
**DETERMINANTS CHANGES COMPOSITE STOCK PRICE INDEX (JCI)
IN INDONESIA STOCK EXCHANGE (BEI)**

Dessy Adelin
ABFI Perbanas Jakarta. Indonesia

Abstract

This study aimed to examine the effect of changes in the exchange rate for rupiah to US Dollar, SBI interest rate changes, changes from the Dow Jones index to changes Composite Stock Price Index (JCI) period January 2005 to December 2014. The analysis technique used is multiple linear regression, hypothesis testing are used as statistical test t , F statistical test with a significant level of 5%. Classic assumption tests used in this study included tests of normality, multi collinearity, heteroscedasticity and autokolerasi. This research has been done to produce evidence that the change in the exchange rate for Rupiah to US Dollar and SBI interest rate changes significantly and negatively related to changes in Composite Stock Price Index (JCI), while the Dow Jones index changes positively and significantly to changes in Composite Stock Price Index (JCI). together a significant difference between changes in the exchange rate of rupiah to Dollar USA, changes from interest rates SBI and the Dow Jones Index to changes in Composite Stock Price Index (JCI).

Keywords: change Composite Stock Price Index (JCI), changes from the exchange rate for rupiah to US Dollar, SBI interest rate changes and changes in the Dow Jones Index

INTRODUCTION

A very drastic decline in the value of the Composite Stock Price Index in 2008 caused by the world financial crisis or more familiar with the monetary crisis that occurred in the United States has a global impact. This can be seen from the panic of world investors in their efforts to save their money in stock market. They are busy selling stocks so that the stock market plunges. Since the beginning of 2008, China's stock exchange has plunged 57%, India 52%, Indonesia 41% (before its activity was suspended), and Europe zone 37%.

While the bond market slumped, emerging-market currencies weakened and commodity prices tumbled. Indonesia is also receiving the impact on the crisis one of them on the capital market in Indonesia. Where in 2008 the JCI also decreased by 51.6% from the previous year. Research Suyanto (2007) states that several factors that influence stock prices are the exchange rate of money, the interest rate of SBI (Bank Indonesia Certificates), and inflation.

SBI interest rates can also affect the condition of JCI in IDX with high SBI interest rate can encourage investors to transfer their funds of stock to this instrument in the form of savings or deposits. With such conditions will trigger a decline in the movement towards JCI values in the stock market. And vice versa.

One of the factors affecting the JCI movement is the exchange rate, where the exchange rate that is often used in international trade is the United States dollar. For companies that are actively engaged in exporting and importing the stability of US Dollar exchange rate against Rupiah becomes important. Because when the value of rupiah depreciates with US Dollar, this will result in imported goods to be expensive. If most of the raw materials the company uses imported

materials, this will automatically lead to increased production costs. The increase in production costs will certainly reduce the level of corporate profits. Decrease in corporate profits will certainly affect the interest in investors to buy shares of the company concerned.

Other factors that also affect the JCI is global stock index such as Index in America (Dow Jones). Companies listed in the Dow Jones Index are generally a multinational company. Their operations are spreading all over the world. Companies such as Coca-Cola, ExxonMobil, Citigroup, and Procter & Gamble are among the examples of companies listed on Dow Jones and operating in Indonesia (www.kompas.com). These companies generally operate directly in Indonesia.

Based on the problems described above, the researcher wants to test whether there is influence of RD exchange rate change per Dollar USA, change from SBI interest rate and Dow Jones index change to JCI either partially or jointly.

FORMULATION OF THE PROBLEM

The main issues that will be discussed in this research, namely:

1. Whether the change of Rupiah exchange rate per US Dollar influences the change of JCI in Indonesia Stock Exchange?
2. Be the change of interest rate of Bank Indonesia Certificates (SBI) affecting the change of JCI in Indonesia Stock Exchange?
3. Does the Dow Jones Index change affect the change of JCI in Indonesia Stock Exchange?
4. Whether changes in Rupiah exchange rate per US Dollar, changes from SBI interest rates and changes from the Dow Jones Index have a simultaneous effect on JCI changes in the Indonesia Stock Exchange?

RESEARCH PURPOSES

The purpose of the research will be conducted to analyze and prove the following:

1. Influence of Rupiah exchange rate changes per US Dollar against JCI changes in Indonesia Stock Exchange.
2. The effect of changes in rate of Bank Indonesia interest rate (SBI) on changes in JCI in Indonesia Stock Exchange.
3. The effect of Dow Jones Index changes from JCI changes in Indonesia Stock Exchange.
4. Effect of changes in Rupiah exchange rate per US Dollar, SBI interest rate and Dow Jones index jointly against changes in JCI in Indonesia Stock Exchange?

THEORETICAL

Composite Stock Price Index (CSPI)

Composite Stock Price Index (IHSG) is a value used to measure the performance of stocks listed on a stock exchange. IHSG is owned by the Indonesia Stock Exchange. The Indonesia Stock

Exchange is not responsible for products issued by users that use the JCI as a benchmark (benchmark).

Exchange rate

The value of the exchange rate is a foreign currency exchange rate against other currencies. there are four types namely (Dornbusch and Fischer, 1992):

- a. Selling Rate, is the rate determined by a Bank of the sale of a particular foreign currency at a given moment
- b. Middle Rate, is the middle exchange rate between the selling rate and the foreign exchange buying rate of the national currency.
- c. the Buying Rate, is the rate determined by a bank of the purchase of a particular foreign currency at a given moment.
- d. Flat Rate (Flat Rate), is the prevailing rate of sale and purchase of bank notes and traveler cheque

Bank Indonesia Certificates (SBI)

Bank Indonesia Certificates are securities as short-term debt instruments denominated in rupiah currency issued by Bank Indonesia under a discount system. Party that may own SBIs are commercial banks and the public. Banks may purchase SBIs in the primary market while people are only allowed to buy in the secondary market.

SBI issuance in the primary market is conducted by auction mechanism on every Wednesday or next business day (in case the day is a holiday). SBI is issued with tenor of 1 month up to 12 months with the smallest unit of Rp1 million. Currently, the 1-month SBI issuance is conducted on a weekly basis while the 3-month SBI is done quarterlies. SBI auction participants consist of commercial banks and money market brokers Rupiah and Forex (www.bi.go.id). An SBI issuance auction method is conducted by using 2 (two) ways of Variable Rate Tender and Fixed Rate Tender

Dow Jones Index

The Dow Jones index is the oldest US stock market index in addition to the Dow Jones transport index. The Dow Jones Index was first issued from May 26, 1896 by editors of Wall Street Journal and Dow Jones & company.

The Dow Jones index is one of the three major indices in the United States. This index can illustrate how the performance of the American economy. Companies listed in the Dow Jones Index are large companies that have operated globally. .

Hypothesis

Research hypothesis as follows:

H1 : There is an effect of changes in Rupiah exchange rate per US dollar against changes in JCI

H2 : There is an effect of change of interest rate of Bank Indonesia Certificate (SBI) to the change of IHSG.

H3 : There is an effect of Dow Jones Index changes from JCI changes.

H4 : The effects of changes in Rupiah exchange rates per Dollar USA, changes from SBI interest rates, and changes from the Dow Jones Index jointly to changes in JCI.

RESEARCH METHODOLOGY

Population used in this research is all activity of change of Composite Stock Price Index (IHSG), all activity of Rupiah exchange rate change per Dollar USA, all activities of interest rate change from SBI and all activities of change of Dow Jones index. Sampling technique used in this research is purposive sampling method that is sample drawn by consideration. The sample used in this study is a change in the Composite Stock Price Index, changes in Rupiah exchange rate per Dollar USA, changes from SBI interest rates and changes from the Dow Jones Index during January 2005 to December 2014 with a total sample of 120 samples.

Dependent variable in this study is the change of Composite Stock Price Index (CSPI). whereas independent variables are:

Changes from Rupiah exchange rate per US Dollar, changes in SBI interest rates, and changes from the Dow Jones Index

The data used in this research is secondary data. The data collection methods used by literature study method and data are obtained from various sources, namely the exchange rate of Rupiah exchange rate per US Dollar and the change from SBI interest rate obtained from the official website of Bank Indonesia with its website address [www.bi .go.id](http://www.bi.go.id), while the Dow Jones Index changes, and changes from Composite Stock Price Index (CSPI), on the official website finance.yahoo.com.

Data processing method using linear model regression model as follows:

$$Y = \alpha + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + e_i$$

Information:

Y	= IHSG
α	= Constants
$\beta_1 - \beta_3$	= Regression Coefficient X 1 – X3
X1	= Rupiah exchange rate per Dollar
X2	= Interest Rate of SBI
X3	= Dow Jones Index
e_i	= error

Classic assumption test

The normality tests aim to test whether in the regression models the intruder or residual variable has a normal distribution

The multi collinearity test intends to prove or test whether there is a linear relationship between independent variables with the other variables (Gujarati, 2006: 67).

The heteroscedasticity test aims to test whether in the regression model there is a variance inequality of the residual one observation to another observation (Ghozali, 2011: 139).

The autocorrelation test aims to test whether in the linear regression model there is a correlation between the confounding error in period t and the intruder error in the previous t-1 period. (Ghozali, 2011: 110).

Hypothesis testing

The coefficient of determination (R^2) essentially measures the extent of the model's ability to explain the variation on the dependent variable.

The statistical test t basically indicates how far the influence of one explanatory variable individually in explaining the variation of the dependent variable.

The F statistic test basically shows whether all independent or independent variables included in the model have a mutual influence on the dependent or dependent variable (Gozali 2011: 98).

RESULTS AND DISCUSSION

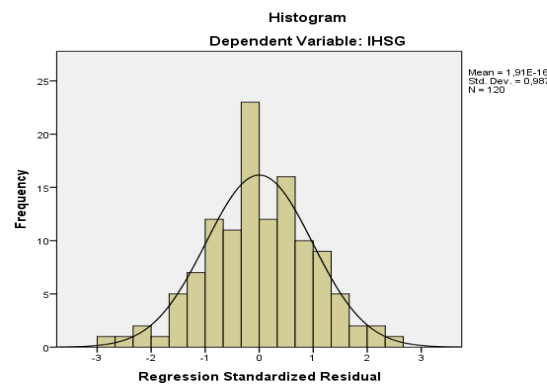
Classic assumption test

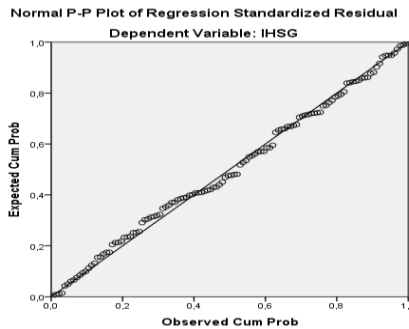
There are 4 classical assumption tests of this research that is:

Normality test

To test the normality of this data using the method of analysis of the graph and Test Komogorov-Smirnov

**Graph method
Picture 1.**





Data source: processed by yourself

Based on the histogram graphic image and the normal plot graph it can be concluded that the histogram graph provides a distribution pattern that does not deviate (skewness) from the right, left or normal. Whereas in the normal graph the plot looks the spreading point near the diagonal line. These two graphs show that the regression model is normally distributed.

Test Komogorov-Smirnov great values is 0.485 and significant 0.973 is above the significant 0.05. This acceptable H_0 means the residual data is normally distributed. Results kolmogorov-Smirnov consistent with the previous test results.

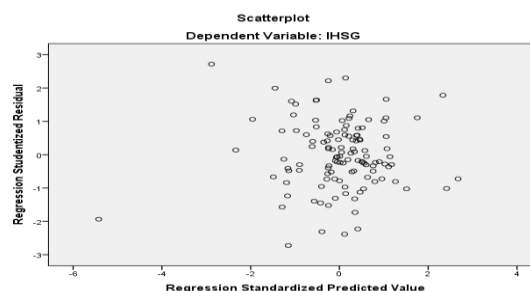
Multicollinearity Test

Based on the table Coefficientsahasil calculation of tolerance values also shows no independent variables that have tolerance less than 0.01 whereas the calculation of variance inflation factor (VIF) also shows the same thing there is no single independent variable that has VIF value more than 10. So, can conclude H_0 rejected and H_a accepted which means that there is no multi collinearity between independent variables in the regression model.

Test heteroscedasticity

The heteroscedasticity test aims to test whether in a regression the variance inequality of residuals from another observation occurs.

Picture 2.



Data source: processed by yourself

From the scatterplot chart it is seen that the dots spread randomly scattered both above and below the zeros on the Y axis. It is concluded that there is no heteroscedasticity in the regression model.

Autocorrelation Test

The autocorrelation test aims to test whether in the linear regression model there is a correlation between the confounding error in period t and the intruder error in period t-1 (previously).

Table. Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	,851 ^a	,724	,712	,0426853	1,966

a. Predictors: (Constant), Dow Jones index changes, changes in interest rate SBI, changes in rupiah exchange rate per Dollar USA

b. Dependent Variable: Changes IHSG

Data source: processed by yourself

Based on the Summary b model above the Durbin-Watson (DW) value of 1.966 this value is compared with the table using the significant value of 5% of the sample size 120 (n) and the number of independent variables 3 (k = 3), the Durbin Watson label obtained values of dl 1,6513 and du 1.7536.

Since the value of DW 1,966 is greater than the du bound of 1.7536 and less than 4 - 1,17536 (4 - du) it is concluded that there is no auto correlation.

Regression Equation

$$Y = \alpha + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + e_i$$

$$IHSG = 0,018 - 1,099 \text{ Changes in Rupiah exchange rate per US Dollar} - 0,315 \text{ Changes in interest rates SBI} + 0,450 \text{ Changes in Dow Jones Index} + e$$

From the results of multiple linear regressions equation above can be analyzed as follows:

1. The constant of 0.018 states that if the exchange rate of Rupiah exchange rate per Dollar USA, the change of SBI interest rate and Dow Jones Index change is zero, the change of Composite Stock Price Index (IHSG) is 0,018

2. Regression coefficient of Rupiah exchange rate changes per Dollar USA sebesar -1,099. Because a negative sign means that every 1 unit change in Rupiah exchange rate per Dollar USA will lower the Composite Stock Price Index (IHSG) by -1,099.
3. The regression coefficient of change of SBI interest rate is -0.315. Because the negative sign means that every 1 unit increase in SBI rate change will lower the Composite Stock Price Index (IHSG) by -0.315
4. The regression coefficient of change of Dow Jones Index 0.450 positive sign means that every 1 unit increase in Dow Jones Index change will increase JCI by 0,450.

Hypothesis testing

There are three hypotheses testing used in this research is as follows:

Coefficient of Determination (Adjusted R Square)

Based on Summary Model table above obtained the results of data processing coefficient of determination of 0.712 or equal to 71.2% This mean that independent variables are able to explain the dependent variable. While the remaining 0.288 or 28.8% in explained by the variable outside the independent variable.

The value of correlation coefficient (R) of 0.851 indicates that the strong correlation between independent variable to the dependent variable of 85.1%.

Test Statistic t (Partial Test)

Based on Coefficient table then can be drawn result from statistical test t (partial test) as follows:

1. Test of variable Changes in Rupiah exchange rate per US Dollar.
The results obtained in the table above variables The exchange rate of Rupiah exchanges per Dollar USA shows a value of 0.000 smaller than α ($0.000 > 0.05$). While the value of t arithmetic -7.658 smaller than t table 1.65765 ($-7.658 < 1.65765$). Then H_0 rejected and H_a accepted which means that the change in Rupiah exchange rate Per Dollar USA has a negative and significant effect on the Change of Composite Stock Price Index (IHSG) in Indonesia Stock Exchange (IDX).
2. Test of variable Change of SBI interest rate (BI rate)
The results obtained in the table above variable changes in interest rates show a value of 0.010 is smaller than α ($0.010 < 0.05$). While the value of t arithmetic of -2.618 smaller than t tables 1.65765 ($-2.618 < 1.65765$). Then H_0 rejected and H_a accepted meaning change of interest rate of SBI have a negative and significant effect to change of Composite Stock Price Index (IHSG) Indonesia Stock Exchange (BEI).
3. Test of IDJ Change variables (Dow Jones Index)
The results obtained in the table above the Dow Jones Index change variables show a value of 0.000 smaller than α ($0,000 > 0.05$). While the value of t counts 4,089 While the value of t arithmetic greater than t tables ($4,089 > 1.6839$). Then H_0 rejected and H_a accepted which

means that Dow Jones Index changes have a positive and significant effect to the change of Composite Stock Price Index (IHSG) in Indonesia Stock Exchange (BEI).
 Statistical Test F

Table. ANOVA^a

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	,273	3	,091	49,991	,000 ^b
Residual	,211	116	,002		
Total	,485	119			

a. Dependent Variable: change IHSG

b. Predictors: (Constant), Dow Jones index changes, changes in interest rate SBI, changes in rupiah exchange rate per Dollar USA.

Data source: processed by yourself

Based on Anova table F value of calculation is 49,991 with significant level 0,000. Because the significant value is less than 0.05 ($0.00 < 0.05$) and the F value is greater than f table ($49.991 > 2.68$) then H_0 is rejected and H_a is accepted and it can be concluded that the change of Rupiah exchange rate per Dollar USA, Changes in SBI interest rates and changes in the Dow Jones Index have a significant effect simultaneously on changes in the Composite Stock Price Index (IHSG) in Indonesia Stock Exchange (IDX).

RESULT

Hipotesis 1

Hypothesis 1 proposed to this research is "There is influence of Rupiah exchange rate change of US Dollar against change of IHSG". Based on the calculation results obtained that hypothesis 1 proved. These results indicate that the change in rupiah exchange rate in the United States dollar has a negative and significant effect on the JSX Composite Index. The results of this study indicate that when the rupiah exchange rate per Dollar USA depreciates then JCI will weaken. For Indonesian investors themselves, the weakening of the rupiah exchange rate per Dollar USA shows the fundamental situation of the Indonesian economy in dismal conditions. When the outlook for the economy is bleak, investors tend to let go of stocks to avoid risk. This stock selling action will surely drive the weakening of JCI.

This study is proved by the results of research conducted by Sudarsana (2013) and Witjaksono (2010) indicates that the rupiah exchange rate has a negative and significant effect on JCI and this research is different from the research of Valdkhani Abbas, Surachai Chancharat and Charles Havei (2006) the Baht exchange rate has a negative effect on the Thai stock price index.

Hypothesis 2

Hypothesis 2 proposed to this research is "There is influence of change of SBI interest rate to change of IHSG". From the above calculation results obtained that the hypothesis 2 proved. This shows the change in SBI interest rate influential negatively and significantly to the changes JCI, which means any increase in the SBI rate will lower the value of JCI and vice versa.

The impact on changes in SBI interest rates will affect the Composite Stock Price Index where, if the SBI interest rate rises beyond the rate of return to investment share then investors will withdraw their funds invested in shares and transferred investment in the purchase of SBI and vice versa if the SBI interest rate decreases then those investors will withdraw their funds initially invested in SBI and transferred into shares.

This research is proved by research conducted by Sudarsana (2013), and Witjaksono (2010) which shows that the interest rate of SBI has negative and significant influence to JCI. this study is different from the results of research conducted by Valdkhani Abbas, Surachai Chancharat and Charles Havei (2006) which shows the result that Thailand's interest rate has negative and insignificant effect on Thailand Stock Price Index

Hypotesis 3

Hypothesis 3 proposed to this research is "There is influence of Dow Jones Index Change to JCI in Indonesia Stock Exchange (BEI)". From the above calculation results obtained that the hypothesis 3 proved. The results of this study indicate that the Dow Jones Index changes that have a positive influence on JCI changes. This is motivated because the United States is the main export destination of Indonesia (www.bi.go.id). So that changes in the condition of the United States economy that will be reflected on the Dow Jones Index will give the influence of Indonesian companies in the Composite Stock Price Index (IHSG).

This research is proved by research conducted by Witjaksono (2010) Sutanto Budi, Werner R Muhadi and Enandg Ernawati. (2013) indicates that the Dow Jones Index has a positive and significant impact on JCI. This is in contrast to the results of research conducted by Hayo and Kutan (2004) which show results that the US capital market has a positive and insignificant effect on Russian financial markets.

Hypothesis 4

Hypothesis 4 proposed to this research is "There is influence of Rupiah exchange rate change per Dollar USA, change of SBI interest rate and change of Dow Jones index simultaneously to change of IHSG in Indonesia Stock Exchange (IDX)". From the above calculation, then obtained the result that hypothesis 4 proven. This can be seen from the result of Test F where the value of F arithmetic is greater than the value of F table and the significant value is smaller than 0.05 ($0.00 < 0.05$). Changes in Composite Stock Price Index (CSPI) are influenced by macroeconomic

factors (changes in Rupiah exchange rate per Dollar USA, changes in SBI interest rates and changes in Dow Jones Index).

CONCLUSION AND SUGGESTIONS

Conclusion

Based on the results of statistical tests that has been done found that changes in Rupiah exchange rate per Dollar USA have a negative and significant impact on changes in Composite Stock Price Index (IHSG) in Indonesia Stock Exchange (BEI), changes from SBI interest rates negatively and significantly impacted changes in Composite Stock Price Index (IHSG) on the Indonesia Stock Exchange (IDX), while the Dow Jones Index changes positively and significantly affect the change of Composite Stock Price Index (IHSG) in Indonesia Stock Exchange (IDX).

Based on the test together, it shows that the change of Rupiah exchange rate per Dollar USA, the change of SBI interest rate, the change of Dow Jones Index have a significant effect simultaneously to the change of Composite Stock Price Index (IHSG) in Indonesia Stock Exchange (IDX).

Suggestions

Suggestions that can be given through the results of this study either to investors or for further research development are as follows:

Investors should pay close attention to information on changes in Rupiah exchange rate per US Dollar, changes from SBI interest rates, and changes from the Dow Jones Index that can be used as a benchmark in predicting JCI changes before making the right decision to invest.

For further research is expected to add other macroeconomic variables that are expected to affect the change of IHSG and expected to increase the amount of time spans in research.

REFERENCES

- A.K Coleman and K.A Tettey (2008) **Money Market and Foreign Exchange Market**. Jakarta. Salemba Empat.
- Ang Robbert (1997) **Indonesia Capital Market** Jakarta: Frist edition. Mediasoft
- Arikunto, S (2010) **Research procedure: A Practice Approach**. Revised Edition. Jakarta. Rineka Cipta
- Bakri Abdul Karim, M. Shabri, and S.A Abdul Karim. (2009) **Financial Integration between Indonesia and Its Major Trading Partners. Malaysia**. Universitas Teknologi Petronas.
- Bodie Zvi, Alex Kane and Alan J. Marcus (2006) **Investments**. Books 1 and 2, Translation Zulaini Dalimunthe and Budi Wibowo. Jakarta. Publisher Salemba Empat.
- Boediono. 2001. **Monetary Economics**. Yogyakarta. BPFE.

- Chen Nai Fu (1991) *Financial Investment Opportunities and the Macroeconomy*: The Journal of Finance.vol.XLVI no.2, June
- Cooper Donald. R and C. William Emory. (1999). **Business Research Methodology**. Volume I, Jakarta. Publisher Erlangga.
- Ghozali Imam (2011) **Application of Multivariate Analysis with IBM SPSS Program**. Semarang. Diponogoro University Publishing Agency.
- Gujarati Damodar (2006) **Basic Econometrics**. Jakarta. Publisher Erlangga Kuncoro, Mudrajat and Suhardjono (2002) **Banking management**. Yogyakarta. BPFE.
- Markus, Bodie, Kane (2004) **Investment 5th edition**. Mc Graw Hil
- Meta, Rayun Sekar (2007) **Influence Inflation, Interest Rate and Rupiah / us Dollar Exchange Rate on Stock Return (case study on manufacturing and property stocks in Indonesian stock exchange) period 2000-2005**.
- Pasaribu, Pananda dkk (2009) *Influence of Macro Economic Variables on JCI*. *Journal of Economics*. Vol 14 No. 2.
- Pieper P & Vogel R. (1997) **The Stock Market Integration in Latin America**. Policy. HarperCollins Publishers Inc.
- Samul, Mohammad (2008) **Capital Market and Portofolio Management**. Jakarta. Publisher Erlangga.
- Samuelson (1990) **Macro Economics**. 3rd edition. Jakarta. Publisher Erlangga.
- Singarimbun M, Sofian E. (1989) **Survey Research Methods**. Jakarta. LP3ES Library Indonesia.
- Sudarsana Ni Made Anita Dewi, Ica Rika Candraningrat. (2013) **Influence of SBI Rate, Exchange Rate, Inflation and Dow Jones Index Against Composite Stock Price Index In BEI**. Bali. Faculty of Economics and Business Udayana University
- Sugiyono. (2011) **Qualitative and Quantitative Research Methods R & D**. Bandung. Alfabeta
- Sunariyah. (2010) **Introduction to Capital Market Knowledge**. Yogyakarta. UPP STIM YKPN
- Tandelilin Eduardus (2000) **Indonesian Capital Market**. Problem and Prospek. Wahana, volume 3 No.2.

Valdkhani Abbas, Surachai Chancharat and Charles Havie (2006) **The Interplay Between the Thai and Several Other International Stock Market**. Available: www.ideas.Repec.org.

Winarmo, W wahyu (2000) **Econometrics Introduction and Its Application**. Yogyakarta. YKPN College of Management Sciences.

Widarjono Agus (2009) **Econometrics: Introduction and Its Application (Equipped with EViews Application)** .Yogyakarta, Ekonisia.

Witjaksono Ardian Agung (2010) **Analyze the effect of SBI interest rate, World Gold Price, World Oil Price, Rupiah Rate, Nikkei Index and Dow Jones Index on JCI**. Semarang Thesis Graduate Program. Diponegoro University.

www.bi.go.id

www.bps.go.id

www.idx.co.id

www.yahoo.finance.com

www.wikipedia.org

www.kompas.com