The Effects of Indonesian Macroeconomic Indicators and Global Stock Price Index on the Composite Stock Prices Index in Indonesia

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Abstract- This study was to analyze the effect of Gross Domestic Product (GDP), the rupiah exchange rate against the US dollar, inflation, interest rates, Dow Jones Index, BSE Sensex Index, Nikkei-225 Index, and Shanghai Index on the composite stock prices index in Indonesia. The study used secondary data obtained from www.yahoo.finance.com, Central Bank of Indonesia, and the Indonesian Central Bureau of Statistics. Data was collected in the quarter period from January 2010 - December 2018 with 36 data numbers per each variable. Multiple linear regression analysis technique was used for the analytical method. The results showed GDP, exchange rates, the Shanghai index had a significant positive effect, the Nikkei-225 index had a significant negative effect to the JCI. Inflation, interest rates, and the BSE Sensex index had insignificant negative effect to the JCI. The variables that were worthy of consideration for investors in purchasing shares on the Indonesia Stock Exchange were GDP, the rupiah exchange rate against the US dollar, the Dow Jones index, the Nikkei-225 index, and the Shanghai index because it significantly affects the JCI. The suggestion for further research was to include other economic variables such as the money supply, unemployment rate, and stock indices of developing countries.

Index Terms- Indonesian Macro Economic Indicators, Global Stock Index, Indonesian composite of stock price index

I. Introduction

Investment is an activity to place funds both in financial and non-financial instruments to obtain an increase in investment value (Balagobei, 2017). Stock is one form of investment in the capital market that provides two benefits, namely capital gains and dividends (Khajar, 2015). The movement of shares in the capital market can be seen from the stock index. The stock index fluctuates in accordance with internal and external conditions of a country. External influences are caused more by global factors due to globalization especially in the field of trade and international economic cooperation. Fundamental analysis is needed to forecast stock performance before investors engage in investment activities (Baresa *et al.*, 2013). Stock valuation analysis must be considered several macroeconomic variables that affect a company's ability to generate profits (Tandelilin, 2010). There are three stages in fundamental analysis, namely the analysis of macroeconomic factors that affect the performance of the entire company, followed by industry analysis, and company analysis to find out whether the securities issued are profitable or detrimental (Tandelilin, 2010).

The research was conducted by Chia Liang *et al* (2013) showed a positive short-term and long-term relationship between exchange rates (US Dollars) and stock prices in five ASEAN countries. The significant influence of the macro economy on the stock index is largely determined by the fundamental conditions of the country and the relationship of one country to another. Comprehensive research related to the influence of macroeconomic variables on the index of composite stock prices in Malaysia, America and China have been carried out by Acikalin *et al* (2008); Geetha *et al* (2011); Chia Liang *et al* (2013); Duy (2015); Balagobei, (2017). The results of the study indicate that macroeconomic indicators such as inflation and interest rates negatively affect stock prices, while the exchange rate and GDP have a positive effect on stock prices. Fluctuations due to external conditions occur because of liberalization process in investment. Investment liberalization implies an increasingly connected Indonesian capital market with foreign capital markets, both regionally and globally (Tarigan *et al.*, 2015). The liberalization process occurs because of the existence of trade and economic cooperation relations between countries that influence each other in accordance with the proportion of economic dependence. The dynamic condition of the capital market is one of the main indicators of economic changes in the world as reflected in the index of share prices of each country. The movement of index value is one of the factors that can be used in analyzing the level of capital market integration between countries (Tarigan *et al.*, 2015).

Based on the background and previous research that there are differences of opinion among researcher is interested to further analyze the "The Effects of Indonesian Macroeconomic Indicators and Global Stock Price Index on the Composite Stock Prices Index in Indonesia".

II. Literature Riview and Hypothesis

1.1 Investation

Investment is one component of aggregate expenditure, so an increase in investment will increase aggregate demand, national income and employment opportunities. Investment can be divided into two, namely investment in financial assets and investment in real assets (Wiksuana, 2017). Stock is one of the financial market instruments carried out in the capital market (Mark, 2017). The goal is to get a return on investment in the form of dividends and capital gains. Investment theory states "high risk high return, low risk low return". Risk is a form of uncertainty about an investment. Uncertainty is intrinsically contained in every economic activity (Wild & Wild, 2012). The risks faced in every investment decision require investors to be careful and conduct careful analysis and consideration in making stock investments.

2.2 Fundamental Analysis

The prospect of the company depends on the overall economic situation. Stock valuation analysis must be considered several macroeconomic variables that affect a company's ability to generate profits. Top-down analysis can be done by investors in stock valuation to determine the company's prospects.

2.2.1 Economic and Capital Market Analysis

Economic analysis is carried out because of the tendency for a strong relationship between what happens in the macroeconomic environment and the performance of the capital market. The purpose of macroeconomic analysis is to make an allocation of funds investment decisions in the form of shares in several countries or in the country. The ability of investors to understand and forecast macroeconomic conditions is very useful in making investment decisions (Baresa *et al*., 2013). The macroeconomic variables that are worthy of analysis are Gross Domestic Product (GDP), Inflation, Rupiah exchange rate against the US dollar, and interest rates.

2.2.2 Industrial Analysis

Industrial analysis aims to compare the performance of various industries to find out the types of industries that provide the most promising prospects (Jones, 2013). Industrial analysis is important to minimize risks and identify industries that have profitable prospects. Assessing the industry can be done through two steps, namely first estimating expected earnings per share (EPS) from the industry and the second estimating the expected price earnings ratio (P / E) (Jones, 2013). The factor that influences the amount of profit obtained by an industry is the intensity of competition in the industry. The intensity of competition determines the ability of the industry to still obtain a rate of return above the average.

2.2.3 Company Analysis

Analysis of the company provides an overview of company value, internal characteristics, company quality, management performance, and future company prospects (Jones, 2013). The results of the analysis of company shares are then compared between intrinsic value and market value. Stocks are said to be undervalued and are worth buying if the market value is lower than the intrinsic value. Information on financial statements issued by companies is one of the easiest and cheapest types of information obtained in conducting company analysis. Information of financial statement is enough to describe the development of the condition of the company so that investors can calculate the amount of earnings growth that the company has achieved against the number of company shares (Baresa *et al*., 2013).

2.3 Integration of Economic and World Capital Market

The world economic and financial system is increasingly integrated with the expansion of international trade in commodities, services, and financial assets. The linkage between trade in commodities and services arises from the existence of export-import activities carried out by almost all countries, both regional and global. All countries try to remove trade barriers related to the flow of capital, goods and services. Policies to strengthen economic cooperation are carried out by eliminating discrimination, uniting policies related to various instruments, such as import duties, taxes, currency, laws, standardization so that global economic integration slowly occurs (Wild & Wild, 2012). Integration of international trade triggers financial integration with an increasing trend (Tadaki *et al*., 2016). The dynamics of capital markets are one of the main indicators in changing the economy in the world (Putyinceva *et al*., 2016). According to Wild & Wild (2012) the formation of economic integration has an impact on reducing the boundaries in the flow of products, labor, and capital on an international scale. In a cointegration relationship between capital markets there is a causal relationship where changes in one capital market will affect other capital markets or influence each other (Chia Liang *et al*., 2013). Integrated capital markets between countries have several advantages, including the increase of foreign investment which also increases the value of shares.

Based on the background, literature review, and previous research, the following hypotheses can be formulated:
H1: Gross Domestic Product (GDP) has a significant positive effect on the Indonesian Of Composite Stock Prices Index.
H2: The rupiah exchange rate against the US dollar has been positively to the Indonesian Of Composite Stock Price Index.
H3: Inflation has a significant negative effect on the Indonesian Of Composite Stock Price Index.
H4: Interest rates have a significant negative effect on the Indonesian Of Composite Stock Price Index.
H5: The Dow Jones Index has a significant positive effect on the Indonesian Of Composite Stock Price Index.
H6: The BSE Sensex Index has a significant positive effect on the Indonesian Of Composite Stock Price Index.
H7: The Nikkei_225 index has a significant positive effect on the Indonesian Of Composite Stock Price Index.
H8: The Shanghai Index has a significant positive effect on the Indonesian Of Composite Stock Price Index.

III. Research Method

This type of research is associative/explanatory research that aims to test the hypothesis of the influence of independent variables on the dependent variable. The independent variable in this study is Indonesian composite stock prices index. The independent variable consists of the Dow Jones index (American), the BSE Sensex index (India), the Nikkei_225 index

(Japan), and the Shanghai (Chinese) index. The source of research data is secondary data obtained from www.finance. yahoo.com for Dow Jones index data, BSE Sensex index, Nikkei_225 index, Shanghai index. Gross Domestic Product Data obtained from www.bps.go.id. Data on IDR / US exchange rates, inflation and interest rates are obtained from www.bi.go.id. The population in this study is the Indonesian joint stock price index (CSPI). The method of collecting data is through a census by investigating population elements one by one. Data on Indonesia's macroeconomic indicators and global stock indices are taken quarterly for the 10-year period of 2010-2018.

IV. Results and Discussion

4.1 Results

The test results using multiple linear regression analysis indicated that the test value simultaneously (Test F) was 39,560 with a significance of 0,000. These results indicate that the regression model built can be used to predict the rise and fall of the JCI. The independent variables in this study have an effect simultaneously on the JCI.

Table 1. Statistical Test Results

Model		Unstandardized Coefficients	Standardized Coefficients	T	Sig.	Information
		Beta	Beta			
1	(Constant)	1716.597		1.262	.218	
	PDB	.003	.995	2.933	.007	Significant positive
	Exchange rate	.306	.705	2.318	.028	Significant positive
	Inflation	-74.222	-.136	-1.635	.114	No Significant
	Interest rate	-45.473	-.053	-.468	.644	No Significant
	Dow_Jones	.154	.741	1.740	.009	Significant positive
	Nikkei_225	-.009	-.045	-.123	.043	Significant negative
	BSE_Sensex	-.020	-.136	-.605	.550	No Significant
	Shanghai	.143	.085	.876	.038	Significant positive
F Test					0.000	Simultaneous effect
Adjusted R^2					0.960	

Table 1. Shows that the variable GDP, Exchange Rate, Dow Jones Index, Nikkei_225 index, and Shanghai index have significance α <0.05 and B coefficient shows the direction of the independent variable relationship with the index of the Indonesian joint stock price. Based on multiple linear regression analysis while the equations that can be built are as follows:

Y = 1716,597 + 0,003 GDP + 0,306 Exchange Rate - 74,222 Inflation - 45,473 Interest rate + 0,154 Dow Jones - 0,020 BSE Sensex - 0,009 Nikkei225 + 0,143 Shanghai + e

The coefficient of determination (R2) of 0.960 or 96.0% shows the variable GDP, Exchange Rate, Dow Jones Index, Nikkei_225 index, and the Shanghai index explains that IHSG changes of 96% and the remaining 4% were explained by other variables not included in this study.

4.2 Discussion

4.2.1 The Effect of Gross Domestic Product (GDP) on JCI

GDP has a significant positive effect on the JCI. The higher the GDP value of Indonesia, the higher of composite stock prices index in Indonesia will also be higher. The relationship of the variable moves in the same direction. The results of this study were in line with the research conducted by Lee *et al* (2006); Acikalin *et al* (2008); Singh *et al* (2011); Jiangang *et al* (2013); Jareno & Loredana (2016). The increasing number of consumer goods causes the economy to grow and increase the scale of the company's sales turnover, because people were consumptive. Increased sales turnover has an effect on increasing profits. The profits obtained by the company also increased so that it affected the JCI movement.

4.2.2 The Effect of the rupiah / US dollar exchange rate on the JCI

The Exchange Rate of Rupiah / US Dollar has a significant positive effect on the JCI. The higher the Exchange Rate of Rupiah / US Dollar Indonesia, Indonesian composite stock price index will also be higher, and vice versa. The relationship of the variable moves in the same direction. The results of this study were supported by Acikalin *et al* (2008); Geetha *et al* (2011); Tangjitprom (2012); Chia Liang *et al* (2013); Dar *et al* (2014); Alam & Kashif (2014); Oktarini (2016); Jamaludin (2017); Balagobei, (2017). The strengthening of the rupiah exchange rate against foreign currencies will reduce the cost of importing raw materials and reduce the prevailing interest rates. The company will get a bigger profit by exporting industrial products because of the increase in the value of the rupiah. This condition will encourage an increase in profits earned by the company so that it will automatically increase stock prices.

4.2.3 The Effect of inflation on the JCI

Inflation has a negative but not significant effect on the JCI. Changes in inflation value did not significantly change the JCI value. The relationship of the variable moves unidirectio nally. The general increase in prices of goods will have an impact on the decline in public consumption due to a decline in real income. Ozbay (2009) research results; Singh *et al* (2011);

Greeta *et al* (2011); Chia Liang *et al* (2013); Alam & Kashif (2014); Ahmad & Ramzan (2016); Jamaludin *et al* (2017); indicates that inflation has a negative effect on the composite stock prices index. The decline in people's purchasing power was detrimental to producers which causes a decrease in the company's production level. If the increase in production costs was higher than the price increase that can be enjoyed by the company, the company's profitability will decrease.

4.2.4 The Effect of interest rates on the JCI

Interest rates have a negative but not significant effect on the JCI. Changes in interest rates did not significantly change the JCI value. The relationship of the variable moves unidirectionally. Amarasinghe research results (2015); Vuong (2015); Wahyudi *et al*., (2017); Yin *et al*., (2017); Khan & Imran (2018) show that interest rates negatively affect the stock price index. When interest rates rise, the operating costs will also increase, thereby reducing the profitability of the company to make a profit. This condition did not provide prospects for investors in placing their funds in the capital market, consequently the stock price will decline.

4.2.5 The Effect of the Dow Jones index on the JCI

The Dow Jones index has a significant positive effect on the JCI. The relationship of the variable moves in the same direction. America was the second export destination after China. Indonesia-America's total trade in the last 5 years (2014-2018) recorded growth of 3.84% (Ministry of Trade, 2018). The total trade value in 2018 was 28,602,881.7 thousand US Dollars. The condition of the American economy was reflected through the Dow Jones index. Research results of Khajar *et al* (2015); Murti, 2017; Deitiana & Stela, 2009; Kartika *et al* (2012) showed that the Dow Jones Index had a positive and significant effect on the JCI.

4.2.6 The Effect of Sensex BSE index on JCI

BSE Sensex Index has a negative but not significant effect on the JCI. Changes in the BSE Sensex Index did not significantly change the JCI value. The relationship of the variable moves unidirectionally. The results of this study were in line with the results of research conducted in Asia by Horta *et al*, 2014 and Khajar, 2015 that the BSE Sensex index has an effect on the JCI. The results study of Kumar & Puja (2012) and Nisha (2017) state that the conditions of Indian macroeconomic fundamentals influence the Sensex BSE index according to the characteristics of the variable itself. The total trade between Indonesia and India over the past 5 years (2014-2018) recorded a growth of 5.31% (Ministry of Trade, 2018). The total trade value for 2018 was 18,742,588 thousand US Dollars. Indonesia's level of dependence on India was still quite low considering that export growth was smaller than imports so that if there was a turmoil on the Indian economy then Indonesia will not be significantly affected.

4.2.7 The Effect of the Nikkei_225 index on the JCI

The Nikkei-225 index has a negative and significant influence on the JCI. The relationship of the variable moves undirectionally. Changes in the Nikkei_225 index deserve consideration for investors to predict the condition of the JCI. The total trade between Indonesia and Japan over the past 5 years (2014-2018) recorded growth of -0.82% (Ministry of Trade, 2018). The total trade value in 2018 was 37,456,603.5 thousand US Dollars. Indonesia's level of dependence on Japan was still relatively high considering that export growth was smaller than imports so that if there was turmoil in the Japanese economy, Indonesia will be affected in the opposite direction. The results of the research by Harbi *et al* (2016); Oktariani (2016); Deitiana & Stela, 2009; Kusumawati & Nadia, 2017 showed the effect of the Nikkei 225 stock index, which negatively affected the JCI.

4.2.8 The Effect of the Shanghai index on the JCI

The Shanghai index has a positive and significant influence on the JCI. The relationship of the variable moves in the same direction. The total trade between Indonesia and China over the past 5 years (2014-2018) recorded growth of 11.63% (Ministry of Trade, 2018). The total trade value for 2018 is 72,664,763.1 thousand US Dollars. Indonesia's level of dependence on China was very high and Indonesia' was the main trading partner of China. The turmoil that occurred in China greatly influenced the economic condition of Indonesia which was proxied by the JCI. The results of this study were in line with the results of research conducted by (Sidiq, 2010; Khajar, 2015; Harbi *et al*., 2016; Murti, 2017).

V. Conclusion

The research model that was built was able to explain 96% related to the rise and fall of the IHSG and the remainder was explained by other variables not included in this study. Independent variables that were worthy of being taken into consideration for investors to purchase shares on the Indonesia Stock Exchange were Gross Domestic Product (GDP), the exchange rate of Rupiah / US dollar, Dow Jones index, Nikkei-225 index, and the Shanghai index. These variables significantly affect the movement of the JCI.

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