oil prices did not have effects on stock prices.

## CONCLUSION

The aim of this study was to identify factors affecting stock pricing and define which of the most important factors have a powerful effect on the firm stock price. The data used for this research were secondary data in the form of documents on financial statements and other related information such as company annual report, and share statistic report, and gather from the official website of Indonesia Stock Exchange (IDX), Statistic Indonesia, Bank of Indonesia and U.S. Energy Information Administration.

This research used companies in the consumer goods industry listed on Indonesia Stock Exchange for the period 2008–2015 when sample was taken from 18 companies based on purposive sampling technique. Panel data regression methods have been used to explain the relationship between stock price and PER, ROA, Beta, INF, IR and OP variables.

The regression model used in this research has passed from classical assumption tests and the empirical result shows that the independent variables used simultaneously are able to describe the dependent variable in a good way and the estimation model is fixed.

Individually, this research was found there are positive and significant relationship between PER, ROA, and OP with stock price in the consumer goods industry listed at Indonesia Stock Exchange, and there is a negative and significant relationship between INF with stock prices in the consumer goods industry listed on the Indonesia Stock Exchange, while beta and IR were found no impact on the firm stock price. Adjusted R-square ( $R^2$ ) indicates that 59.55% of independent variables are able to explain the percentage of variation in the dependent variable, while the remaining 40.45% is explained by the variation of other variables outside of the regression model.

There have been several limitations of the research, which may affect the research results. The first limited is the research sample. In this research, the sample used only 18 companies in the consumer goods industry that fulfill the criteria which are observed to identify factors that affecting company stock price. Thus, the researcher suggests that the future research will use a wider research sample, like more than one industry and a longer period of time, so the number of observation is bigger and more accurate.

The second is the limited number of independent variables. In this research, the researcher only uses PER, ROA, beta, INF, IR, and IO as the independent variables, which were used to identify factors that affect company stock price. Based on the result of panel data regression methods specifically the adjusted R-square, the variation in the independent variables (PER, ROA, beta, INF, IR and OP) determined 59.55% of the variation in the firm stock price, meaning that there are other variables influencing the firm stock price, which are not examined in this research. Thus, the researcher suggests that the future research will add more independent variables by collaborating more theories.

## REFERENCES

1. Agustina, & Sumartio, F. (2014). Analysis of Factors Affecting Stock Price Movements In Mining Companies. *Wira Ekonomi Mikroskil Journal*, 4(01), April, 51-61.
2. Alwi, I. Z. (2003). *Capital Markets: Theory and Applications, practical guidance*. Jakarta: Nasindo.
3. Amanda, & Pratomo (2013). Fundamental Analysis and Systematic Risk to Banking Stock prices Listed in Index of LQ 45. *Economic and Finance Journal*, 1(3), February, 205-219.
4. Amin, M. Z. (2012). The Effect of Inflation Rate, SBI Rate, Dollar Value (USD / IDR), and Dow Jones Index (DJIA) to Movement of Composite Stock Price Index In Indonesia Stock Exchange (IDX) (Periode 2008–2011). *Thesis Journal FEB UB*.
5. Arifin (2007). *Financial theory and capital market*. Yogyakarta: Ekonisia. Rivai.
6. Astutik, E. D., Surachman, Djazuli, A. (2014). The effect of fundamental and technical variables on stock price (Study on manufacturing companies listed in Indonesia Stock Exchange). *Journal of Economics, Business, and Accountancy Ventura*, 17(3), December, 345-352.

7. Aulianisa, F. (2013). The Effect of Fundamental Factors and Systematic Risk to Stock Price in Sharia Capital Market. *Journal of Islamic Economics*, 7(1), July, 85-103.
8. Darmadji, Tjiptono, & Fakhruddin (2012). *Capital Market In Indonesia* (3rd ed.). Jakarta: Salemba Empat.
9. Fahmi, I. (2011). *Financial Statement Analysis*. Alfabeta, Bandung.
10. Ghozali, M. A. (2013). *Application of Multivariate Analysis with SPSS*. Volume VII, Semarang, Jawa Tengah, Indonesia: Badan Penerbit Universitas Diponegoro.
11. Gitman, L. J. (2009). *Principles of Managerial Finance* (12th ed.). Pearson, Boston.
12. Gujarati, Damodar N. (2004). *Basic Econometrics: Student Solution Manual for Use with Basic Econometrics*. McGraw-Hill, New York
13. Gusni (2016). Factors That Affect Stock Pricing In Indonesia Stock Exchange. 8th Widyatama International Seminar on Sustainability (WISS). *Bandung*, 5(8), September. Retrieved from [https://www.researchgate.net/publication/313036497\\_Factors\\_The\\_Affect\\_Stock\\_Pricing\\_In\\_Indonesia\\_Stock\\_Exchange](https://www.researchgate.net/publication/313036497_Factors_The_Affect_Stock_Pricing_In_Indonesia_Stock_Exchange)
14. Hanafiah, M. S., Sudjana, N., & Sulasmiyati, S. (2015). The Effect of World Oil Price, Exchange Rate Rupiah to Dollar, and Inflation Rate on Stock (Study at PT. Bumi Resources Minerals Tbk. Periode January 2008-December 2013). *Journal of Business Administration*, 28(2), November, 1-7.
15. Handiani, S. (2014). The Effect of World Gold Price, World Oil Price and Exchange Rate of US Dollar/ Rupiah to Composite Stock Price Index in the Period 2008–2013. *E-Journal Graduate UNPAR Part-A Economics*, 1(1), 85-93.
16. Hijrah, A. (2007). The Effect of Fundamental Factors and Systematic Risk to Property Stock Prices at the Jakarta Stock Exchange. Tesis, Universitas Sumatera Utara, Medan.
17. Husnan, S. (2009). *Fundamentals of Portfolio Theory and Analysis of Securities*. Edisi Keempat. Penerbit is Publisher UPP STIM YKPN. Yogyakarta.
18. Jogiyanto, H. M. (2013). *Portfolio Theory and Investment Analysis*. BPFY Yogyakarta, Edisi Kedelapan, Yogyakarta.
19. Kasmir (2012). *Financial Statement Analysis*. Jakarta: PT. Raja Grafindo Persada.
20. Kewal. S. S. (2012). The Effect of Inflation, Interest Rate, Exchange Rate, and GDP Growth to Composite Stock Price Index. Institute of Economic Science Musi. Palembang.
21. Krisna & Wirawati (2013). The Effect of inflation, rupiah exchange rate, interest rate of SBI at composite stock price index in Indonesia Stock Exchange. *Journal of Economics and Management*. 30(1).
22. Maryanne, D., & Menina, D. (2009). The Effect of Rupiah Exchange Rate, SBI Interest Rate, Stock Trading Volume, Inflation, and Stock Beta to Stock Price (Empirical Study on Banking Sector Companies In Indonesia Stock Exchange period 2004–2007). Tesis, Universitas Diponegoro. Semarang.
23. Rahmi, A., Arfan, M., & Jalaluddin (2013). The Effect of Fundamental Factors and Systematic Risks To Stock Prices (Study on Manufacturing Companies Listed on Indonesia Stock Periode 2007–2009). *Accounting journal*, 2(2), 1-15.
24. Rivai, V. et al. (2013). *Commercial Bank Management; Banking management; from Theory to Practice*. Jakarta: PT. Raja Grafindo Persada.
25. Safitri, A. L. (2013). The effect of Earning Per Share, Price Earning Ratio, Return on Asset, Debt To Equity Ratio And Market Value Added on Stock Price in Jakarta Islamic Index Group. *Management Analysis Journal*, 2(2), 1-8.
26. Salman, M. (2011). The Influence of Financial Performance To Stock Prices On Real Estate Companies And Properties Listed In Indonesia Stock Exchange. Thesis Bachelor of Economics. Universitas Sumatera Utara.
27. Setianingrum (2009). The Effect of Fundamental Factors and Systematic Risks To Stock Prices (Study on Manufacturing Companies Listed on Indonesia Stock Exchange. Tesis. Surakarta: Universitas Sebelas Maret.
28. Sharif, T., Purohit, H., & Pillai, R. (2015). Analysis of Factors Affecting Share Prices: The Case of Bahrain Stock Exchange. *International Journal of Economics and Finance*, 7(3), February, 207-216.
29. Siamat, D. (2005). *Management of Financial Institutions. Monetary Policy and Banking* (1st ed.). Jakarta: Fakultas Ekonomi Universitas Indonesia.
30. Sudana, I. (2011). *Corporate Finance Management Theory and Practice*. Jakarta: Erlangga.
31. Suharno (2016). The Effect of The Financial Ratio on the Prices of The Stocks Of Pharmaceutical Companies Listed In Indonesia Stock Exchange In 2010–2014. *Journal of Education and Economics*, 5(4), 301-307.
32. Sunariyah (2011). *Introduction to Capital Market Knowledge* (6th ed.). Yogyakarta: UPP STIM YKPN.
33. Suselo, D., Djazuli, A., & Indrawati, N. K. (2015). The Effect of Fundamental Variables and Macro Economy to Stock Price (Study on companies Entered in Index LQ45). *Journal of Application Management*, 13(1), 104 -116.
34. Tandelilin, E. (2010). *Portfolio and Investment: Theory and Application* (1st ed.). Yogyakarta: Kanisius.
35. Witjaksono, A. A. (2010). The Effect Analysis of SBI Interest Rate, World Oil Price, World Gold Price, Rupiah Exchange Rate, Nikkei 225 Index, and Dow Jones Index to Composite Stock Price Index period 2000–2009. Semarang: Thesis Management Studies Program. Universitas Diponegoro. Retrieved from [http://eprints.undip.ac.id/24025/1/Ardian\\_Agung\\_Witjaksono.pdf](http://eprints.undip.ac.id/24025/1/Ardian_Agung_Witjaksono.pdf)
36. Zulkarnaen, A. H., Syamsun, M., & Maulana, T. N. A. (2016). Analysis of Fundamental and Technical Factors to Stock Price on Residential Property Sector Companies Listed in Indonesia Stock Exchange. *International Journal of Scientific and Research Publications*, 6(12), December, 315-319. Retrieved from [http://useconomy.about.com/od/economicindicators/p/Crude\\_Oil.htm](http://useconomy.about.com/od/economicindicators/p/Crude_Oil.htm)