

# Effect of Earning Per Shares (EPS) and Return On Assets (ROA) against Share Price on Coal Mining Company Listed in Indonesia Stock Exchange

Wiwi Idawati  
Aditio Wahyudi

Indonesia College of Economic, 11 A Kayu Jati Raya Street, Jakarta 13220, Indonesia

\* E-mail of the corresponding author: [wiwiidawati@gmail.com](mailto:wiwiidawati@gmail.com)

## Abstract

One of the main indicators is the reference of the feasibility of detecting an investor in the stock market investment is the company's profit. Profit can be reflected by the level of EPS or ROA. Generally, an increase in EPS and ROA index will be linear with the increase in stock price. The purpose of this study is to demonstrate empirically the relationship and influence of EPS and ROA on stock prices. The data used in this study is the use of panel data methods and Opportunity Sampling is done by comparing the regression model (1) Ordinary Least Square (common effect), (2) Efek Tetap (Fixed Effects), (3) Efek Random (Random Effect) . Of the three models obtained the best model is Fixed Effect. The results of this study indicate that EPS and ROA has a positive relationship to the stock price and simultaneously significantly affect stock prices. However, the EPS only partial test that showed a significant effect, whereas ROA is not.

**Keywords:** Earning Per Shares (EPS), Return on Assets (ROA), Stock price

## Introduction

### 1.1. Background

In recent decades, the stock became one of the many investment options are quite attractive to foreign and local investors. Supported by clear regulations, high level of security, as well as the ease of access to the stock market, making the stock as an investment instrument that is not only in demand by the top-class investors, but also attracted the interest of small investors as from students, workers, apparatus Civil State, even to the housewives. Many motives that drive a person or a business entity to put their funds in stocks, which are for play money is idle, expect a high rate of return, or to acquire a company. Key stocks are often the target of investors certainly are stocks that are members of the group bluechip. Bluechip stocks is itself a category of big caps stock group that is able to move significantly JCI, the company has strong fundamentals, and diligent dividends. Stock group is generally dominated by natural resource-based stocks, telecommunications, utilities, consumer goods, banking (Benni Sinaga, 2010).

The main indicator is the reference of investors or market analysts in detecting the feasibility of a stock market investment is a condition of the company's profit. William J. O'neil (founder of Investor's Business Daily) in his book entitled *How to Make Money in Stock* (2003) concluded that by looking at the list of stocks champions, will be seen the relationship between the abundance of earnings and stock abundance. Preliminary information regarding earnings, would lead investors and market analysts to find out more about how big the investment return will be generated and how efficient the company is managing its assets to generate earnings.

To determine the return on investment that is issued, have used the plural form of financial ratios Earning Per Shares (EPS) as a result of computing the net profit after tax by the number of shares issued. Through the analysis of EPS, it is known picture of the benefits to be gained by shareholders per share. Seeing how important analysis of the EPS index, William J. O'neil (2003) to provide an important rule which states that "the current year EPS to be increased in a large percentage (at least 25% to 50% or more) over the same quarter a year position previously. The best seed company has a position of 100% to 500% or more ". It adds that "Fluctuations EPS is the only element important for the process of selecting the best leading stocks today. The higher percentage increase in EPS, the better ".

However, the positive relationship between EPS or ROA on stock prices is in fact not always proven true. Based on data from Statistics Yearly IDX issued by the Indonesia Stock Exchange, in a span of 2010 and 2011 it is known that the group of coal mining company there are anomalies which shows that the stock price moves adversely EPS and ROA. For example, in 2011, PT Adaro Energy Tbk, recorded a value of Annual EPS of Rp136 (up 65 points from the previous year) and ROA of 0.068 times (up 0,026 points from the previous year). Normally, the increase in EPS and ROA will increase the interest of investors to buy shares of PT Adaro Energy Tbk, which leads to increased stock prices. But what happens is the share price (closing price) of PT Adaro Energy Tbk, instead of Rp2.550 decreased in 2010 to Rp1.770 in 2011 (Ito Warsito.2011).

Similar circumstances, PT Borneo Lumbung Energi & Metal, Tbk at the end of 2011 Annual EPS recorded value of Rp100 (up 98 points from the previous year) and ROA of 0.128 times (an increase of 0.124

points from the previous year). However, the closing price on the stock price dropped to Rp.830 (corrected to 510 points from the previous year). These conditions not only affects PT Adaro Energy Tbk, and PT Borneo Lumbung Energi & Metal, Tbk alone, but also occurs in 4 other coal miner, PT Bumi Resources, Tbk., PT Indo Tambangraya, Tbk., PT Prime Karya Perkasa Tbk., and PT Tambang Coal Bukit Asam Tbk. The reason why the correction of stocks in the coal sector compared to other sectors of the sharpest since the valuation, stocks in this sector since the beginning has been relatively expensive. So, it is natural that the share price falls sharply. Meanwhile, according to the Ministry of Research Indonesia Finance Today, quoted from [www.bakrieglobal.com](http://www.bakrieglobal.com), the decline in the stock price of coal mining enterprises apart due to coal prices, investors are also paying attention to other factors that influence a more dominant. Factors beyond international coal prices, the note investor is the potential increase or decrease in production volume issuers that will affect the growth of net income, including acquisition strategy that could push the value of the company. In addition, the Indonesian market participants are still more often used as a benchmark in world oil prices to trade. Rise and fall of world oil prices are also expected to be a reference regarding the increase or decrease in the price of coal in the world, so that the correlation index of mining in Indonesia more strongly to changes in oil prices (Teguh Hidayat, 2011).

## 1.2. Research Problem

Based on the background and the identification of the problem, as has been stated above, the problem is presented and discussed in this study are:

1. Are EPS partially significant effect on stock prices in the coal mining company listed on the Indonesia Stock Exchange?
2. Are ROA partially significant effect on stock prices in the coal mining company listed on the Indonesia Stock Exchange?
3. Are EPS and ROA jointly significant effect on stock prices in the coal mining company listed on the Indonesia Stock Exchange?

## 1.3. Research Objectives

In accordance with the research problem, the objectives of this research are:

1. Determine the higher the percentage increase in the stock price decreases EPS
2. Determine the higher the percentage increase in the stock price decreases ROA

## 2. Literature Review, Conceptual Framework and Hypothesis

### 2.1. Literature Review

As is well known, one of the financial instruments traded on a stock exchange is stock. In Handbook of Investment in Indonesia Capital Market issued by Bapepam (Ministry of Finance), the stock is defined as a certificate showing proof of ownership of a company, and shareholders have the right to claim on the income and assets of the company (2003). Donald E. Kieso et al. (2011) states that: "Preferred shares are a special class of shares that possess certain preferences or features not possessed by ordinary shares". To study the movement of stock prices based on these factors, investors or market analysts use fundamental analysis and technical analysis. Ben McClure, European Equities Analyst at London Based Old Mutual Securities that "Fundamental analysis is a technique that attempts to determine a security's value by focusing on underlying factors that affect a company's actual business and its future prospects".

EPS is one of the financial ratios that were able to show how big the benefits of shareholders per share. In some literature, we can find that the opinions expressed in EPS classify into types of financial ratios. Donald E. Kieso et al. (2011) grouped into types EPS profitability ratios and stated that: "A Company customarily sums up the results of its operations in one important figure: net income. However, the financial world has widely accepted an even more distilled and compact figure as the most significant business indicator-earning per share". Earning Per Share indicates the income earned by each ordinary share. Thus, companies report earnings per share only for ordinary shares".

Arthur J. Keown, et al. (2008) stated that "the return on assets ROA can be used as an indicator of the profitability of the company. Return on assets determine the amount of revenue generated from the assets of the company by connecting the net income to total assets".

ROA can describe how effective the company utilizes its assets into profit. Investopedia suggests that: "The ROA figure gives investors an idea of how effectively the company is converting the money it has to invest into net income. The higher the ROA number, the better, because the company is earning more money on less investment".

### 2.2. Conceptual Framework

The purpose of investors to invest in the stock market must want to get the benefit of what has been invested.

Such benefits may be derived from dividends or capital gains. Dividend is a form of trade-offs given the company on the profits generated. Usually dividends distributed after the approval of shareholders and done once a year. Dividends are not all given the form of cash dividends (dividends in the form of money), but can also be given in the form of stock dividends. While the capital gain is the difference between the purchase price and the selling price in the market. Capital gains are formed in the presence of trading activity in the stock market.

For most investors, the soundness of the company like a stone in the decision to buy or not to buy a stock. In normal conditions, it seems unlikely that any interested investors to invest their capital in the ailing company, except the speculators. One of the indicators of a company can be said to have a sound financial performance is when the company is able to generate profits from the business undertaken. Income generated is then used by the company to develop a business or used to improve the welfare of the shareholders with dividend distribution mechanism.

After knowing the condition of profit, the next question is, whether the rate of return offered by the company is quite attractive compared with the returns of other companies in the same group. Financial ratios that can answer that question is EPS. Brigham and Houston (2009) stated that "there is a high correlation between EPS, cash flow, and share price". By observing the level of EPS, investor or market analyst can compare the stock which is more profitable. William J. O'Neil (2003) states that "fluctuations in EPS is the only element important for the process of selecting the best leading stocks today. The higher percentage increase in EPS, the better".

Brigham and Houston (2009) states "that maximize stock prices that businesses need efficient and low cost that produce goods and services high quality with the lowest possible cost". Maximizing stock also requires the development of products and services they want and need, so that the profit motive will lead to new technologies, to new products, and the new jobs. For companies that are able to improve the effectiveness and efficiency, the company is likely to persist in the long term. In assessing the efficiency of the company, one of the ways that can be used is by comparing the earnings generated by total assets (ROA).

High interest due to the confidence of investors to performance management that is able to manage the resources of its assets into profits. The greater the profit generated, the level of stock return expected by investors will be greater or a positive value. Furthermore, investors will tend to invest in shares in these companies. This will lead to an increase in demand for stocks in the stock market. Assuming that the number of shares outstanding remains, it is certain that the stock price will move higher.

Arifin (2002) states that "The higher the ROA the higher the company's ability to generate profits, the higher the company's income would make investors interested in the stock value". This is in line with the opinions expressed by Rowland Bismark Pasaribu Fernando (2008) in the Journal of Economics and Business which states that the "fundamental factors that are often used to predict the stock price or stock returns are financial ratios and market ratios. Financial ratios serves to predict stock prices, among others, return on assets (ROA). This framework can be described in the frame of the picture as follows:

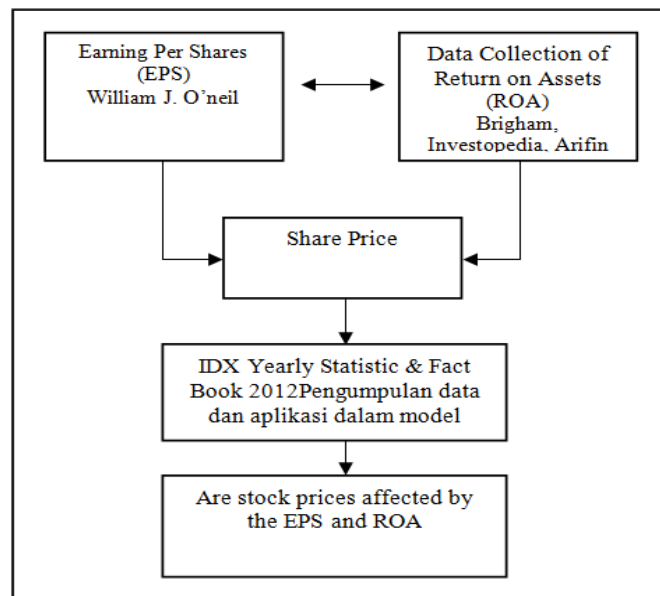


Figure. Framework

### 2.3. Research Hypotheses

Based on relevant theories and concepts as well as the results of previous studies, the hypothesis used in this study are as follows:

- H1 : EPS partially significant effect on stock prices in the coal mining company listed on the Indonesia Stock Exchange.
- H2 :ROA is partially significant effect on stock prices in the coal mining company listed on the Indonesia Stock Exchange.
- H3 : EPS and ROA are jointly significant effect on the stock price on the coal mining company listed on the Indonesia Stock Exchange.

### 3.Methodology

The research design used in this study is a descriptive study. Husein Umar (2013) states that "design aims to outline the nature or characteristics of a particular phenomenon". To support the study design, the authors use quantitative data analysis method using the data parametric inferential statistics. Inferential statistical analysis will be used to describe the study variables, the stock price, EPS and ROA based on data collected from the annual statistics issued by the Indonesia Stock Exchange. The data will be used in support of this research is secondary data. Secondary data from a form of panel data modeling which combines the data cross (cross section) with the time series data (time series). The author uses panel data because it has several advantages compared to the use of using time series data or cross section, namely: First, by combining the data time series and cross section in panel data, making the number of observations becomes larger. By using a panel data model marginal effects of the explanatory variables seen in two dimensions (individual and time) so that the estimated parameters will be more accurate than the other models. Second, technically panel data can provide informative data, reducing collinearity between variables and to increase the degree of freedom that means increasing efficiency (M. Eden, 2012). Given data to be used are secondary data, then the data collected came from sources printed or electronic. Stock Price Data, Earnings Per Shares (EPS), and Return on Assets (ROA) were used in this study comes from the IDX Yearly Statistics and Fact Book published by the Indonesia Stock Exchange.

The population in this study are all listed coal mining company in Indonesia Stock Exchange. Opportunity sampling technique is sampling a total of 11 (eleven) coal mining company to be sampled. The data collected is processed with the help of Eviews software version 7 and SPSS 17th version. Researchers chose to use a combination of Eviews and SPSS in order to have some confidence in the testing needed to analyze the data with panel data model. Prior to the data analysis with panel data model, the normality test done first and the classic assumption test aims to establish the assumption that data will be processed normally distributed.

As mentioned earlier that a panel data model of the data that is a combination of cross section with time series data is. For the cross section data regression model used is:

$$Y = \alpha + \beta X_i + \varepsilon_i$$

Information :

i = 1,2, ...N

N = the number of cross section data

As for the time series data regression model used is :

$$Y = \alpha + \beta X_t + \varepsilon_t$$

Information :

t = 1,2, ...T

N = The number of time series data

To estimate the parameters of the model with panel data, Nachrowi Djalal Hardius Nachrowi and Usman (2006) states there are three models that can be used is Ordinary Least Square (common effect), Fixed Effects Model (Fixed Effect), and the Random Effects Model (Random Effect).

### 4.Type, Source and Collection Method of Data

#### 4.1.Data Panel Election

##### a. Chow-Test

Chow test is a test to determine the Ordinary Least Square Model or Fixed Effects Model most appropriately used in estimating panel data. The hypothesis of the Chow test is :

H<sub>0</sub> : *Ordinary Least Square*

H<sub>1</sub> : *Fixed Effect Model*

Basic rejection of the hypothesis above is the calculation of the F-statistic comparing the F-table. Comparison of the results calculated F is used when larger (>) than the F table then H<sub>0</sub> is rejected, which means the most appropriate model to use is the Fixed Effects Model. Vice versa, if the calculated F is smaller (<) from the F table then H<sub>0</sub> is accepted and the model used is Ordinary Least Square.

To calculate the value of F, is done with the following formula :

Where:

$$F = \frac{\frac{(SSE_1 - SSE_2)}{(n - 1)}}{\frac{SSE_2}{(nt - n - k)}}$$

SSE<sub>1</sub> : Sum Square Error from model Ordinary Least Square

SSE<sub>2</sub> : Sum Square Error from Fixed Effect Model

n : Number of companies (*cross section*)

nt : Total cross section x total of time series

k : The number of independent variables

To compare with the value of F table, can use the following formula :

$$F = \{ \alpha; df (n - 1, nt - n - k) \} \dots$$

$\alpha$  : The significance level used (alfa)

n : Number of companies (*cross section*)

nt : Total *cross section* x total *time series*

k : The number of independent variables

#### b. Hausman-Test

After conducting the Chow test then the next we will examine which model the Fixed Effects Model or Random Effects Model the most appropriate, this test is referred to as the Hausman test.

Tests conducted by the Hausman test the following hypotheses :

H<sub>0</sub> : Random Effect Model

H<sub>1</sub> : Fixed Effect Model

The Hausman test statistic follows the Chi Square statistic distribution with degree of freedom as k-1, where k is the number of variables of the study overall. If the value of the Hausman statistic is greater than the critical value then H<sub>0</sub> is rejected and the appropriate model is the Fixed Effects Model while the opposite when the value of the Hausman statistic is smaller than the critical value then the appropriate model is the Random Effects Model.

#### c. Lagrange Multiplier

Lagrange Multiplier (LM) is a test to determine whether the Random Effects Model or Ordinary Least Square model is most appropriate.

Hipotesis yang digunakan adalah :

H<sub>0</sub> : Ordinary Least Square Model

H<sub>1</sub> : Random Effect Model

LM test is based on the chi-squares distribution with degree of freedom for the number of independent variables. If the value of the LM statistic greater than the critical value of chi-squares statistic we reject the null hypothesis, which means that a precise estimate for the panel data regression model is a model of Random Effects Model of the Model Ordinary Least Square. Conversely, if the value of the LM statistic is smaller than the value of chi-squares as a critical value, then we accept the null hypothesis, which means that the estimates used in the panel data regression model of Ordinary Least Square is not Random (Random Effects Model).

## 4.2.Hypothesis testing

### 4.2.1.Hypothesis Test Using the t test (partial)

After making the overall regression coefficient test, then the next step is to calculate the individual regression coefficients (partial), using a test known as the t test. The hypothesis in this test is as follows :

H<sub>0</sub> :  $\beta_j = 0$

H<sub>1</sub> :  $\beta_j \neq 0; j = 0,1,2 \dots, k$

k is the slope coefficient

From the hypothesis, it can be seen whether the independent variables have a significant influence on the dependent variable. T values resulting from the processing will be compared with the value of the t table. If it turns out after  $|t \text{ count}| > t \text{ table}$ , the t values are in the rejection region, so that the null hypothesis is rejected at confidence level  $(1-\alpha) \times 100\%$ . In this case it can be said that the statistically significant independent variables on the dependent variable.

### 4.2.2.Hypothesis Testing Using the F test (simultaneous)

F test is used to determine whether all the independent variables together can influence the dependent variable (the goodness of fit model). F test is done by comparing the F count and F table with a predetermined degree of

confidence. Thus, the general hypothesis is written as follows:

$$H_0 : \beta_1 = \beta_2 = \beta_3 = \beta_4 = \dots = \beta_k = 0$$

$H_1$  : not the case (at least one slope  $\neq 0$ )

Eviews application 7 will display the value of the F Statistic to be compared with Table F, with criteria  $F = \{ \alpha ; df (n - 1, nt - n - k) \}$ .

If:

- F count > F table then all the independent variables (EPS and ROA) are jointly significantly influence the dependent variable.
- F count < F table then all the independent variables (EPS and ROA) are jointly not significantly dependent terhadap variabel.

#### 4.2.3. Hypothesis Testing Using the coefficient of determination R2 (R-Squared)

The coefficient of determination (R2) is an important measure in the regression, as it can inform whether or not the regression models were estimated. Coefficient of determination reflects how much the variation of the dependent variable Y can be explained by the independent variable X. If the value of the coefficient of determination is equal to 0 (R2 = 0), meaning that the variation of Y can not be explained by X at all. Meanwhile, when R2 = 1, meaning that the overall variation of Y can be explained by X. In other words, the closer the value of 1, the more likely X variable explain the Y variable. In this case, the coefficient of determination will measure how closely a variable EPS and ROA are together to explain the phenomenon of stock prices on the stock exchange.

### 5. Results

Based on data from the IDX Yearly Statistics and Fact Book published by the Indonesia Stock Exchange in 2009 to 2013, the data obtained EPS, ROA, and stock price. Researchers conducted using SPSS data processing to obtain data such as mean, maximum, minimum, and standard deviation. The following is a table of the results if the descriptive statistics:

**Descriptive Statistics**

	N	Minimum	Maximum	Mean	Std. Deviation
Stockprice	55	50	50750	8133.51	12379.468
Eps	55	-786.00	4110.00	569.6635	1122.04752
Roa	55	-1.153846	7.30862	.0950776	.164761332
Valid (listwise)	N 55				

Source: Data processed SPSS Version 17

#### 5.1. Normality test

The data of each independent variable that I use amounted to 55 objects each observation, referring to one of the rules of the Central Limit Theorem, then the data can be categorized as data are "sufficiently large" and can be considered normally distributed. Based on the results obtained the data processed PP plot description as below :

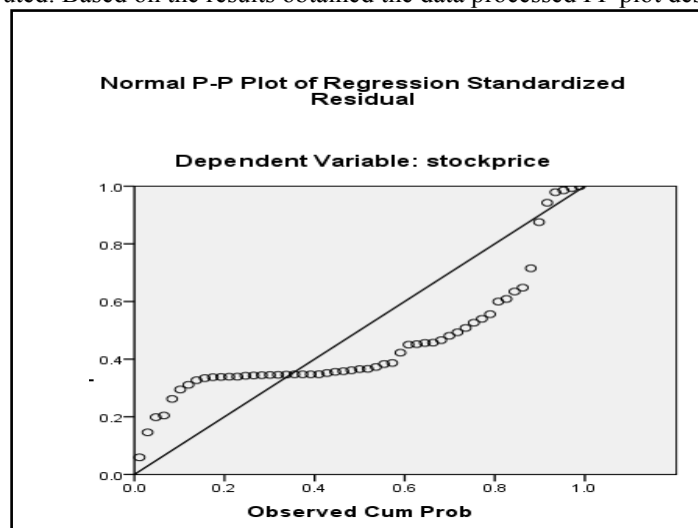


Figure 4.1. P-P Plot Test normality processed with SPSS

Based on Figure 4.1. above shows that the scattered dots are interconnected to form a pattern that follows the diagonal line. From the picture it does not look too out of the pattern variables (outlier), so the researchers assume that the data used in this study were normally distributed.

## 5.2. Data Panel Modeling

### 5.2.1. Ordinary Least Square Model (common effect)

This technique is no different than making a regression with cross section data or time series. However, for panel data, before making regression, first must incorporate cross section data with time series data (the data pool). Here are the results of data analysis using Ordinary Least Square model (common effect) :

Table 4.1. Ordinary Least Square Model (common effect)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
ROA	443.3091	5392.353	0.082211	0.9348
EPS	9.609557	0.791812	12.13615	0.0000
C	2617.147	1000.055	2.617003	0.0116
R-squared	0.762092	Mean dependent var		8133.509
Adjusted R-squared	0.752942	S.D. dependent var		12379.47
S.E. of regression	6153.210	Akaike info criterion		20.34034
Sum squared resid	1968823706.990173	Schwarz criterion		20.44983
Log likelihood	-556.3593	Hannan-Quinn criter.		20.38268
F-statistic	83.28593	Durbin-Watson stat		1.762781
Prob(F-statistic)	0.000000			

$$\text{STOCKPRICE} = 443.309147938 * \text{ROA} + 9.60955670293 * \text{EPS} + 2617.1470208$$

Source: Processed Data Eviews

Based on the calculation above, it is known that the EPS and ROA equally positive effect on the stock price with a coefficient of 9.609557 EPS and ROA at 443.3091. R-Squared value also seems quite large: 0.762, meaning that the independent variables (EPS and ROA) is able to describe the dependent variable (stock price) of 76.20%. The above results also show that the value of the t-statistic greater in the EPS variable which is equal to 12.31, but is relatively low at 0.0822 the ROA variable.

### 5.2.2. Fixed Effect Model (Fixed Effect)

Fixed Effects Model is the same as that used dummy variable regression as independent variables, to distinguish one object with another object. The effects are still here means that one object, has remained constant magnitude for various periods of time. Likewise, the regression coefficient, fixed magnitude over time (time invariant). Here are the results of the analysis of the data using the Fixed Effects Model (Fixed Effect):

Fixed Effect Model (Fixed Effect)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	5139.828	869.9950	5.907883	0.0000
EPS	5.025392	0.999663	5.027088	0.0000
ROA	1376.753	4774.486	0.288356	0.7745

#### Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.898191	Mean dependent var	8133.509
Adjusted R-squared	0.869103	S.D. dependent var	12379.47
S.E. of regression	4478.848	Akaike info criterion	19.85518
Sum squared resid	842523295.0427113	Schwarz criterion	20.32964
Log likelihood	-533.0175	Hannan-Quinn criter.	20.03866
F-statistic	30.87826	Durbin-Watson stat	2.492382
Prob(F-statistic)	0.000000		

$$\text{STOCKPRICE} = 5139.82837074 + 5.02539222471 * \text{EPS} + 1376.75251482 * \text{ROA} + [\text{CX}=\text{F}]$$

Source: Processed Data Eviews

Based on the calculation above, it is known that the EPS and ROA equally positive effect on the stock price with a coefficient of 5.025392 EPS and ROA of 1376.753. R-Squared value is greater than the calculation of the common effect that is 0.8981, meaning that the independent variables (EPS and ROA) is able to describe the dependent variable (stock price) of 89.81%. The above results also demonstrate the value of the t-statistic EPS variables smaller than the value of the t-statistic on the model common effect but still quite large compared to the value of the t-table, which is still small 5,027. Nilai ROA variable, which is equal to 0.288.

### 5.2.3. Random Effect Model (*Random Effect*)

In the Random Effects Model, the differences between individuals and or time reflected through error. This technique also takes into account that the errors may be correlated along the time series and cross section. Here are the results of the analysis of the data using the Random Effects Model (Random Effect).

Random Effect Model (*Random Effect*)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	3590.057	1156.380	3.104565	0.0031
EPS	7.857900	0.768264	10.22813	0.0000
ROA	705.6699	4427.803	0.159372	0.8740

Effects Specification		S.D.	Rho
Cross-section random		2801.650	0.2812
Idiosyncratic random		4478.848	0.7188

Weighted Statistics			
R-squared	0.623336	Mean dependent var	4730.357
Adjusted R-squared	0.608849	S.D. dependent var	8311.389
S.E. of regression	5198.115	Sum squared resid	1.41E+09
F-statistic	43.02703	Durbin-Watson stat	1.929472
Prob(F-statistic)	0.000000		

Unweighted Statistics			
R-squared	0.737244	Mean dependent var	8133.509
Sum squared resid	2.17E+09	Durbin-Watson stat	1.246760

$$\text{STOCKPRICE} = 3590.05726874 + 7.85789985066 * \text{EPS} + 705.669857747 * \text{ROA} + [\text{CX}=\text{R}]$$

Source: Processed Data Eviews

Based on the calculation above, it is known that the EPS and ROA equally positive effect on the stock price with a coefficient of 7.8579 and ROA EPS amounted to 705.6699. R-Squared value on the Random Effects model is much smaller than the calculation of the fixed effect that is common effect dan 0.6233. That is, the independent variable (EPS and ROA) is able to describe the dependent variable (stock price) of 62.33%. The above results also demonstrate the value of the t-statistic EPS variables smaller than the value of the t-statistic on the model common effect but still quite large compared to the value of the t-table, namely 10,228. Neither the value of the variable ROA, which is equal to 0.159.

### 5.2.4. Selection of Panel Data Models

#### 5.2.4.1. Chow-Test

To choose regression models which one is better between Model Ordinary Least Square (common effect) and the Fixed Effects Model (Fixed Effect Model), the Chow test is done with the following hypothesis :

$H_0$  : Ordinary Least Square

$H_1$  : Fixed Effect Model

$$F_{\text{count}} = \frac{(1968823706.99017 - 842523295.042711)}{(11 - 1)} \div \frac{842523295.042711}{(55 - 11 - 2)} = 2,67$$

F-table (df1= 10, df2=42) = 2,06

Based on the calculations above, the results of the F-count is greater than the F-table, then  $H_0$  is



rejected, which means that the best models in between these two models is the Fixed Effects Model (Fixed Effect Model).

#### 5.2.4.2. Hausman-Test

To choose regression models which one is better between the Fixed Effects Model (Fixed Effect Model) and Random Effects Model (Random Effects Model) the most appropriate, the Hausman test done with the following hypothesis:

$H_0$  : *Random Effect Model*

$H_1$  : *Fixed Effect Model*

The Hausman test statistic follows the Chi Square statistic distribution with degree of freedom as  $k-1$  ( $df = 2$ ), where  $k$  is the number of variables of the study overall. Hausman test results as stated in the calculations below:

Table : Hausman Test Result

Correlated Random Effects - Hausman Test

Equation: RANDOM

Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	20.042648	2	0.0000

Source: Processed Data Eviews

Based on the above calculation, it is known that the value of Chi Square Statistic is at 20.042648, greater than the critical value in the table Chi Square ( $\alpha = 5\%$ ,  $df = 2$ ) of 5.99146. If the value of the Hausman statistic is greater than the critical value, then  $H_0$  is rejected and  $H_1$  is accepted. That is, a better model of the two models is the Fixed Effects Model (Fixed Effect Model).

In view of the Chow test and the Hausman test results obtained most appropriate model is the Fixed Effects Model (Fixed Effect Model), then the Lagrange multiplier test is not necessary.

#### 5.2.5. Hypothesis Testing

##### 5.2.5.1. Hypothesis Test Using the t test (partial) EPS variable

Hypothesis testing is based on the Fixed Effects Model (Fixed Effect Model) which has been established as the best model compared to the two other models. To determine the effect of variable EPS partially on stock price, t test performed with the following hypothesis:

$H_0$  : EPS partially no significant effect on stock price.

$H_1$  : EPS partially significant effect on stock price.

Based on calculations it is known that the value of the t-statistic EPS variable is equal to 5.907 with a probability level of 0.000.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	5139.828	869.9950	5.907883	0.0000
EPS	5.025392	0.999663	5.027088	0.0000

Source: Processed Data Eviews

When compared with the value of t-table ( $\alpha = 5\% / 2$ ,  $df = 55-3 = 52$ ) = 2.00665), it is known that the value of the t-statistic greater than the t-table value. it is certain that  $H_0$  is rejected and  $H_1$  is accepted. This suggests that EPS significantly affect the stock price.

##### 5.2.5.2. Hypothesis Test Using the t test (partial) ROA variable

Hypothesis testing is based on the Fixed Effects Model (Fixed Effect Model) which has been established as the best model compared to the two other models. To determine the effect of variable ROA partially on stock price, t test performed with the following hypothesis:

$H_0$  : ROA partially no significant effect on stock price.

$H_1$  : ROA is partially significant effect on stock price.

Based on calculations it is known that the value of the t-statistic is equal to 0.288356 ROA variable with a probability level of 0.7745.

T Test ROA variabel				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	5139.828	869.9950	5.907883	0.0000
ROA	1376.753	4774.486	0.288356	0.7745

Source: Processed Data Eviews

When compared with the value of t-table ( $\alpha = 5\% / 2$ ,  $df = 55-3 = 52$ ) = 2.00665), it is known that the value of the t-statistic is smaller than the value of the t-table. By comparing the value of the t-statistic and t-table and look at Figure 4.14 it is certain that  $H_0$  is accepted and  $H_1$  is rejected. This shows that the ROA is partially not significantly affect the stock price.

### 5.2.5.3.Using the F test (simultaneous)

Hypothesis testing is based on the Fixed Effects Model (Fixed Effect Model) which has been established as the best model compared to the two other models. To determine the effect of EPS and ROA variables together on Stock Price, F test performed (simultaneously) with the following hypothesis:

$H_0$  : EPS and ROA together had no significant effect on stock prices.

$H_1$  : EPS and ROA are jointly significant effect on stock price.

F Testing Hypothesis

Cross-section fixed (dummy variables)

F-statistic	30.87826	Durbin-Watson stat	2.492382
Prob(F-statistic)	0.000000		

Source: Processed Data Eviews

Based on calculations in Fixed Effects Model (Fixed Effect Model) note that the value of the F-statistic is 30.878 with a probability level of 0.000. When compared with the F-table value ( $\alpha = 5\%$ , = 10 DF1, DF2 = 42) = 2.06, it is known that the value of the F-statistic is greater than the value of the F-table. By comparing the value of the F-statistic and the F-table can be assured that  $H_0$  is rejected and  $H_1$  is accepted. This shows that all the independent variables (EPS and ROA) together significantly influence the dependent variable. Coupled with a very small probability value (0,000) or less than 0.05. This further gives confidence to the authors to conclude that it is true EPS and ROA together significantly influence the stock price.

The result of the calculation is slightly different simultaneous with partial test results. When we refer to the results of the calculation of the F-simultaneous, it is known that jointly EPS and ROA significantly affect the stock price. However, if the measured partial, ROA did not significantly affect the stock price. I suspect that when the calculation is done simultaneously, there are similarities between the two independent variables namely the indicator of corporate profits (net income) that is able to affect the stock price movement is strong. Meanwhile, when a partial test, the total asset as construction ROA calculation can not have a significant influence on the movement of stock price.

### 5.2.5.4.Hypothesis Testing Using the coefficient of determination R2 (R-Squared)

This test is done to determine how much variation of the dependent variable Y can be explained by the independent variable X. If the value of the coefficient of determination is equal to 0 ( $R^2 = 0$ ), meaning that the variation of Y can not be explained by X at all. Meanwhile, when  $R^2 = 1$ , meaning that the overall variation of Y can be explained by X. With reference to the Fixed Effects Model (Fixed Effect Model) which has been established as the best regression model, showed the following results :

Hypothesis Testing R2 (R-Squared)

Cross-section fixed (dummy variables)

R-squared	0.898191	Mean dependent var	8133.509
Adjusted R-squared	0.869103	S.D. dependent var	12379.47

Source: Processed Data Eviews

Based on calculations in Fixed Effects Model (Fixed Effect Model) note that the figure coefficient of determination ( $R^2$ ) of 0.8981 or 89.81%. It showed that the percentage contribution of the effect of independent

variables (EPS and ROA) on the dependent variable (stock price) is equal to 89.91%. In other words, the variation in the independent variables used in the model (EPS and ROA) of 89.91% was able to explain the variation in the dependent variable. While the remaining 10.19% is influenced or explained by other variables not included in this research model.

## 6. Discussion

Based on the results of the selection of the best model among the models of Ordinary Least Square (common effect), Fixed effects models (Fixed Effect), and random effects models (Random Effect), obtained the best model is the model of Fixed Effects (Fixed Effect) with the following regression model :

$$\text{STOCKPRICE} = 5139.82837074 + 5.02539222471 * \text{EPS} + 1376.75251482 * \text{ROA} + [\text{CX}=\text{F}]$$

Referring to the constant value of the variable EPS and ROA, the EPS and ROA has a positive effect on stock price. The positive influence of EPS on the stock price in line with the results of research conducted by Placido M. Menaje, Jr. (2012) against 50 companies listed in the Philippine Stock Exchange in 2009 which stated that "the EPS has a strong positive impact on the share price". ROA associated positive influence on stock price, the results of this study are consistent with research conducted by Majed Abdel Majid et al Kabajeh (2012) to all insurance companies listed on the Amman Securities Exchange span of 2002 to 2007, which states that "ROA, ROE, and ROI together Showed a strong and positive relationship with shares prices".

### 6.1.H1: EPS partially significant effect on stock prices in the coal mining company listed on the Indonesia Stock Exchange.

Based on calculations it is known that the value of the t-statistic EPS variable is equal to 5.907 with a probability level of 0.000 is greater than the value of t-table ( $\alpha = 5\% / 2$ ,  $df = 55-3 = 52$ ) = 2.00665). This suggests that EPS significantly affect the stock price. Thus it is certain that the first hypothesis in this study received. This supports the theory stated by William J. O'Neil (2003) which states that "fluctuations in EPS is the only element important for the process of selecting the best leading stocks today. The higher percentage increase in EPS, the better". In general, the increase in EPS can be triggered by two conditions, the first is the increased corporate profits and the second is the number of outstanding common shares in a declining market or in other words be purchased again by the company's treasury stock. The increase in EPS of course highly desirable by investors. If the value of EPS is small then the likelihood of small companies to distribute dividends. So it can be said investors will be more interested in stocks that have a higher EPS than stocks that have low EPS.

### 6.2.H2: ROA is partially significant effect on stock prices in the coal mining company listed on the Indonesia Stock Exchange.

Based on calculations it is known that the value of the t-statistic is equal to 0.288356 ROA variable with a probability level of 0.7745 is smaller than the value of the t-table ( $\alpha = 5\% / 2$ ,  $df = 55-3 = 52$ ) = 2, 00665). This shows that the ROA is partially not significantly affect the stock price. In other words, this study rejects the second hypothesis. Although individually ROA has a positive influence on the stock price, but it turns on the type of coal mining enterprises, ROA as one indicator of the efficiency of the company has no significant effect on stock price movement in the stock market. When associated with the t test on the variable EPS, then this indicates that investors tend to look at how much profit will be generated per strip stock than to know how the company manages its assets into profit. As the theory put forward Jason Van Bergen (2013), an Independent Equity Research Analyst, stating that the option to make an investment or saving can be categorized with three main characters for security (safety), income (income), and growth (growth). "The options for investing our savings are continually increasing, yet every single investment vehicle can be Easily Categorized According to the three fundamental characteristics - safety, income and growth - Correspond to the which also types of investor objectives".

### 6.3.H3: EPS and ROA are jointly significant effect on stock prices.

By comparing the value of the F-statistic and the F-table and look at Figure 4.4, it is certain that the third hypothesis in this study received. This suggests that the EPS and ROA together significantly influence the stock price. That is, under normal circumstances, the increase in EPS together ROA will also affecting the stock price increases on the type of coal mining companies. As explained previously that one of the components in both the financial ratios is the company's profit. The greater the profit, then it is likely to benefit from investment in the shares (dividends or capital gains) will be even greater.

Optimism market against companies that are able to generate large profits and efficient in managing the assets of the company stock prices are high. In real terms, this happens in PT Petrosea, Tbk. Coming in 2010 EPS deficit in 2009, then jumped up to 3426 times in 2010 Neither the ROA index deficit in 2009 rose to 0.13932. The increase in 2010 EPS and ROA are significantly boost the stock price movement PT Petrosea, Tbk,

from Rp10.350 per share to Rp26.000 per share. The same thing happens in PT Bayan Resources Tbk. In 2010, PT Bayan Resources Tbk recorded EPS of 195 times the index, up from the previous year stands at 71 times. Even with ROA index increased from 0.06250 0.026496 times to times. The increase caused the stock price of PT Bayan Resources Tbk increased nearly three-fold from a year earlier in price Rp5.650 be Rp18,000.

The phenomenon that occurred in 2010 and 2011 where there is a decline in stock prices in the event of a rise in EPS and ROA may be caused by factors other than the independent variable in this study. This can be explained by the magnitude of the coefficient of determination is 10.19%, leaving other factors outside of research. Other factors beyond the independent variables thought to have come from macro-economic factors such as the exchange rate against foreign currencies and interest rates as the result of research conducted by Suskim Riantani and Mary Tambunan (2013).

## 7. Conclusion

This study aimed to examine the effect of Earning Per Shares (EPS) and Return on Assets (ROA) to the stock price on coal mining company listed on the Indonesia Stock Exchange. Based on the description and discussion of the analysis of the testing that has been done, it can be concluded as follows:

1. EPS partially significant effect on stock prices in the coal mining company listed on the Indonesia Stock Exchange. This is evident from the results of the model calculations EfekTetap (Fixed Effect Model) that demonstrate the value of the t-statistic of 5.907 with variable EPS probability level of 0.000 is greater than the value of t-table ( $\alpha = 5\% / 2$ ,  $df = 55-3 = 52$ ) of 2.00665.
2. ROA partially no significant effect on the stock price on the coal mining company listed on the Indonesia Stock Exchange. This can be seen from the calculation of the Fixed Effects Model (Fixed Effect Model) which shows the t-statistic value of 0.288356 ROA variable with a probability level of 0.7745 is smaller than t-table ( $\alpha = 5\% / 2$ ,  $df = 55-3 = 52$ ) of 2.00665.
3. EPS and ROA jointly positive and significant impact on stock prices in the coal mining company listed on the Indonesia Stock Exchange. It is seen from the formula generated by Fixed Effects Model (fixed effect)  $STOCKPRICE = 5.02539222471 * 5139.82837074 + EPS + 1376.75251482 * ROA + [CX = F]$  and the calculation of the value of the F-statistic of 30.878 (0.000 probability level) greater than F-table value ( $\alpha = 5\%$ ,  $DF1 = 10$ ,  $DF2 = 42$ ) of 2.06. This study supports the theory expressed by William J. O'neil (2003) and Brigham and Houston (2009) as stated in Chapter II. The phenomenon that occurred in 2010 and 2011 where there is a decline in the stock price of PT Adaro Energy Tbk, and five other coal mining companies in the event of a rise in EPS and ROA, likely caused by factors other than the independent variable in this study (such as the exchange rate against foreign currency and interest rate of Bank Indonesia) which needs to be further investigated.

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