The Influence of ASEAN Macroeconomic and Economic Activity on the Performance of Indonesian Composite Index

(Study on Singapore, Malaysia, Thailand, Philippines, and Brunei Darussalam, 2014–2016)

Suhadak Suhadak, Harisatul Agustin*
Faculty of Administrative Science
University of Brawijaya
Malang, Indonesia
*augustinharis@gmail.com

Abstract—**The establishment of ASEAN Economic Community in 2013 integrates economic activity among ASEAN member countries in all aspects of economy, such as free trade, goods movement, investment portfolio, foreign direct investment, and another ecconomic activity. Implementation of the ASEAN Economic Community affects the economies of ASEAN countries in general. One of the significant impacts of ASEAN Economic Community for Indonesia is the significant movement of the Composite Stock Price Index (IHSG) at the end of 2014. This study aims to determine and analyze the influence of macroeconomic and economic activity of ASEAN countries on the Performance of Indonesia Composite Index ahead of the enactment of ASEAN Economic Community. The type of research is explanatory research with descriptive quantitative approach. The sample of research is five countries with highest total economic activity to and from Indonesia. Data analysis technique used is Partial Least Square (PLS) with PLS algorithm and PLS bootstrapping test. The evaluation is outer model, inner model, and goodness of fit. For the findings, macroeconomic influence on economic activity in the countries of Singapore, Malaysia, Brunei Darussalam, and ASEAN. Macroeconomic Thailand and ASEAN influence the performance of Indonesia Composite Index, and the economic activity of all sample countries does not influence the performance of Indonesian Composite Index.**

Keywords—macroeconomic; economic activity; Performance of Indonesia Composite Index; t-statistic; ASEAN

I. Introduction

Capital market is an instrument created to increase economic growth and promote sustainable development [1]. This crucial purpose of capital market has caused many countries to pay great attention to the capital market and the securities industries in it. Almost every global economic crisis that occurs is always associated with the performance of the capital market in a country. According to Bank Indonesia, the global economic crisis in 2008 that occurred in the United States had significant impact on economic activities in several other countries, such as in the Americas, Europe and even Asia [2]. "The United States is the centre of international finance which is very influential on all countries in the world, although basically all countries depend on each other" [3]. Basri's statement provides an explanation that each country has interdependent relations with each other and the United States is a center of international economy that has a profound influence on the economy of other countries [3].

One of the most influential impacts of the global economic crisis in 2008 for Indonesia was the depreciation of IDR exchange rate relative to the US Dollar, Indonesia Composite Index (in Bahasa, *Indeks Harga Saham Gabungan /IHSG*) and of course other economic activities. "The most obvious impact of the global economic crisis on Indonesia is the closure of several days and the temporary suspension of stock trading on the Indonesia Stock Exchange (IDX)" [2]. This fact explains that Indonesia Composite Index Performance is vulnerable to being influenced by the global economy.

The phenomenon of globalization which increasingly paradox, demands every country to always improve its economic performance through various efforts. These efforts are manifested in the form of international cooperation, international trade, expansion of multinational companies, etc. The Association of South East Asia Nations (ASEAN) is a regional cooperation agreement between countries in the Southeast Asia region that is integrated in the creation of an open international trade market. ASEAN which consists of ten countries, namely: Brunei Darussalam, Philippines, Indonesia, Cambodia, Laos, Malaysia, Myanmar, Singapore, Thailand, and Vietnam have made various collaborations to create the ASEAN Economic Community (AEC) in 2015. "AEC was created to transform ASEAN member countries become a region that has freedom (borderless) in the movement of goods, investment, services, skilled labour, and capital flows" [4].

The selection of ASEAN countries become the focus of this research is based on previous explanation. Since 2013, ASEAN member countries had agreements in the integration of various free economic activities called AEC. This integration encourages ASEAN member countries to conduct various economic activities across ASEAN countries and is considered

to have a significant influence on the economies of other countries. The existence of this ASEAN Economic Community (AEC) pervade economic activities such as export, import, buying and selling securities, foreign investment, and macroeconomic which includes the exchange rate, inflation, and interest rates of one ASEAN member country are considered to affect the economy and the stock price index of others ASEAN countries.

The significant impact of AEC on Indonesia is the increasing IDX chart at the end of 2014 until early 2017. The movement of Indonesia Composite Index chart provides a sufficient idea that ASEAN economic integration in which there is economic activity integration between ASEAN's member countries can influence the Indonesia Composite Index performance even though there are other factors such as macroeconomic. Macroeconomic variables are also taken in this research to determine the macroeconomic influence through indicators such as ASEAN exchange rate, interest rate, and inflation indicators on the Indonesia Composite Index Performance after the establishment of the ASEAN Economic Community.

International trade which became one of the ASEAN Economic Community regional cooperation agreements was taken as an endogenous variable in this study. International trade that manifested by export and import, are measuring indicators of economic activity variable. Export and import are considered to have contributed to changes in the Stock Price Index. Research on the performance of the Indonesia Composite Index measured from export and import activities is a relatively new compared to the previous Indonesia Composite Index research and there has been no previous research.

The Indonesia Composite Index is the objective and the endogenous variable of this research. The Indonesia Composite Index is a stock price index that uses all listed companies as a component of index calculation. The Indonesia Composite Index is perceived to be able to describe the condition of the market trend as a whole corporate sector and public, thus investors from any country are able to invest in Indonesia securities, especially countries in ASEAN after the formation of the AEC. Based on that description, the title of this research is "The Influence of ASEAN Macroeconomic and Economic Activity on The Performance of Indonesia Composite Index (Study of Singapore, Malaysia, Thailand, Philippines and Brunei Darussalam in 2014-2016).

II. LITERATURE REVIEW

A. Macroeconomic

According to Sukirno, macroeconomic is a system that takes into account of overall economic activity in a country [5]. According to Bodie et al., macroeconomic is an environment in which all companies are operating [6]. Those definition explain that macroeconomic is a phenomenon which describes the economy that is seen as a whole in a country and it is created and able to influence the companies or countries concerned. Common indicators use to describe macroeconomic are Gross Domestic Product, employment, inflation, interest rate, budget deficit, and sentiment.

1) Inflation: "Inflation is a condition where the value of a currency in a country decreases and the price of goods increases systematically. Inflation line is always managed to be below the investment line, thus the convenience of investing will be created" [7]. "Investors want actual inflation or expected inflation. If inflation is higher than the acquisition of the investment it will be canceled, and vice versa."

2) Interest rate: Interest rate has an important role in making investment decisions. An interest rate which is lower than the rate of return on capital causes the planned investment to be unprofitable and it will be canceled. "Investment activities will only be implemented if the rate of return on capital is greater or equal to the interest rate" [5].

3) Exchange rate: "Foreign exchange rate is comparison of foreign currency value with domestic currency value" [5]. "The definition of exchange rate is the value of a country's currency compared to the value of another country's currency" [7]. Exchange rate of a country can carry its own risk for investors. "Exchange rate risk is uncertainty of the exchange rate" [8]. "Exchange rate risk is the risk that tomorrow's exchange rate will be different from today" [9]. Each investor looks at changes in the exchange rate of a country with different points of view. Some investors choose to wait for the value of money to rise as a form of investment speculation.

B. Economic Activity

"Broadly speaking, economic activity is divided into three elements, those are consumption, production and distribution." [10]. Economic activity can be categorized into two forms, those are national economic activity (domestic) and international economic activity. "International economic activities are basically the same as national economic activities, it is just that economic problems are studied in an international scope" [11]. According to Salvatore, the scope of international economic activity includes international trade, international trade policies, foreign exchange markets, balance of payments, and open macroeconomic [12]. Based on this theory, it can be understood that international trade is included in international economic activity. Export and import are part of international trade.

C. International Trade

1) Export: "Export is the outgo of goods from a country's customs area to be sent abroad by following the applicable provisions, especially regarding to customs regulations and carried out by an exporter or who has a special permit from the country" [13].

2) Import: "Import transaction is a trade by entering the goods and / or services of other countries into country's customs area by complying applicable laws and regulations" [13].

D. Capital Market

According to Tandelilin, "Capital market is a meeting between parties who have excess funds and who need funds by trading securities" [14]. Based on the two definitions of capital

markets, the capital market is a meeting place for different parties of interest in terms of securities and mutual benefits.

E. Stock

According to Darmadji and Fakhrudin, stocks are defined "As a sign of participation or ownership of a person or entity in a limited company or corporation [15]. The form of shares is a piece of paper that explains that the owner of the paper is the owner of the company that issued the securities. The ownership portion is determined by how much investment is invested in the company. "

F. Stock Price Index

Stock Price Index is a parameter that is used as a reference for investors, analysts, and even the public in assessing the performance of the securities industry or making investment decisions. Hadi, stated that "The stock price index is one of the macroeconomic parameters because the stock price index is the main indicator that describes stock movements" [8].

1) Stock price index function: According to Hadi, there are at least nine functions of stock price index, such as indicator of market trends, profit level indicator, benchmark for the performance of a portfolio, facilitating portfolio formation with a passive strategy, developing derivative products, showing qualifications and issuer's performance, shows investor confidence in and outside, illustrates the direction of capital flow in a country, as well as encouraging the enthusiasm of external funding sources with low cost of capital [8].

2) Types of stock price index: Share price based on the official website of the Indonesia Stock Exchange (www.idx.co.id), the Indonesia Stock Exchange has 16 types of stock price indexes that the movements are disseminated through print and electronic media. The stock price indices are: IHSG, MBX, KOMPAS 100, LQ45, DBX, INFOBANK15, JII, IDX30, ISSI, BISNIS-27, Investor33, SMInfra18, MNC36, SRI-KEHATI, PEFINDO25, and Sectoral Stock Price Index including Consumer, Agri, Mining, Manufacturing, MSC-Ind, Trade, Infrastructure, Finance, BASIC-Ind, and Property.

G. Indonesia Composite Index

Indonesia Composite Index is a stock price index involving all companies from all sectors listed on the Indonesia Stock Exchange as a component of index calculation. The Indonesia Stock Exchange has the authority to issue or not enter one or more listed companies from the IDX Composite Index calculation to describe a fair market condition. The Indonesia Composite Index is a collection of the stock price index of all issuers without a specific classification.

III. INTERVARIABLE INFLUENCE

A. The Influence of Macroeconomic on Economic Activity

According to Madura, "International trade flows are effected by several factors, those are: inflation, national income, government intervention, and exchange rate" [16]. In this study, indicators that measure economic activity variables are export and import (trade international).

"If a country's inflation increases relatively to its trading partner countries, then the country's current account will decline. If other factors do not change, then the consumers and companies in the country may buy more goods abroad (because of high local inflation), while the exports will decline [16].

"Each country's currency is valued in another country's currency through the exchange rate, so that the currency can be exchanged to facilitate international transactions. The value of most currencies can fluctuate over time due to market and government forces. If the value of a country's currency increases relative to other countries, the current account balance will decrease, if other things do not change. When a currency strengthens, the goods exported by the country will become more expensive for the importing country. As a result, the demand for goods will decrease" [16].

B. The Influence of Macroeconomic on the Performance of Indonesia Composite Index

"Investment activities will only be carried out if the rate of return on capital is greater or equal to the interest rate" [5]. The statement provides an understanding that interest rates have a significant influence on investors in making investment decisions (buying or selling securities). Investors will only make investments if the investment is profitable. If investors make purchases and / or sales of securities, this will be able to influence the movement of the stock exchange trend and will further affect the overall stock price index.

High inflation will trigger the Central Bank to conduct monetary policy by increasing the interest rate. A high level of interest rate will affect investors' investment decisions. In some cases, the high level of interest rate will encourage investors to invest their funds in deposits compared to investing their capital in the capital market.

The relatively weak value of a country's currency in fair conditions will attract investors to invest in securities. Weakening the value of the country's currency gives investors a distinct advantage. Investors will get more profits and returns. This will be able to influence the stock market trend which will affect the stock price index.

C. The Influence of Economic Activity on the Performance of Indonesia Composite Index

"The price index of manufacturing companies declined as the total export fall-off". According to Madura, international trade is able to influence the stock price of multinational companies [16]. Madura explained that an increase in exports from multinational companies would be able to increase the company's cash flow (US Dollar) [16]. In conditions of rising imports, multinational companies must issue more US dollars thus it will reduce the total cash inflows. The decrease in total cash flow will affect the valuation or stock price of multinational companies. Madura's statement can be understood that if multinational companies register their shares on the Stock Exchange, international trade will affect the stock price trends of multinational companies and will further affect the Stock Price Index [16].

D. Hypothesist

*H*1: Macroeconomic Singapore, Malaysia, Thailand, Philippines, Brunei Darussalam, and ASEAN have influence on the economic activity of each country.

*H*2: Macroeconomic Singapore, Malaysia, Thailand, Philippines, Brunei Darussalam, and ASEAN have influence on the Performance of Indonesia Composite Index

*H*3: Economic activity of Singapore, Malaysia, Thailand, Philippines, Brunei Darussalam, and ASEAN have influence on the Performance of Indonesia Composite Index.

IV. RESEARCH METHOD

A. Types of Research

The type of research used in this research is explanatory research with descriptive quantitative approach.

B. Research Location

Research locations were conducted in the countries of Singapore, Malaysia, Thailand, Philippines and Brunei Darussalam through the IEconomics website, International Trade Center, International Financial Statistics, Yahoo Finance and supported by several data from the Central Bank's respective sample countries.

C. Population and Sample

The population in this research are all countries in the Southeast Asia region which are the ten ASEAN member countries. These countries are Indonesia, Malaysia, Singapore, Thailand, Brunei Darussalam, Myanmar, Vietnam, Laos, the Philippines and Cambodia. The sampling technique used in this study is purposive sampling with the following criteria:

- Registered as an ASEAN member country, except Indonesia

- Is the country with the highest total economic activity (export and import) related to Indonesia in 2014— 2016

- Have financial market at least starting in 2014

- Having complete monthly data on inflation, interest rate, exchange rate, export and import from 2014 to 2016. Based on these criteria, and supported by data on total exports and imports of Indonesia sourced from the International Trade Center website, then the countries classified as samples in this study are Singapore, Malaysia, Thailand, Philippines and Brunei Darussalam

D. Variables and Measurements

TABLE I. VARIABLES AND MEASUREMENTS

Variable	Indicators	Data	Source
Macroeconomic (X)	Inflation Rate	%	International Financial Statistic
	Exchange Rate	USD/Domestic Currency	Ieconomics
	Interest Rate	%	Bank Central in each country
Economic Activity (Y1)	Export	USD	International Trade Centre
	Import	USD	International Trade Centre
IHSG Indonesia (Y2)	IHSG	Index	Yahoo Finance

Source: Processed Data, 2017

E. Data Collection Technique

Data collection in this research was carried out by documentation method. The documents taken are historical data regarding inflation, interest rate, exchange rate, export, import of countries Singapore, Malaysia, Thailand, Philippines, Brunei Darussalam and historical data on the Indonesia Composite Index. Data collected based on monthly averages for 2014-2016.

F. Data Analysis

Data analysis technique in this study is Partial Least Square (PLS) technique using smartPLS statistical software 3.2.7. Partial Least Square is chosen because PLS can work on path research with latent variables based on its forming indicators.

1) Evaluate the outer model: Outer model evaluation is an evaluation to assess the influence of indicator constructs on latent variables. Performed after PLS algorithm processed. The significance level in the outer model is ≥ 0.5. The indicator will continue at the PLS bootstrapping step if the outer loading value is ≥ 0.5.

2) Evaluate the inner model: Inner model evaluation is an evaluation to asses the influence of latent variable on latent variable. The foundation for the approval of the hypothesist is based on the value of t-table is ≥ 1.96.

V. RESULTS AND DISCUSSION

A. *Results of Singapore Data Operationalization*
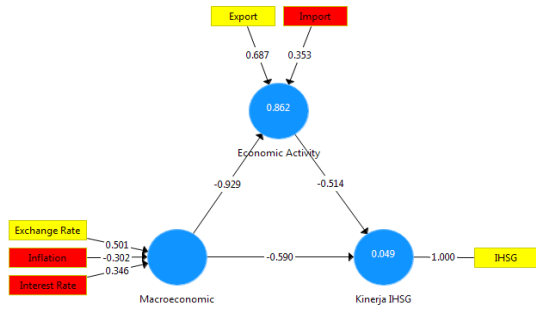
1) *Evaluation of the outer model*

Fig. 1.   Singapore outer model.
Source: PLS Operationalization Results, 2017

The results of the outer model in Singapore indicate that the indicators that continues to the PLS bootstrapping process (having the outer loading value ≥ 0.5) are the exchange rate, export, and IDX Composite Index.

2) *Evaluation of inner model*

TABLE II.   SINGAPORE INNER MODEL

	Original Sample	t-Statistic
Macroeconomic > Economic Activity	-0.853	22.653
Macroeconomic > Indonesia Composite Index Performance	-0.188	0.547
Economic Activity > Indonesia Composite Index Performance	-0.096	0.290

Source: Processed Data, 2017

The results of the inner model in Singapore shows that Singapore's macroeconomic has influence on Singapore's economic activity with a t-statistic value of 22.653. In the results of the operationalization, it can be seen that Singapore's macroeconomic has no influence on the Performance of Indonesia Composite Index, because the t-statistic value ≤1.96 that is 0.547. In this reasearch, Singapore's economic activity also has no influence on the Performance of Indonesia Composite Index because of the t-statistic value ≤1.96, which is 0.290.

B. *Results of Malaysia Data Operationalization*

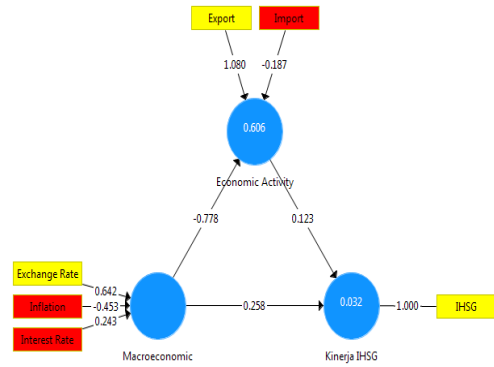#### 1) *Evaluation of the outer model*

Fig. 2.   Malaysia outer model.
Source: PLS Operationalization Results, 2017

The indicators that continues to the PLS bootstrapping process (has the value of outer loading ≥ 0.5) are the exchange rate, export, and Indonesia Composite Index.

2) *Evaluation of inner model*

TABLE III.   MALAYSIA INNER MODEL

	Original Sample	t-Statistic
Macroeconomic > Economic Activity	-0.759	9.812
Macroeconomic > Indonesia Composite Index Performance	-0.442	1.603
Economic Activity > Indonesia Composite Index Performance	-0.376	1.653

Source: Processed Data, 2017

The inner model results in the Malaysia shows that Malaysia's macroeconomic has influence on Malaysia's economic activity with a t-statistic of 9.812. Malaysia's Macroeconomic has no influence on the Performance of Indonesia Composite Index, with a t-statistic ≤1.96, which is 1.603. Malaysia's economic activity has no influence on the Performance of Indonesia Composite Index due to the t-statistic value ≤1.96, which is 1.653.

C. Results of Thailand Operationalization Data

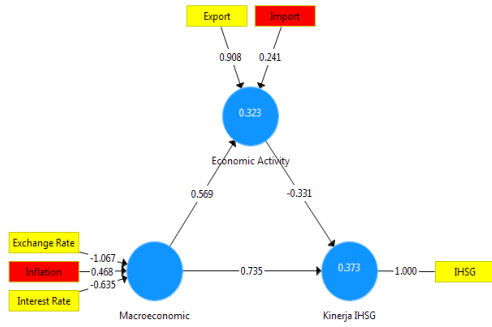### 1) Evaluation of the outer model

Fig. 3.   Thailand outer model.

Source: PLS Operationalization Results, 2017

The result of the Thailand outer model shows that the indicators that continues to the PLS bootstrapping process (has the value of outer loading ≥ 0.5) are the exchange rate, interest rate, export, and Indonesia Composite Index.

2) Evaluation of inner model table

TABLE IV.   THAILAND INNER MODEL

	Original Sample	t-Statistic
Macroeconomic > Economic Activity	-0.468	1.230
Macroeconomic > Indonesia Composite Index Performance	-0.700	3.962
Economic Activity > Indonesia Composite Index Performance	-0.266	1.258

Source: Processed Data, 2017

The Thailand inner model results is that Thailand's macroeconomic has no influence on Thailand's economic activity with a t-statistic ≤1.96, which is 1.230. Macroeconomic Thailand has influence on the Performance of Indonesia Composite Index, with t-statistic of 3.962. Thailand's economic activity has no influence on the Performance of Indonesia Composite Index because the t-statistic value ≤ 1.96 which is 1.258.

D. Results of Operationalization of Philippine Data

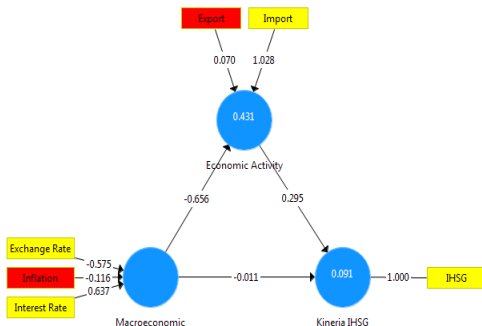### 1) Evaluation of the outer model

Fig. 4.   Philippine outer model.

Source: PLS Operationalization Results, 2017

The indicators that continues to the PLS bootstrapping process (has the value of outer loading ≥ 0.5) are the exchange rate, interest rate, export, and Indonesia Composite Index.

2) Evaluation of inner model

TABLE V.   PHILIPPINE INNER MODEL RESULTS

	Original Sample	t-Statistic
Macroeconomic > Economic Activity	-0.664	0.986
Macroeconomic > Indonesia Composite Index Performance	0.017	0.069
Economic Activity > Indonesia Composite Index Performance	0.304	1.952

Source: Processed Data, 2017

The inner model results in Philippine shows that the Philippine's macroeconomic has no influence on the Philippine's economic activity with t-statistic value of ≤1.96, which is 0.986. The Macroeconomic of the Philippines has no influence on the Indonesia Composite Index, because t-statistical value is ≤1.96 which is 0.069. The Philippines economic activity has no influence on the Performance of Indonesia Composite Index because t-statistical value is ≤1.96, which is 1.952.

E. Results of Operationalization of Brunei Darussalam Data
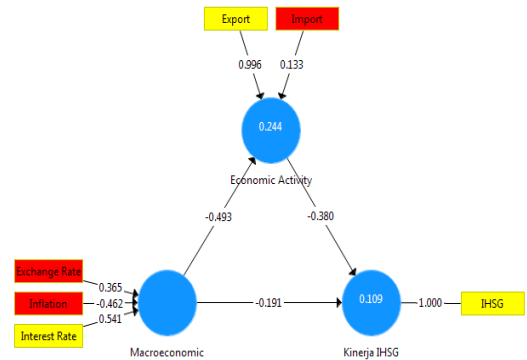
1) Evaluation of the outer model

Fig. 5.   Brunei outer model results.

Source: SmartPLS Data Results, 2017

The indicators that continues to the PLS bootstrapping process (has the value of outer loading ≥ 0.5) are the interest rate, export, and Indonesia Composite Index.

2) Evaluation of inner model

TABLE VI.   RESULTS OF BRUNEI BOOTSTRAPPING

	Original Sample	t-Statistic
Macroeconomic > Economic Activity	-0.362	2.377
Macroeconomic > Indonesia Composite Index Performance	-0.031	0.161
Economic Activity > Indonesia Composite Index Performance	-0.327	1.884

Source: Processed Data, 2017

The inner model results in Brunei Darussalam show that the macroeconomic of Brunei has influence on Brunei's economic activity with a t-statistic value of 2.377. Macroeconomic Brunei has no influence on the Performance of Indonesia Composite Index, with t-statistic of 0.161. The Philippines economic activity has no influence on the Performance of Indonesia Composite Index with a t-statistic of 1.884.

F. Results of Operationalization of ASEAN Data
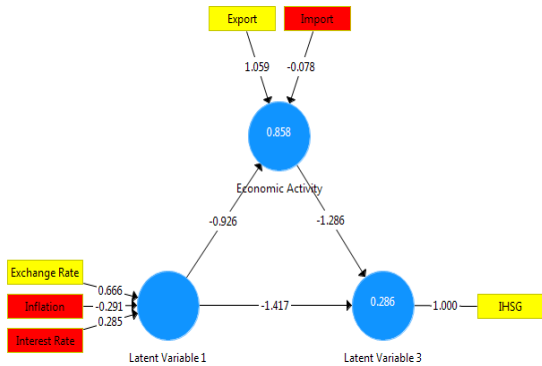
1) Evaluate the outer model

Fig. 6. ASEAN outer model results.

Source: SmartPLS Data Results, 2017

The result of the outer model in ASEAN shows that the indicators that continues to the PLS bootstrapping process (has the value of outer loading ≥ 0.5) are the exchange rate, export, and Indonesia Composite Index.

2) Evaluation of inner model

TABLE VII. RESULTS OF THE ASEAN INNER MODEL

	Original Sample	t-Statistic
Macroeconomic > Economic Activity	-0.817	11.168
Macroeconomic > Indonesia Composite Index Performance	-0.594	1.995
Economic Activity > Indonesia Composite Index Performance	-0.452	1.724

Source: Processed Data, 2017

The inner model results in ASEAN show that ASEAN macroeconomic has influence on ASEAN economic activity with t-statistic value of 11.168. ASEAN Macroeconomic has influence on the Performance of Indonesia Composite Index, with a t-statistic of 1.995. ASEAN's economic activity has no influence on the Performance of Indonesia Composite Index because of the t-statistic ≤ 1.96, which is 1.724.

G. Discussion

- Macroeconomic of Thailand and Philippines shows have no influence on the economic activity on each state. The justification about this result can be explained caused by the diversity on export and import commodity. As the report of Indonesia Ministry of Trade, the major export and import commodity on the

state of Thailand and Philippines is non-oil and gas. Indonesia Economic Outlook said that the trade commodity that have vulnerability on macroeconomic is oil and gas [2].

- The result shows that only macroeconomic of Thailand and ASEAN that have influence on The Performance of Indonesia Composite Index. The justification about this can be answered by one of investment theory that say "Investor sometimes just focused on the capital gain instead of macroeconomics factor"

The results shows that there is no influence of economic activity of ASEAN country on the performance of Indonesia Composite Index. Justification about this result can be explained that not all company that have involved with economic activity (export-import) are listing their stock, the limits of data, and the other factor that not examined in this research are also influence the result.

VI. CONCLUSION

- Singapore's Macroeconomic has influence on Singapore's economic activity, Malaysia's macroeconomic has influence on Malaysia's economic activity, Brunei Darussalam's Macroeconomic has influence on Brunei's economic activity, and ASEAN macroeconomic has influence on ASEAN economic activity. Thailand's macroeconomic has no influence on Thailand's economic activity, and the Philippines macroeconomic has no influence on Philippine economic activity.

- Thailand Macroeconomic has influence on the Performance of Indonesia Composite Index and ASEAN Macroeconomic has influence on the Performance of Indonesia Composite Index. While the Macroeconomic of Singapore, Malaysia, Philippines and Brunei Darussalam have no influence on the Performance of Indonesia Composite Index.

- Singapore, Malaysia, Thailand, the Philippines, Brunei Darussalam and ASEAN have no influence on the Performance of Indonesia Composite Index. In general, the hypothesis 3 is rejected in all sample countries and ASEAN.

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