

# The Influence of Net Income and Corporate Social Responsibility towards Stock Price (an Empirical Study of Manufacturing Companies Listed on Indonesia Stock Exchange (IDX) During the Period of 2014-2016)

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**Abstract.** The aim of this research is to evaluate the influence of net income and corporate social responsibility (CSR) towards stock price. The population involved in this research are manufacturing companies listed on Indonesian Stock Exchange (IDX) during the period of 2014-2016. Purposive sampling method was used to determine samples, where 76 samples were selected based on the research criteria. This research employed stock price to par value ratio for measuring stock price. ROA (Return On Asset) was used to represent net income, and CSRI (Corporate Social Responsibility Index) was used for assessing the degree of CSR disclosure. This research also used corporate size and corporate risk as control variables. This research used a secondary data. The data were analyzed by using multiple linear regression. The results of this research indicated that net income proved to have a significant positive influence towards stock price. Another finding is that CSR had a relatively negative relationship (marginally significant) towards stock price. The research also found that net income and CSR simultaneously had a significant influence with positive influence towards stock price.

## 1. Introduction

In the modern economy, one of the external sources of funding for the company is through the capital market [1]. The capital market is a means for companies to compete fairly in order to attract investors to invest in their companies. Investors need information about the company's performance so they can help them make investment decisions. The financial report aims at providing information about the financial position, performance, and cash flow of the company beneficial to most users of financial statements in order to make economic decisions [2]. According to Azilia and Yulius (2012), the parameter of company performance that has become the investors' main concern is profit. The company must be able to convince investors that the two main performance parameters are able to describe the actual condition of the company properly. The company's income statement describes the company's performance over a certain period (usually one year) [3]. The importance of earnings information is expressly stated in the Statement of Financial Accounting Concepts (SFAC) No.1, that in addition to helping to assess management performance, it also helps to estimate representative profitability, and also helps to assess risks in investment and credit [4].

According to [5], the main purpose of profit-oriented organizations is to maximize shareholder value (profit maximization). Along with the rapid development of the business sector due to economic liberalization, the view of the company began to shift from being only concerned with profit maximization to upholding the 3P principle consisting of profit, people, and planet, which was better known as the triple bottom line. This view is supported by [6] who affirm that achieving 'satisfactory profit' is a company goal better than 'profit maximization' because if managers only focus on maximizing profits, they will always think of ways and alternatives to increase profitability that will

not end. In the end, they will only waste their lives always thinking about increasing the profitability of the company.

Most managers want to run their business in accordance with applicable ethics. Besides, managers also feel they have a responsibility to other stakeholders who come into contact with companies other than shareholders. The idea of Corporate Social Responsibility (CSR) became a topic receiving great attention from various groups: academics, public, business people, community organizations, and government-owned enterprises. The results of the 1992 Earth Summit in Rio de Janeiro, Brazil agreed on a change in the development paradigm, from economic growth to sustainable development [7]. In Indonesia, the company's obligation to implement CSR has been regulated in Law No. 25 Article 15b of 2007 concerning Investment, which states that it is every investor's obligation to carry out corporate social responsibility. One indicator to assess the benefits of a company's economic-business is to see the value of the company. The value of the company can be increased by increasing the prosperity of the owner or shareholders [8]. One aspect that can be used to estimate company performance is earnings information. Information about earnings or the level of return obtained by the company listed in the financial statements will cause a reaction to the company's stock price [9]. The company also cannot forget its main goal of increasing the value of the company by increasing the owner or shareholders (Gapensi, 1996, in Wahidwati, 2002). For shareholders, profit means an increase in the wealth that will be received through dividend distribution, and is considered to have information to analyse and to predict stocks issued by issuers [8].

This research also employs a control variable that is the size of the company measured using a log of total assets and company risk, which is measured using a debt to total asset ratio (DAR). The purpose of using control variables is to complement or control causal relationships so that the empirical model becomes better and more complete [10]. Control variables are variables controlled or made constant. Stock prices are influenced by many internal and external factors. Therefore, a control variable is needed to ensure the influence of each independent variable used in this research, namely net income and CSR, on the dependent variable, namely stock prices, so that the influence of independent variables on the dependent variable is not influenced by external factors not examined.

## 2. Literature Review

### 2.1 Net income

Profit is the main measurement of the company's financial performance in an accounting period and is the centre of attention of financial statement users [11]. One qualitative characteristic of profit information is its ability to predict stock prices [12]. Market reaction to stock prices will be reflected in stock price movements around the date of profit announcements. Stock prices tend to increase if the reported profit gets bigger and vice versa [12].

If the net income obtained by the company is high, then the dividends to be distributed to shareholders are also high, and more investors are interested in investing in the company. Conversely, if the company's net income is low, then dividends to be distributed to shareholders will also be low, and the number of investors interested in investing will also be decreasing.

There are several uses of reporting of net income according to [13]: (a) as a determination of company dividend and storage policies. The amount of net income recognized by the company is an indicator of the maximum amount of dividends that can be distributed to shareholders or be held for expansion or be used for reinvestment; (b) As a guide in investing and in making general decisions. Most investors will see the company's net income figures because their goal is to maximize the results of the invested capital, which is worth the level of risk received; (c) As a measure of the company's efficiency. It is a reflection of the management over company resources and the efficiency in running the company.

In general, shareholders are very interested in net income because it describes the amount of profit that can be interpreted in the future [13]. It is the same with prospective shareholders who are interested in large net income. Thus, they will feel more confident and safer to invest in the company. If the profit received by investors is high, the investor will receive a good return on investment [13].

This encourages investors to continue to make investments, even with increasing numbers. The stock price automatically continues to increase as a result of the mechanism.

## 2.2 *Concept of Corporate Social Responsibility.*

This concept of CSR is defined by The World Business Council for Sustainable Development as a business commitment to contribute to the sustainable economic development and to work with company employees, the employees' families, local communities, and the community in order to improve the quality of life. Meanwhile, according to Suharto (2007), CSR is a business operation committed not only to increase the company's profits financially, but also to develop the socio-economic region in a holistic, institutional, and sustainable manner. Thus, it can be concluded that CSR is the company's commitment to provide a long-term contribution to a particular problem in society to create a better environment so that there is a mutually beneficial relationship. It can be in various forms, such as scholarship programs, infrastructure development, public facilities, labour training, and so on. The concept of CSR first appeared after the Second World War when companies grew to become so large and became more open to competition and criticism [14].

The doctrine of "profit maximization" was opposed by [6]. They assume that achieving 'satisfactory profit' is a company goal better than 'profit maximization' because if managers only focus on maximizing profit, they will always think of ways and various alternatives to improve profitability, which will not end. Hence, they will only waste their life always thinking about increasing the profitability of the company. The company's financial performance is important, but it is not the only responsibility of the business world. Most managers want to run their business in accordance with applicable ethics. Besides, managers also feel they have a responsibility to other stakeholders who come into contact with companies other than shareholders. Therefore, the principle of the business world starts to develop from only focusing on profit, to focusing on profit, people, and planet (3P) or better known as the triple bottom line.

## 2.3 *Stock price*

Stocks are one type of financial asset that investors can choose when investing. Investors need to assess the stocks they have chosen before making an investment decision in order to minimize risk. The level of return on investment in stocks in the capital market is largely determined by the price of the stock. Therefore, to be able to predict returns that will be received by investors, they must know the factors influencing stock prices [15]. According to Usman 1989 [16], there are many factors influencing stock prices in the capital market, including the psychological factors of sellers and/or buyers, company conditions, directors' policies, interest rates, commodity prices, other investments, economy conditions, government policy, income level, inflation rate, and market conditions. Changes to these factors can affect the rise and fall of stock prices [16].

Stock prices are determined by market forces. Trading transactions taking place on the Indonesia Stock Exchange (IDX) used an overdriven market system and a continuous auction system. The continuous auction system shows that the transaction price is determined by the investors' offer and demand. They will buy the stock if the intrinsic value is above the market price and vice-versa.

According to [17], two basic approaches can be used to analyse and select stock prices. The first is fundamental analysis based on the company's historical data in the form of financial statements. This fundamental approach estimates stock prices in the future by estimating the value of fundamental factors affecting stock prices in the future and applying the relationship of these variables to obtain estimated stock prices. The investors will then use the intrinsic value to be estimated and the results will then be compared to the current market value to find out which stock is under-priced and overpriced. The second way is by technical analysis to estimate stock prices by observing changes in stock prices in the past. This analysis technique employs published market data such as stock prices, stock price indices, and other technical factors. The technical analysis aims at determining the timeliness in predicting the short-term price movement of a stock, to give information to investors from technical factors in order to determine the right time to buy and sell securities.

In this research, the value employed is the stock market value, namely the price of the stock on the stock market at a certain time determined by the market participants. Market value was chosen because this value reflects investor decisions regarding information available on the market. In addition, market value is also determined by the demand and supply of a company's stock in the stock market, which is certainly influenced by various market information contained therein.

**3. Research Method**

The population in this research was manufacturing sector companies since they run their business in direct contact with environmental and social factors. Therefore, manufacturing companies were more responsible for environmental and social factors than other business sectors. The total of the population consisting of manufacturing companies listed on the IDX was 138 companies.

The sample selection method employed in this research was purposive sampling method, which was the selection of non-random samples whose information was obtained based on certain considerations, which were: (a) Companies in the manufacturing industry consecutively listed on the IDX during the period of 2014-2016; (b) Companies that have not changed its business activities (manufacturing) during the period of 2014-2016; (c) Companies issuing financial statement information available both printed and online in the period of 2014-2016, audited by officially certified public accounting firms; (d) Companies reporting information on corporate social responsibility in a complete knowledge report available both printed and online in the period of 2014-2016; (e) Companies with a book period ending on December 31; (f) Companies that did not experience delisting from the IDX during the period of 2014-2016. From those criteria, 76 companies were obtained as samples with 228 observational data for three years. To carry out hypothesis testing and data analysis, this research used the help of SPSS version 22. SPSS was used to obtain descriptive statistical data and to conduct BLUE test, regression analysis, t-test, F-test, and analysis of the coefficient of determination. Data collection was carried out using the help of Microsoft Office Excel 2013 application to facilitate the selection of samples using purposive sampling method.

Data collection technique used was documentation methods, by finding and collecting data obtained from annual reports and sustainability reports published by manufacturing industry companies listed on the Indonesia Stock Exchange from 2014 to 2016. The data was obtained from the IDX website ([www.idx.co.id](http://www.idx.co.id)) and the companies' websites. The following is the model used in this research.

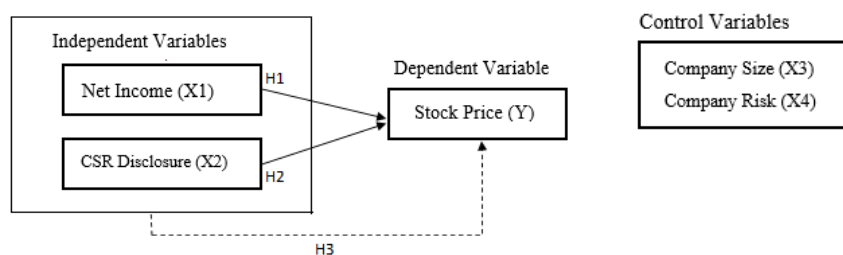


Figure 1. Model of Research

- > : The partial influence of variable X on variable Y
- - - - -> : The simultaneous influence of variable X on variable Y

The research hypotheses are as follows:

- H1: Net income has a significant positive influence on stock prices
- H2: CSR disclosure has a significant positive influence on stock prices
- H3: Net income and CSR disclosure simultaneously have a significant positive influence on stock prices.

**4. Results and Discussion**

The test results are presented in Table 4.1 below:

**Table 4.1** t-Test Results

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
<b>Constant</b>	-1.682	0.615		-2.735	0.007
<b>Net Income (ROA)</b>	7.509	0.448	0.724	16.754	0.000
<b>CSR (CSRI)</b>	-0.639	0.335	-0.083	-1.910	0.057
<b>Risk (DAR)</b>	0.016	0.126	0.005	0.125	0.901
<b>Size (log total asset)</b>	0.234	0.062	0.165	3.803	0.000

The test results for each independent variable are as follows.

#### 4.1 Test on the influence of net income on stock prices

Test on the influence of net income, measured using the ratio of net income to total assets (ROA) to stock prices, produced a regression coefficient value of 7.509, t-observe of 16.754, and significance value of 0.000. T-observe value (16.754)>t-table value (1.972) and significance value (0.000)<0.05. Hence, net income had a significant positive influence on stock prices and the first hypothesis was accepted.

#### 4.2 Test on the influence of CSR on stock prices

Based on the results of the research, the coefficient value for CSR (in this research, CSRI was used to measure the value of CSR disclosure) was -0.639. The t-observe value was -1.910 and the significance level was 0.057. The significance value of CSR was 0.057>0.05, which means that CSR had no significant positive influence, but can be said to be relatively significant or marginally significant.

According to research conducted by Pritschet, Powell, and Horne (2016), a p-value of 0.07 can still be said to be "marginally significant", which means it is not too significant but is near. The p-value for CSR was 0.057, which was still smaller than 0.07. Thus, it can be said that CSR had a marginally significant influence.

T-observe value (-1.910)<t-table value (1.972). However, the difference between the t-observe value (-1,910) with t-table (1.972) was not too far, which was only 0.062. Thus, it can be concluded that CSR variable had a marginally significant negative influence on stock prices.

#### 4.3 Test on the influence of company size on stock prices

Test on the influence of company size (proxied by total assets) on stock prices produced a regression coefficient of 0.234, t-observe value of 3.803, and significance value of 0.000. Therefore, the t-observe value (3.803)>t-table value (1.972) and significance value (0.000)<0.05. Thus, it can be concluded that the total assets proved to have a significant positive influence on stock prices.

#### 4.4 Test on the influence of the company risk on stock prices

Test on the influence of company risk (measured using DAR) on stock prices produced a regression coefficient of 0.016, t-observe value of 0.125, and significance value of 0.901. Since t-observe value (0.125)<t-table value (1.972) and significance value (0.901)>0.05, it can be concluded that debt to total asset ratio (DAR) proved to have no significant influence on stock prices.

The results of the tests carried out on the variables of net income, CSR, company size, and company risk on stock prices can be arranged as the following multiple regression equation: Stock Price = -1.682 + 7.509 ROA - 0.639 CSRI + 0.016 DAR + 0.234 TA + e

The net income regression coefficient of 7.509 showed the direction of the influence of net income on stock prices, which showed a positive direction, meaning that if net income increases by one unit then the stock price will increase by 7.509 points. The regression coefficient value for CSRI was -0.639. It indicated the direction of CSRI influence on stock prices that was negative or opposite, meaning that if CSRI decreases by one unit then the stock price will decrease by 0.639 points.

The Total Asset coefficient of 0.234 showed the influence of Total Assets on stock prices having a positive direction, meaning that if the total assets increase by one unit then the stock price will increase by 0.234 points. Then, the DAR coefficient was 0.016, which means that the relationship between DAR and stock prices was positive. If DAR increases by one point then the stock price will increase by 0.016 points.

#### 4.4.1 Simultaneous Significance Test (F Test).

F test was used to test whether there was a simultaneous influence of independent variables on the dependent variable (Ghozali, 2011, p. 177). F test was conducted by comparing F-observe with F-table at the significance level ( $\alpha$ ) = 0.05. If the F-observe > F-table, then there was a simultaneous influence of independent variables on the dependent variable. Conversely, if F-observe < F-table, then the independent variables do not simultaneously influence the dependent variable. The results of simultaneous significance test (F-test) are as follows.

**Table 4.2** Results of Statistical F-Test with Multiple Linear Regression Model

Model	Sum of Squares	df	Mean Square	F	Sig.
<b>Regression</b>	123.787	4	30.947	80.022	.000
<b>Residual</b>	86.240	223	0.387		
<b>Total</b>	210.027	227			

F-table value for  $df_1=4$  and  $df_2=223$  with a significance value of 0.05 was 5.65. The F-observe was greater than F-table, or  $80.022 > 5.65$ , with the significance value of  $0.000 < 0.05$ . Thus, it can be concluded that the independent variables, which are net income and CSR as independent variables studied, and company size and company risk as control variables, simultaneously influenced the stock price. The conclusion is that independent variables were appropriate and feasible in explaining the variation in stock price variables.

#### 4.4.2 Analysis of the coefficient of determination ( $R^2$ ).

The coefficient of determination ( $R^2$ ) is a coefficient showing the amount of variation caused by the independent variable (Kadir, 2015, p. 182). The coefficient of determination measures the extent of the ability of the model to explain the variation of the dependent variable.

**Table 4.3** Results of the Coefficient of Determination of Multiple Linear Regression Model

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
<b>1</b>	0.768	0.589	0.582	0.62187

Based on the results of calculations using SPSS in Table 4.1 above, it appeared that the coefficient of determination was equal to 0.589, showing that the influence of the independent variables that can be explained by this equation model was equal to 58.9% while the rest 41.1% was influenced by other factors outside of research.

## 5. Conclusion and Implication

### 5.1 Conclusion

This research aims at examining the influence of net income and social responsibility on stock prices. The sample used in this research is manufacturing industry companies listed on the IDX for the period of 2014 to 2016. Companies selected as samples need to meet the predetermined criteria, namely issuing annual reports during the observation period and reporting social responsibility information in its annual report. Based on the research that had been done, the conclusions are: (a) Net income had a significant positive influence on stock prices in manufacturing companies in Indonesia for the period of 2014-2016; (b) CSR had a relatively significant negative influence on stock prices in manufacturing companies in Indonesia for the period of 2014-2016; (c) The control variable of company size (measured using total assets) had a significant positive influence on stock prices, while the control variable of company risk (measured using debt to total asset ratio [DAR]) had no significant positive influence on stock prices in manufacturing companies in Indonesia for the period of 2014-2016; (d) Net profit and CSR simultaneously had a significant positive influence on stock prices in manufacturing companies in Indonesia for the period of 2014-2016.

### 5.2 Implication

Significant positive influence of net income showed that information regarding net income was considered to give a positive signal to investors. Investors as parties who use financial statements utilize financial information (including net income) for investment decisions.

Based on the results of research that had been done, it can be seen that CSR had a marginally significant negative effect on stock prices. However, the implementation of CSR by companies was still recommended, because CSR guided the triple bottom line, which means that it paid attention to economic, environmental, and human (social) aspects. By inculcating the CSR principles, the company will become more responsible in the process of its operations and will participate in helping the government in preserving nature and the welfare of the surrounding community.

The simultaneous influence of net income and CSR on stock prices showed that net income and CSR in this research were factors that can influence stock prices together. This research found that net income and CSR were considered important information by investors in making capital market investment decisions, especially in the form of stock.

## References

- [1] Adiwiratama, Jundan. 2012. "Pengaruh Informasi Laba, Arus Kas dan Size Perusahaan Terhadap Return Saham." *Jurnal Ilmiah Akuntansi dan Humanika*, Volume 2 Nomor 1: 1-25. Diakses pada 5 Juni 2017. <https://ejournal.undiksha.ac.id/index.php/JJA/article/view/554>
- [2] Ikatan Akuntan Indonesia, 2007. *Pernyataan Standar Akuntansi Keuangan*. Jakarta : Dewan Standar Akuntansi Keuangan-IAI.
- [3] Taman, Abdullah. 2009. "Asosiasi Antara Laba dan Arus Kas Terhadap Harga Saham: Bukti Empiris pada Perusahaan Keuangan di Bursa Efek Indonesia." *Jurnal Pendidikan Akuntansi Indonesia*, Vol. VIII No. 1: 1-9. Diakses pada 16 Juni 2017. <https://journal.uny.ac.id/index.php/jpakun/article/download/939/749>.
- [4] Haryatih. 2016. "Analisa Pengaruh Laba Bersih dan Arus Kas Terhadap Return Saham pada Perusahaan Food and Beverages: Studi Empiris di Bursa Efek Indonesia." *JRKA Volume 2 Issue 2*: 1-12. Diakses pada 16 Juni 2017. <https://journal.uniku.ac.id/index.php/jrka/search/authors/view?firstName=Haryatih&middleName=Haryatih&lastName=Haryatih&affiliation=&country=ID>.
- [5] Ross, Stephen A., Randolph W. Westerfield, and Bradford D. Jordan. 2001. *Essentials of Corporate Finance*. United States of America: McGraw-Hill.
- [6] Anthony, Robert N., and Vijay Govindarajan. 2005. *Management Control System, Twelfth Edition*. Hanover: McGraw Hill.

- [7] Eryadini, Titis Sari. 2012. "CSR Dalam Bingkai Neoliberalisme: Studi Kasus JOB-PPEJ di Desa Campurejo Kabupaten Bojonegoro." *Jurnal Politik Muda*, Vol.2 No.1: 58-70. Diakses pada 5 Juni 2017. <http://journal.unair.ac.id/download-fullpapers-57-70%20titis.pdf>.
- [8] Safira, Zhara, and Akhmad Riduwan. 2015. "Pengaruh Corporate Social Responsibility dan Kinerja Keuangan pada Harga Saham." *Jurnal Ilmu & Riset Akuntansi*, Vol.4 No.6: 1-15. Diakses pada 1 Juni 2017. <https://ejournal.stiesia.ac.id/jira/article/download/921/873>.
- [9] Hermansyah, Iwan, and Eva Ariesanti. 2008. "Pengaruh Laba Bersih Terhadap Harga Saham." *Jurnal Akuntansi FE Unsil*, Vol.3 No.1: 390-396. Diakses pada 24 Juli 2017. <https://imanph.files.wordpress.com/2009/02/pengaruh-laba-bersih-terhadap-harga-saham.pdf>.
- [10] Hartono, Jogiyanto. 2015. *Metodologi Penelitian Bisnis, Salah Kaprah dan Pengalaman-pengalaman*. Vol. Edisi 6. Yogyakarta: BPFPE.
- [11] Hiltari, Ni Putu Saka, and Sri Rahayu. "Pengaruh Laba Bersih dan Komponen Arus Kas Terhadap Harga Saham Perusahaan yang Terdaftar di Indeks LQ 45 Bursa Efek Indonesia." *e-Proceeding of Management*, Vol.2 No.3, 2015: 34-42. Diakses pada 24 Juli 2017. [https://openlibrary.telkomuniversity.ac.id/pustaka/files/104585/jurnal\\_eproc/pengaruh-laba-bersih-dan-komponen-arus-kas-terhadap-harga-saham-perusahaan-yang-terdaftar-di-indeks-lq-45-bursa-efek-indonesia.pdf](https://openlibrary.telkomuniversity.ac.id/pustaka/files/104585/jurnal_eproc/pengaruh-laba-bersih-dan-komponen-arus-kas-terhadap-harga-saham-perusahaan-yang-terdaftar-di-indeks-lq-45-bursa-efek-indonesia.pdf).
- [12] Mutia, Evi. 2012. "Pengaruh Informasi Laba dan Arus Kas Terhadap Harga Saham." *Jurnal Akuntansi Vol.1 No.1*: 12-22. Diakses pada 16 Juni 2017. <https://ejournal.unri.ac.id/index.php/JA/article/view/1453>.
- [13] Paradiba, Lailan, and Karlonta Nainggolan. 2015. "Pengaruh Laba Bersih Operasi terhadap Harga Saham pada Perusahaan Food and Beverage yang Terdaftar di BEI." *Jurnal Riset Akuntansi dan Bisnis*, Volume 15 No.1: 113-125. Diakses pada 24 Juli 2017. [http://jurnal.umsu.ac.id/index.php/akuntan/article/viewFile/431/pdf\\_63](http://jurnal.umsu.ac.id/index.php/akuntan/article/viewFile/431/pdf_63).
- [14] Boatright, John R. 2001. "The Future of Corporate Social Responsibility." *Business & Professional Ethics Journal*, Vol.20, No.3/4, *Selected Papers from the Markkula Center Conference on At Out Best: MoralLives in a Moral Community*, 39-48. Diakses pada 26 Juli 2017. <http://www.jstor.org/stable/27801259>.
- [15] Resta, Hesti Via. 2012. *Pengaruh Komponen Arus Kas dan Laba Terhadap Return Saham pada Perusahaan Manufaktur yang Terdaftar di Bursa Efek Indonesia Periode 2008-2010*. Undergraduate Thesis, Yogyakarta: Universitas Negeri Yogyakarta.
- [16] Annas, Muflikhun. 2010. "Pengaruh Kinerja Keuangan Perusahaan Terhadap Return Saham Dengan Perilaku Herding Sebagai Variabel Mediasi." *Jurnal Akuntansi dan Manajemen Vol.21 No.3*: 265-284. Diakses pada 4 Agustus 2017. <http://www.stieykpn.ac.id/journal/index.php/jam/issue/view/32>.
- [17] Tandelilin, Eduardus. 2001. *Analisis Investasi dan Manajemen Portofolio. Edisi Pertama*. Yogyakarta: BPFPE-Yogyakarta.
- [18] Ghozali, Imam. 2011. *Aplikasi Analisis Multivariate dengan Program IBM SPSS edisi 5*. Semarang: Badan Penerbit Universitas Diponegoro.
- [19] Kadir. 2015. *Statistika Terapan*. Jakarta: PT Raja Grafindo Persada.