

Macroeconomic Conditions, World Capital Market, and Commodity Price on The Jakarta Composite Index

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Abstract

The company's activities in the capital market such as the Indonesian Stock Exchange securities can be seen from the Stock Price Index combined. There are many factors that affect the JCI such as macro-economic conditions, and commodity prices. Factors that can affect the Jakarta Composite Index (JCI) needs to be studied to obtain maximum investment returns. The purpose of this study is to examine the impact of macroeconomic conditions such as inflation, interest rates, the rupiah exchange rate, and economic growth; global capital market index; commodity prices to the composite price index (JCI). This study uses multiple linear regression analysis with step-wise method by using software Eviews version 10. The results of the study show that the increase in the economic growth and world oil prices had an impact on JCI increase. Increase in inflation rates and the gold price have an effect on the decline in the JCI. The Dow Jones Index, The Nikkei 225 Index, and exchange rate had very strong positive correlation with economic growth (GDP). The interest rate has strong positive correlation with the inflation rate.

Keywords: macroeconomy, capital market, commodity, Indonesia stock exchange, Jakarta Composite Index,

INTRODUCTION

Capital markets that are bullish (increase) or bearish (decrease) can be seen from the rise or fall of indicators recorded through the movement of the Composite Stock Price Index. There are several factors that influence the movement of the stock price index, including changes in central bank interest rates, global economic conditions, world energy price levels, political stability of a country, and others (Blanchard, 2006). Domestic factors (macroeconomics) can be affected by inflation, interest rates, foreign exchange rates, economic growth and so on. Factors from foreign capital markets can be affected by the Dow Jones index and the Nikkei 225 index. World commodity factors can be affected by world gold prices and world oil prices. Investor behaviour also influences the Stock Price Index.

The inflation rate is one of the macroeconomic factors that can have an impact on the Composite Stock Price Index because it is related to people's purchasing power, where if there is an increase in inflation, the prices of goods will also increase (Manopo et al., 2021). This causes people's purchasing power to fall, which has an impact on investors' sluggish investment interest because inflation reduces the real income earned by investors, causing the Composite Stock Price Index (IHSG) to decline. The inflation had a significant effect on the movement of the IHSG (Unisma et al., 2019). In several of the studies mentioned above, there were differences in research results so that the researchers found a gap in the research variables, making the researchers want to conduct further research regarding the inflation variable on the fluctuation movement of the Composite Stock Price Index.

Another macroeconomic factor that can influence the movement of the Composite Stock Price Index is the exchange rate, which is the price of one unit of foreign currency in domestic currency or it can also be said to be the price of domestic currency against foreign currency. Strengthening the rupiah exchange rate and weakening foreign currencies is a positive signal for



investors. When the rupiah exchange rate strengthens against foreign currencies, many investors will invest in shares. The explanation above is one of the factors that influences the IHSG (Talamati & Pangemanan, 2015).

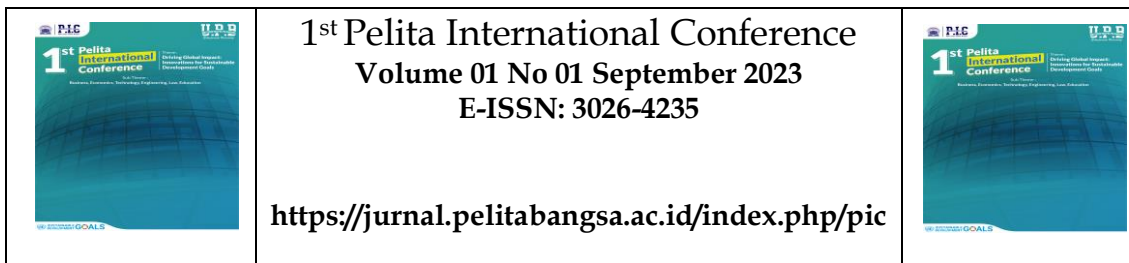
Economic growth can also have an impact on the Composite Stock Price Index. Economic growth shows that a country's economy is moving and is able to encourage investment and domestic investment. Growth shows an increase in the economic capacity of society in a country. An economic growth can be seen from an increase in Gross Domestic Product (GDP). Good economic growth will create prosperity for society. If a country's economy improves, this condition will encourage people's ability to invest. The capital market is a good investment destination. Supposedly, increasing Indonesian economic growth will encourage many investors, both domestic and foreign, to invest their funds in the Indonesian capital market. The relevant studies stating that economic growth has a significant positive effect on the JCI, research that states this positive effect is from (Rahmaliadan Augustina Kurniasih, 2021), (Koapaha, 2022), (Handayani & Oktavia, 2018), (Jamil, 2020) and (Santosa & Roselli, 2023).

The impact of foreign capital markets that can influence the JCI, namely the Dow Jones Index, which is one of the oldest stock indexes in the United States and is a representation of the performance of the most important companies in the United States (www.nyse.com). The Dow Jones Index consists of 30 stocks from the largest and most influential companies in the United States. The stocks included in the Dow Jones index list are usually stocks with quite large prices or valuations. The Dow Jones Index is moving up, meaning that the performance of the United States economy is generally in a good position. When there is a flow of capital entering the capital market, this has an influence on the JCI movement. In research, The Dow Jones Index had a positive influence on the IHSG (Pangondian et al., 2022), (Cabral & Pacheco-De-Almeida, 2019), and (Adelin, 2019). The Dow Jones index has no effect on the IHSG (Kusumawati & Asandimitra, 2017).

The Nikkei 225 index is an average capital market index of the 225 most quoted companies in Japan, as is the case with the Dow Jones index in the United States. If the Nikkei 225 index shows numbers that are moving up, it means that the Japanese economy is in good condition. Nikkei 225 is a stock market index for the Tokyo Stock Exchange (TSE). This index is a weighted average of prices (in yen), and its components are reviewed once a year. Just like the Dow Jones Index, when the Nikkei 225 Index moves up, it means that Japan's economic performance is generally in a good position. With good economic conditions, the Indonesian economy will move through export activities and capital inflows, both direct investment and through the capital market. Several researchers have conducted research on the influence of the Nikkei 225 index on the capital market in Indonesia. The Nikkei 225 index had a positive effect on the IHSG (Kusumawati & Asandimitra, 2017), and (Nellawati, Syantia Olivia, 2019). This is different from research conducted by Wibowo, et al (2016) which shows that partially the Nikkei 225 index has no effect on the IHSG.

The commodity variable, namely the world gold price, is one of the important commodity variables that can influence the IHSG. Investors will be interested in investing in this instrument because it has low risk but has sufficient returns. Therefore, the price of gold is one of the factors that can influence the JCI. The world gold prices have a positive effect on the JCI (Lubis et al., 2021). In contrast with the study, the world gold prices have negative effect on the JCI (Hidayat & Sudjono, 2022).

World oil prices also play an important role in the Indonesian economy. Fluctuations in world crude oil prices are also a factor that can influence a country's capital market. The increase in oil prices makes investors tend to invest their funds in various oil and mining commodity sectors. Crude oil prices have a positive effect on the JCI (Fuad & Yuliadi, 2021). In contrast with



these findings which shows that crude oil prices have a negative effect on the JCI (Antonio et al., 2021).

Based on the explanation that the researcher stated above, there is a gap phenomenon and gap research that is interesting to study. There are still many differences in the results of the aspects that have an impact on the stock price index in Indonesia, represented by the JCI, so this is a very interesting thing to test further. Therefore, researchers have an interest in carrying out research on macroeconomic conditions and commodity prices fluctuation on JCI.

RESEARCH METHOD

This research is quantitative research with an explanatory research approach where the influence of each independent variable is the inflation rate, interest rates, rupiah exchange rate, Dow Jones index, Nikkei 225 index, world gold prices, and world oil prices. This research allows researchers to determine the influence of the relationship between two variables, namely the independent variable consisting of inflation, interest rates, rupiah exchange rate, economic growth, Dow Jones index, Nikkei 225 index, world gold prices, and world oil prices on the dependent variable, namely Composite Stock Price Index on the Indonesian Stock Exchange for the 2012-2022 period. The results of this research will determine the influence of inflation, interest rates, the rupiah exchange rate, the Dow Jones index, the Nikkei 225 index, world gold prices and world oil prices on the Composite Stock Price Index (Study on the Indonesian Stock Exchange for the 2012-2022 Period). It is hoped that this research will be in accordance with the objectives and problem formulation in the research that has been described and explained previously. on the Composite Stock Price Index (Study on the Indonesian Stock Exchange for the 2012-2022 Period).

The concepts, definitions, and indicators of the variables used in the research are explained in the operationalization of the variables in accordance with table 1 below:

Table 1. Operationalization Variables

Variable	Definition	Indicator	Source
Inflation Rate	An increase in the prices of goods during a certain period	Consumer Price Index (CPI)	www.bi.go.id
Interest Rate	The interest rate determined by Bank Indonesia as standard reference interest rate.	BI-rate (BIR)	www.bi.go.id
Exchange Rate	The price of one US dollar against the Indonesian Rupiah	the average of the selling rate and buying rate (EXR)	www.bi.go.id
Economic Growth	Indonesia's national income during certain period	Gross Domestic Product (GDP)	www.bi.go.id
Jakarta Composite Index	Composite stock price index for a certain period	Jakarta Composite Index (JCI)	www.finance.yahoo.com
Dow Jones Index	Dow jones index in a certain period	Dow Jones Index (DJI)	www.finance.yahoo.com
Nikkei 225 Index	Nikkei 225 index in a certain period	Nikkei 225 Index (NKI)	www.finance.yahoo.com
Gold Price	Gold price in a certain period	World gold price (GPR)	www.goldfixing.com



Variable	Definition	Indicator	Source
Crude Oil Price	Crude oil price	World crude Oil Price (OPR)	www.investing.com

The population used in this research is all time series data on IHSG (Jakarta Composite Index/JCI), Inflation, BI Interest Rates, Exchange Rates, Economic Growth, Dow Jones Index, Nikkei 225 Index, World Gold Prices, and World Oil Prices for the 2012-2022 period. Data is collected in the same period and object. The observation period also includes economic conditions during Covid-19 which significantly influenced the structure of the Indonesian economy from quarterly data for the period 2012: Q1 to 2022: Q4.

The number of samples in this research includes the variables: Composite Stock Price Index on the Indonesian Stock Exchange, Inflation, Interest Rates, Exchange Rates, Economic Growth, Dow Jones Index, Nikkei 225 Index, World Gold Prices, and World Oil Prices. The sample taken was time series data for the period 2012 - 2022. There are 40 data per variable starting from the 2012 quarter (2012: Q1) to the 4th quarter of 2022 (2022: Q4).

RESULTS AND DISCUSSIONS

Statistic Descriptive

The research data covers the period 2012 to 2022, including the Covid-19 pandemic which occurred in 2020. The lowest inflation rate during the research period occurred in 2020 at 1.33%. During the Covid-19 period which occurred at the end of 2019 and the beginning of 2020, the JCI decreased from 6,300 before Covid-19 to 4,500 after Covid-19. However, this is different from the gold price, which continues to increase even during Covid-19.

Table 2. Statistic Descriptive

Variable	Mean	Maximum	Minimum	Standard Deviation
JCI	5,516.68	7,701.44	3,416.17	918.36
CPI	4.15	8.40	1.33	1.98
BIR	5.49	7.75	3.50	1.40
EXR	13,207	16,300	9,139	1,780
GDP	3,385.68	5,114.91	2,061.34	824.60
DJI	22,861.67	35,819.56	13,008.68	7,001.40
NKI	19,894.36	29,441.91	8,815.07	5,548.25
GPR	1,465.75	1,964.90	1,098.40	263.31
OPR	68.20	105.03	18.84	23.01

Correlation Matric

Variables that are strongly correlated occur between the Nikkei 225 Index (NKI) and the Dow Jones Index (DJI) at 0.949 (94.9%) which has a strong positive correlation. A strong positive correlation also occurs between the Dow Jones Index (DJI) and economic growth (GDP) of 0.948 (94.8%). Likewise, the strong correlation between the Nikkei 225 Index (NKI) and economic growth (GDP) is 0.895 (89.5%).

Table 3. Correlation Matric

Variable	CPI	BIR	EXR	GDP	DJI	NKI	GPR	OPR
CPI	1							
BIR	0.751	1						
EXR	-0.422	-0.411	1					
GDP	-0.515	-0.669	0.855	1				

DJI	-0.598	-0.752	0.768	0.948	1		
NKI	-0.528	-0.643	0.826	0.895	0.949	1	
GPR	-0.486	-0.686	0.165	0.494	0.580	0.402	1
OPR	0.327	0.025	-0.536	-0.172	-0.074	-0.185	0.196

Multiple Regression Analysis

Multiple Regression Analysis starts with all the independent variables used, namely inflation rate (CPI), BI-rate (BIR), exchange rate (EXR), economic growth (GDP), Dow Jones Index (DJI), Nikkei 255 Index (NKI), gold price (GPR), and oil price (OPR) to predict the Jakarta Composite Index (JCI). Next, the independent variable that has the smallest absolute t value (highest significance value) is removed using the step-wise method until we get a variable that has a significant influence ($\alpha < 0.1$) on the Jakarta Composite Index. In addition, the coefficient of determination and analysis of variance (F test) values were carried out to see the accuracy of the regression model.

The step-1 regression model uses 8 independent variables which can be seen in table 4 below. The Nikkei 225 Index (NKI) variable has the smallest absolute t value or the largest α significance value. Therefore, NKI is the first variable that must be eliminated.

Table 4 - STEP 1 (8 Independent Variables)

Variable	t -test		F test		Adj. R-squared
	t value	Sig	F value	sig	
CPI	-0.626	0.536	13.973	0.000	0.707
BIR	-0.458	0.649			
EXR	-0.366	0.716			
GDP	1.809	0.079			
DJI	0.623	0.537			
NKI	-0.291	0.773			
GPR	-2.467	0.019			
OPR	0.752	0.457			

The regression model in step-2 uses 7 independent variables which can be seen in table 5 below. The BI-rate (BIR) variable has the smallest absolute t value or the largest α significance value. Therefore, BIR is the second variable that must be eliminated.

Table 5 - STEP 2 (7 Independent Variables)

Variable	t -test		F test		Adj. R-squared
	t value	Sig	F value	sig	
CPI	-0.718	0.478	16.374	0.000	0.715
BIR	-0.446	0.659			
EXR	-0.497	0.622			
GDP	2.294	0.028			
DJI	0.705	0.485			
GPR	-2.570	0.014			
OPR	0.783	0.439			

The regression model in step-3 uses 6 independent variables which can be seen in table 6 below. The exchange rate (EXR) variable has an absolute t value of at least 0.643 or a significance value of α of at most 0.524. Therefore, EXR is the second variable that must be eliminated.

Table 6 - STEP 3 (6 Independent Variables)

Variable	t -test		F test		Adj. R-squared
	t value	Sig	F value	Sig	
CPI	-1.069	0.292	19.492	0.000	0.721
EXR	-0.643	0.524			
GDP	2.441	0.020			
DJI	0.833	0.410			
GPR	-2.561	0.015			
OPR	0.755	0.455			

The regression model in step-4 using 5 independent variables can be seen in table 7 below. The Dow Jones Index (DJI) variable has an absolute t value of at least 0.685 or a significance value of α of at most 0.498. Therefore, DJI is the second variable that must be eliminated.

Table 7 - STEP 4 (5 Independent Variables)

Variable	t -test		F test		Adj. R-squared
	t value	Sig	F value	Sig	
CPI	-1.373	0.178	23.673	0.000	0.725
GDP	2.545	0.015			
DJI	0.685	0.498			
GPR	-2.568	0.014			
OPR	1.964	0.057			

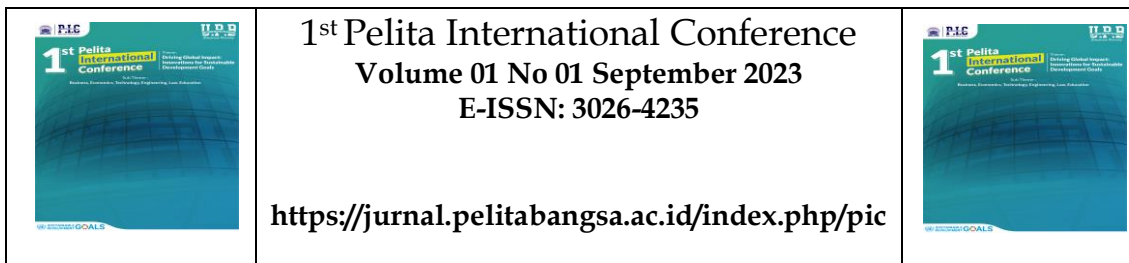
The regression model in step-5 using 4 independent variables can be seen in table 8 below. All independent variables have a significance value of α below 0.1. Therefore, these variables determine the Jakarta Composite Index (JCI).

Table 8 - STEP 5 (4 Independent Variables)

Variable	t -test		F test		Adj. R-squared
	t value	Sig	F value	Sig	
CPI	-1.887	0.067	29.881	0.000	0.729
GDP	9.105	0.000			
GPR	-2.514	0.016			
OPR	2.397	0.021			

The composite stock price index (IHSG) is greatly influenced by the level of inflation, economic growth, gold prices and world oil prices. Increasing economic growth has an impact on increasing the IHSG. The economic growth of a country can be seen from the growth of the IHSG which represents the country's economic activity from companies, both private and government, that go public on the Indonesian Stock Exchange.

An increase in the inflation rate can trigger a decline in the IHSG caused by an increase in prices, thereby increasing production costs and decreasing people's purchasing power. This



condition causes a decrease in investors' interest in investing in companies, thereby reducing the overall composite stock price index.

An increase in gold prices can also reduce investors from investing in the capital market. The increase in gold prices makes investors switch to gold investments which promise higher profits. This causes a decrease in investors to invest in the stock market.

An increase in world oil prices can influence an increase in the composite stock price index. Oil is a source of energy to support business operational activities. Companies need energy sources to run their business so oil is a vital resource. Increasing business activity requires increasing amounts of oil. In accordance with the law of supply and demand, increasing demand causes oil prices to rise. Therefore, investors are increasingly interested in investing in companies that cause share prices to increase.

Other variables such as the Dow Jones Index, Nikkei 225 Index, and exchange rate have an influence on the growth of the composite stock price index. This is proven by the existence of a very strong correlation ($r > 0.8$) between these three variables and economic growth as measured by gross domestic product (GDP). Likewise, interest rates which have a strong correlation of 0.75 ($0.6 < r < 0.8$) can influence the composite stock price index.

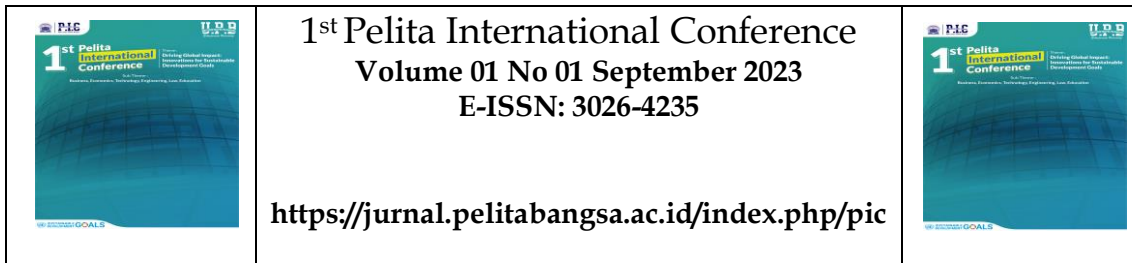
CONCLUSION

The research results show that the composite stock price index is influenced by the level of inflation, economic growth, gold prices and world oil prices. Increasing economic growth has an impact on increasing the composite stock price index. Increasing economic growth and oil prices have an impact on increasing the composite stock price index. Meanwhile, an increase in the inflation rate and gold prices can reduce the decline in the composite stock price index.

Other variables that influence the composite stock price index are the Dow Jones index, the Nike 225 index, and the exchange rate which is proven to have a very strong correlation with economic growth. Apart from that, interest rates can also influence the composite stock price index because of their correlation with the inflation rate.

References

- Adelin, D. (2019). Determinants Changes Composite Stock Price Index (Jci) in Indonesia Stock Exchange (Bei). *International Journal of Economics, Business and Management Research*, 3(05), 127-139.
- Antonio, M. S., Rusydiana, A. S., Soeparno, W. S. I., Rani, L. N., Pratomo, W. A., & Nasution, A. A. (2021). The impact of oil price and other macroeconomic variables on the islamic and conventional stock index in indonesia. *International Journal of Energy Economics and Policy*, 11(5), 418-424. <https://doi.org/10.32479/ijeeep.10911>
- Cabral, L., & Pacheco-De-Almeida, G. (2019). Alliance formation and firm value. *Management Science*, 65(2), 879-895. <https://doi.org/10.1287/mnsc.2017.2954>
- Fuad, F., & Yuliadi, I. (2021). Determinants of the Composite Stock Price Index (IHSG) on the Indonesia Stock Exchange. *Journal of Economics Research and Social Sciences*, 5(1), 27-41. <https://doi.org/10.18196/jerss.v5i1.11002>
- Handayani, W., & Oktavia, S. (2018). Effect of Rupiah Exchange Rate, GDP Growth, and Dow Jones Index on Composite Stock Price Index in Indonesia Stock Exchange. *Journal of Accounting and Strategic Finance*, 1(01), 23-32. <https://doi.org/10.33005/jasf.v1i01.24>
- Hidayat, R., & Sudjono, S. (2022). The Effect of World Gold Price, World Oil Price, USD/IDR Exchange Rate, and Inflation on the Joint Stock Price Index (JCI) On the Indonesia Stock Exchange (IDX). *Scholars Bulletin*, 8(8), 33-41. <https://doi.org/10.36348/sb.2022.v08i01.005>
- Jamil, P. C. (2020). Analysis of Correlation Between Indonesian Composite Index and Economic Growth in Indonesia. *European Journal of Business and Management*, March. <https://doi.org/10.7176/ejbm/12-8-07>
- Koapaha, H. P. (2022). The Impact of Macroeconomics Factors on the Jakarta Composite Index. *East Asian Journal of Multidisciplinary Research*, 1(10), 2161-2172. <https://doi.org/10.55927/eajmr.v1i10.1898>



- Kusumawati, D. A., & Asandimitra, N. (2017). Impact of Global Index, Gold Price and Macro Economic Variable for Indonesia Composite Index. *Research Journal of Finance and Accounting Wwww.Iiste.Org ISSN*, 8(2), 53–63. www.iiste.org
- Lubis, S. W., Alfari, M. F., & Adrianto, F. (2021). The Effect of Oil Prices, Gold and Exchanges on JCI During the Covid-19. *Enrichment: Journal of Management*, 12(1), 135–145.
- Manopo, M. W., Joroh, A., & Pantow, V. (2021). Analyzing Public Perception of Investment Products and Their Decision to Invest (Scope of Community in Manado City). *Open Journal of Social Sciences*, 09(11), 24–32. <https://doi.org/10.4236/jss.2021.911003>
- Nellawati, Syantia Olivia, Y. I. (2019). Analisis Pengaruh Faktor Internal Dan Faktor Eksternal Terhadap Pergerakan Indeks Harga Saham Gabungan (IHSG) Di Bursa Efek Indonesia Periode 2012 – 2016. 1, 7, 113–123.
- Pangondian, D., Thamrin, H., & Komarudin, M. (2022). JCI Analysis Through SBI Interest Rate, World Oil Price, World Gold Price, Rupiah Exchange Rate, Nikkei 225 Index, and Dow Jones Index in 2016–2020. *European Journal of Business and Management Research*, 7(5), 1–3. <https://doi.org/10.24018/ejbmr.2022.7.5.1147>
- Rahmaliadan Augustina Kurniasih, D. (2021). Determinant Factors of Jakarta Composite Index. *European Journal of Business and Management Research*, 6(2), 18–22. <https://doi.org/10.24018/ejbmr.2021.6.2.755>
- Santosa, P. W., & Roselli, S. (2023). The Effect of Macroeconomic Indicators, Crude Oil Prices, and the Dow Jones Index on the Jakarta Composite Index. *Jurnal Orientasi Bisnis Dan Entrepreneurship (JOBS)*, 4(1), 57–68. <https://doi.org/10.33476/jobs.v4i1.3624>
- Talamati, M. R., & Pangemanan, S. S. (2015). Pengaruh Earning Per Share (EPS) Dan Return On Equity (ROE) Terhadap Harga Saham Perbankan Yang Terdaftar Di Bursa Efek Indonesia (BEI) Tahun 2010–2014. *Jurnal EMBA*, 3(2), 2010–2014.
- Unisma, F. E., Zuhri, S., Hufron, M., & Fitria Mustapita, A. (2019). *e-Jurnal Riset Manajemen PRODI MANAJEMEN Pengaruh Inflasi, kurs, dan BI Rate terhadap Indeks Harga Saham Gabungan Bursa Efek Indonesia (BEI) Periode 2014-2018 Oleh*. 41–55. www.fe.unisma.ac.id