

# Relationship between Macroeconomic Variables and Stock Market Composite Index: Evidence from Indonesia

Naimah

Mercu Buana University, Jakarta, Indonesia

Andam Dewi

Mercu Buana University, Jakarta, Indonesia

**Abstract:-** This study aims to determine and analyze the effect of inflation, exchange rates, gross domestic product (GDP), and interest rates on the composite stock price index on the Indonesia Stock Exchange for the 2015-2019 period. This study uses a quantitative approach. The samples used are inflation data from the Central Statistics Agency, the USD/IDR exchange rate (JISDOR) from Bank Indonesia, GDP data based on current prices from the Central Statistics Agency, and interest rates published by Bank Indonesia with an observation period of 5 years quarterly. The data used in this research is secondary data. This research technique uses Multiple Linear Regression analysis on time series data using the eviews 10 application. The results indicate that inflation, exchange rates, and interest rates do not affect the Jakarta Composite Index (JCI), while GDP has a positive and significant effect on the JCI.

**Keywords:-** Inflation, Exchange Rate, GDP, Interest Rates.

## I. INTRODUCTION

The industrial world is now facing a new phase called the Industrial Revolution 4.0, marked by rapid changes in the current digital era (Athiyah, 2008). However, the issue of capital is still an obstacle for business actors to develop. They cannot meet the number of orders or consumer demand due to a lack of costs for production. Therefore, it is undeniable that the role of the capital market is increasingly needed over time. In this case, the capital market plays a significant role in offering solutions to capital problems that business actors often face. In its journey, the Indonesian capital market has experienced various fluctuations in response to economic factors, both macro and micro, as shown in Figure 1.

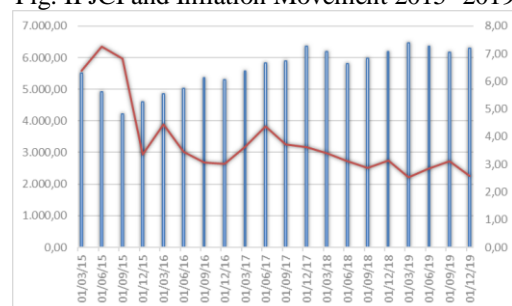
Fig. I IDX Composite Index Movement January 2013- December 2019



Microeconomic factors are economic factors related to the company's internal conditions, while macroeconomic factors are factors that exist outside the company (Afiyati & Topowijono, 2018). Microeconomic variables generally discuss aspects that can be analyzed through financial ratios, including liquidity ratios, activity, probability, solvency, and market value (David Wijaya, 2017). While macroeconomic variables generally discuss interest rates, economic cycles, inflation, government policies related to specific companies, exchange rates, tax regulations, budget deficits, interest rates on foreign loans, international economic conditions, understanding of the economy, money supply, private investment. Balance of trade and payments, and GDP (Samsul, 2006; Tandelilin, 2010). This paper discusses macroeconomic factors in inflation, exchange rates, GDP, and interest rates because the announcement of information about these variables always attracts investors' attention, both daily and periodically.

Mostly, high inflation is a negative signal for companies because the price of raw materials has increased. With the increase in production costs, the increase in product prices cannot be avoided. As a result, the level of sales within the company will decrease, followed by a decrease in company profits and, of course, will be responded negatively by investors in the capital market (Sukirno, 2015). Figure II shows that inflation tends to decrease with quite significant fluctuations. Therefore, theoretically, an increase in inflation should cause the JCI to decline. However, from Q1-2016 to Q2-2016, when inflation is likely to rise, stock index movements tend to follow the direction of the movement of inflation.

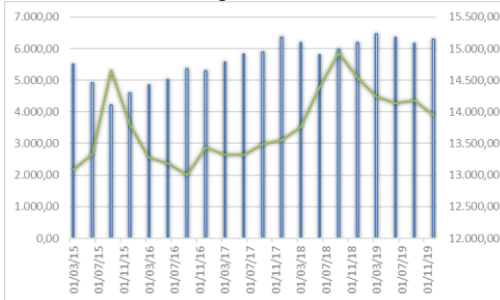
Fig. II JCI and Inflation Movement 2015- 2019



The exchange rate is also a variable that can affect stock prices. Sukirno (2015) said the low price of imported goods would increase the number of imports. Conversely, high prices for imported goods will reduce imports. Companies in sectors that often import their material will feel the impact of the

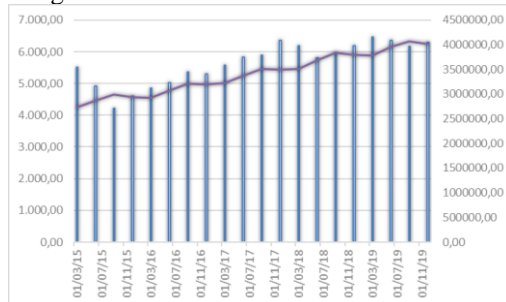
exchange rate fluctuation. The burden of production costs due to the weakening of the rupiah will cause the stock price to stumble. Therefore, theoretically, exchange rate depreciation should cause the JCI to decline. However, Figure III shows that the movement of JCI tends to follow the exchange rate movement between 2016 to 2017.

Fig. III JCI and Exchange Rate Movement 2015- 2019



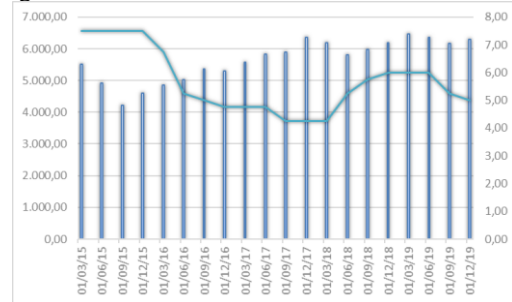
GDP includes factors that affect changes in stock prices. Theoretically, it can be explained that an increase in GDP can indicate an increase in consumer purchasing power towards production so that the company's profitability is estimated to increase. The increase in the company's profitability will be responded to positively by investors to increase the share price (Tandelilin, 2007). However, in Figure IV, it can be seen that GDP tends to rise steadily in the 2015-2019 period. Theoretically, a stable increase in GDP should be followed by the stable movement of the JCI. However, between 2015 and 2018, the JCI tends to fluctuate and is not in line with GDP.

Fig. IV JCI and GDP Movement 2015-2019



In general, interest rates exercise a pervasive influence over economic decisions and performance. They influence the willingness to save and influence the demand for and allocate borrowed funds (Lanyi and Saracoglu, 1983). High-interest rates will make investors switch to savings or time deposits, resulting in stocks not being demanded so that stocks will fall. However, Figure V has shown that the JCI tends to follow the movement of interest rates. Between Q1-2018 to Q2-2019, the JCI should have moved in the opposite direction against interest rates.

Fig. V JCI and Interest Rate Movement 2015-2019



Results of research conducted by Sabilla and Kurniasih (2020), Adesanmi and Jatmiko (2017), Rusbariand et al. (2012), and Siregar et al. (2014) find inflation has a negative effect on the stock price index. In contrast, Mulyani's (2012) research found that inflation positively affects the stock price index. But Rachmawati et al. (2015) and Kusuma and Badjra (2016) find that inflation does not affect the stock price index

Amadasu (2012), Lukisto and Anastasia (2014), Kusuma and Badjra (2016) state that the exchange rate positively affects stock prices. However, other studies have found different findings. For example, Harsono and Worokinasih (2018) and Suriani et al. (2015) found that the exchange rate had no effect on the stock market, and the findings of Kabeer (2017) and Husnul et al. (2017) showed that the exchange rate negatively impacts stock prices.

Asih and Akbar (2017) and Hooker (2004) found that GDP has a positive and significant effect on stock returns. However, Asmara and Asmara (2018) found different things, where GDP growth did not significantly affect the stock market.

The study conducted by Muhammad et al. (2016), Hussain et al. (2013), and Triani (2013) shows that the interest rate negatively correlates with stock prices. Meanwhile, Ningsih and Waspada (2018) and Apergis and Eleftheriou (2002) state that their research results show that the interest rate does not affect the stock market.

Considering the background of the problems disclosed by the researchers and the differences from the results of previous studies, this paper discusses the issues surrounding the effect of inflation, exchange rates, GDP, and interest rates on the JCI during the period 2015 to 2019. The period from 2015 to 2019 was chosen with the author's consideration. The 5-year time span is sufficient to represent market conditions and avoid abnormal situations due to the pandemic that hit the capital market in 2020.

## II. THEORY STUDY

### A. Signaling Theory

Signaling theory is one of the pillar theories in understanding financial management. In general, the signal is interpreted as a signal made by the company (manager) to outside parties (investors). These signals can take the form of various forms. Both can be directly observed and need to be examined in more depth to find out (Gumanti, 2009).

### B. Capital Asset Pricing Model

In 1960, William F. Sharpe, Litner, and Mossin developed the Capital Asset Pricing Model (CAPM) for the first time. The CAPM is a model that provides a measure of the risk of particular securities that are consistent with portfolio theory. This model calculates the undiversified risk of a single portfolio and compares it with the well-diversified risk. This CAPM model explains that the profit level of an asset or stock is equivalent to the risk-free rate of return plus a risk premium.

### C. Arbitrage Pricing Theory

Arbitrage Pricing Theory (APT) is a theory from Stephen A. Ross developed from the CAPM theory where APT states that the estimated expected return can be influenced by various factors (multifactor) while the CAPM price is only influenced by one factor, namely the market portfolio. The APT multifactor model identifies the number of factors and looks for the relationship of these factors to security returns, then determines these factors with macro indicators. The assumption that underlies APT is "the law of one price," which is different from the assumption of the CAPM concept. APT describes two or more securities with the same risk, and this means that each security cannot be sold at a different price if the same factors influence the security in the same economy. The multifactor model can be written with the following equation:

$$r_{it} = a_i + b_{i1}F_{1t} + b_{i2}F_{2t} + \dots + b_{ik}F_{kt} + e_{it}$$

### D. Inflation

The inflation rate is the rate of change in the general price level and is measured as follows (Samuelson and Nordhaus, 2004):

$$\text{Inflation} (th_t) = \frac{\text{Price} (th_t) - \text{Price} (th_{t-1})}{\text{Price} (th_t)} \times 100\%$$

Conceptually, the price level is measured as the weighted average of the goods - goods and services - services economy. However, the overall price level is measured by creating a price index which is the average consumer or producer price.

### E. Exchange rate

The rupiah exchange rate compares the value or price of the rupiah currency with other currencies. Trade between countries in which each country has its medium of exchange requires comparing the value of one currency with another, which is called the foreign exchange rate or exchange rate (Salvatore, 2008). The exchange rate policy is implemented to control the balance of payment transactions. A low exchange

rate relative to the currencies of other countries will encourage an increase in exports and reduce the pace of import growth.

### F. Gross Domestic Product (GDP)

One of the essential indicators to determine the economic conditions in a country in a certain period is GDP data, both at current prices and at constant prices. GDP is the amount of added value produced by all business units in a particular country or is the total value of final goods and services produced by all economic units.

### G. Interest Rate

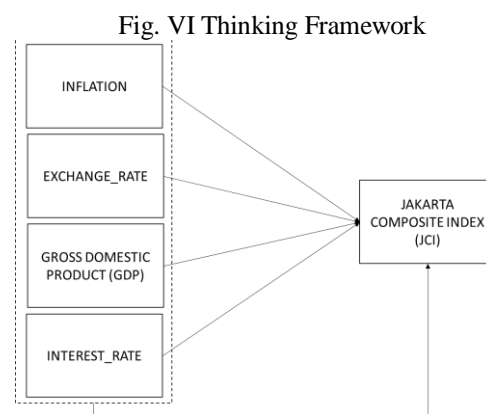
The interest rate is one of several monetary economic indicators. The policy interest rate may be required to keep aggregate supply and demand in balance and inflation on target over the medium term. Thus, supporting the growth of the economy.

## III. HYPOTHESIS AND THINKING FRAMEWORK

Based on the explanations, the hypothesis of this research is:

1. inflation has a significant effect on the JCI for the 2015-2019 period
2. the exchange rate has a significant effect on the JCI for the 2015-2019 period
3. GDP has a significant effect on the JCI for the 2015-2019 period
4. interest rates have a significant effect on JCI for the 2015-2019 period

The framework can be described as follows:



## IV. RESEARCH METHODS

### A. Research Design

This study aims to determine and analyze the effect of inflation, exchange rates, GDP, and interest rates on the composite stock price index on the Indonesia Stock Exchange for the 2015-2019 period.

### B. Data / Information Sources

The data obtained in this study is secondary data. Secondary data is a source of research data obtained by researchers indirectly through intermediary media (obtained and recorded by other parties). The data collected is based on

JCI movements, inflation, exchange rate data, GDP data, and interest rates quarterly.

C. Population and Samples

This study uses population data in the form of the JCI price index. According to the criteria set, the research objects are the JCI price index data every quarter for five years from 2015 – 2019.

D. Data Analysis Method

The analytical method used to analyze the data in this study is to use quantitative analysis. Quantitative analysis uses formula numbers or mathematical models to determine whether or not there is an effect of inflation, rupiah exchange rate, GDP, and interest rates on the JCI. The data analysis technique used in this research is using linear regression analysis. The analysis stages of this research are descriptive statistical analysis, classical assumption test, multiple linear regression analysis, and hypothesis testing

Multiple linear regression analysis model can be formulated as follows:

$$Y = \alpha + b_1 \text{Inflasi} + b_2 \text{Nilai Tukar} + b_3 \text{PDB} + b_4 \text{Suku Bunga} + \epsilon$$

V. RESEARCH RESULTS AND DISCUSSION

A. Descriptive Statistics

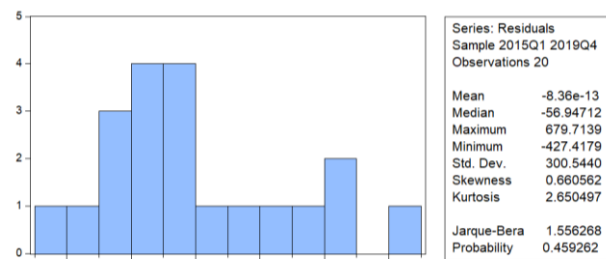
Table I Result in Descriptive Statistics

	JCI	Inflation	Exchange Rate	GDP	Interest Rate
Mean	5643,970	3,836500	13778,60	3409459	5,662500
Median	5814,472	3,375000	13652,00	3428758	5,250000
Maximum	6468,755	7,260000	14929,00	4067227	7,500000
Minimum	4223,908	2,530000	12998,00	2728181	4,250000
Std. Dev.	654,8797	1,385133	570,1859	417543,1	1,144998
Observations	20	20	20	20	20

B. Inferential Statistics

1. Data Normality Test

Table II Result of Data Normality Test



From normality test results, it can be seen that the value of Jarque Berra probability of 0.459262 > 0.05, meaning that residuals are normally distributed research data.

2. Autocorrelation Test

Table III Result of autocorrelation test

Breusch-Godfrey Serial Correlation LM Test:			
F-statistic	1.662689	Prob. F(2,13)	0.2275
Obs*R-squared	4.073875	Prob. Chi-Square(2)	0.1304

From the results of the autocorrelation test, the probability value of 0.1304 > 0.05, it can be concluded that there is no autocorrelation symptom in the research model.

3. Multicollinearity Test

Table IV Result of Multikolinieritas

	Inflation	Exchange Rate	GDP	Interest Rate
Inflation	1,000000000	-0,230998677	-0,696896832	0,623521172
Exchange Rate	-0,230998677	1,000000000	0,613542220	0,143602630
GDP	-0,696896832	0,613542220	1,000000000	-0,487109884
Interest Rate	0,623521172	0,143602630	-0,487109884	1,000000000

From the results of the multicollinearity test above, it can be seen that the correlation value of all variables is less than 0.7, so it can be concluded that there is no multicollinearity problem in the research variables.

4. Heteroskedasticity Test

Table V Result of Heteroskedasticity

Heteroskedasticity Test: White			
F-statistic	1.280882	Prob. F(14,5)	0.4201
Obs*R-squared	15.63935	Prob. Chi-Square(14)	0.3359
Scaled explained SS	7.259822	Prob. Chi-Square(14)	0.9242

The test result of heteroskedasticity using the White method obtained the value of probability Obs \* R- squared value of 0,3359 > 0.05 so that no symptoms of heteroskedasticity in mod e l research can be concluded.

C. Linear Regression Analysis

The following is a table of multiple linear test results.

Table VI Result of multiple linear tests

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Inflation	61.97103	87.94679	0.704642	0.4918
Exchange_Rate	-0.448745	0.225450	-1.990447	0.0651
GDP	0.001760	0.000388	4.530821	0.0004
Interest_Rate	-41.10546	106.8175	-0.384819	0.7058
C	5822.662	2114.672	2.753459	0.0148
R-squared	0.789383	Mean dependent var		5643.970
Adjusted R-squared	0.733219	S.D. dependent var		654.8797
S.E. of regression	338.2512	Akaike info criterion		14.69777
Sum squared resid	1716208.	Schwarz criterion		14.94671
Log likelihood	-141.9777	Hannan-Quinn criter.		14.74637
F-statistic	14.05484	Durbin-Watson stat		1.029289
Prob(F-statistic)	0.000058			

Based on the results of multiple linear tests, it can be formulated that the regression model of this study is :  
 $JCI = 5822.66185147 + 61.9710347519*INFLATION - 0.448745238736*EXCHANGE\_RATE + 0.00175963324862*GDP - 41.1054595587*INTEREST\ RATE$

### 1. Result of F test

From Table VI, the probability value of F-statistic is 0.000058, and when compared with the specified degree, it is 5%, so that the significance value of F is smaller than the degree of error ( $<0.05$ ). Because this value is smaller than the degree of error, it can be concluded that the independent variables jointly affect the dependent variable.

### 2. Coefficient Determination

In Table VI, the Adjusted R-squared value is 0.733219, indicating that 73.3219% of the JCI variable can be explained quite well by the four variables, namely inflation, exchange rates, GDP, and interest rates together. At the same time, the remaining 26.6781% is explained by other variables not examined in this study.

### 3. Result of t-test

Based on the test results in Table VI, it can be explained the influence between variables as follows:

- i. the inflation rate produces a *probability* value of 0.4918, and it can be concluded that the inflation variable does not affect the JCI,
- ii. the exchange rate produces a probability value of 0.0651, and it can be concluded that the exchange rate variable does not affect the JCI,
- iii. GDP level produces a probability value of 0.0004, so it can be concluded that the GDP variable has a positive effect on the JCI, and
- iv. The interest rate variable produces a probability value of 0.7058, so it can be concluded that the interest rate variable does not affect the JCI.

### D. Discussion

The results show that inflation has no significant effect on the JCI for the period 2015 to 2019. The results of this study are supported by research conducted by Rachmawati et al. (2015) and Kusuma and Badjra (2016), which stated in their research that the inflation rate partially did not affect the stock market. The inflation rate that occurred during the study period (January 2015 – December 2019) was relatively stable and with an average of below 5% year to year. With low and stable inflation that tends to slop, the movement of the JCI index for the period 2015 to 2019 is not much influenced by fluctuations in inflation, so that the inflation variable in this study has not been able to influence the stock market.

In line with the inflation variable, the study results show that the exchange rate has no significant effect on the JCI for 2015 to 2019. The results of this study are supported by previous research by Harsono and Worokinasih (2018) and Suriani et al. (2015), who stated in their research that the exchange rate did not affect the stock market. Investors are suspected of coping with exchange rate fluctuations that occurred in 2015 and 2018. The exchange rate during the study period was relatively stable between Rp13,000-Rp14,900 and had not crossed the psychological limit of Rp15,000. Plus, other variables such as stable inflation and the dominant portion of domestic investor trading ( $>70\%$ ) in the capital market resulting in no significant fluctuations due to exchange rate movements.

In contrast to the inflation and exchange rate variables, research on the GDP variable shows that GDP significantly affects the JCI for 2015 to 2019. The results are supported by previous research conducted by Asih and Akbar (2017) and Hooker (2004). In both studies, they stated that GDP had a significant positive effect on the stock market. In the study period, GDP increased significantly from year to year, and this can be seen followed by the movement of the JCI. An increase in GDP indicates economic growth. If a country's economic growth improves, the people's purchasing power will also increase, which is an opportunity for companies to increase their sales. By increasing the company's sales, the company's profits will also increase to positively impact the company's stock price and subsequently affect the JCI on the Indonesia Stock Exchange (IDX). Besides that, good economic growth also reflects the state of the country's economy, which is stable so that investors do not hesitate to invest their funds in the capital market.

Finally, the research results on the interest rate variable show that interest rates have no significant effect on the JCI for 2015 to 2019. The results of this study are supported by previous research conducted by Ningsih and Waspada (2018) and Apergis and Eleftheriou (2002), which stated that interest rates did not affect the stock market. During the study period (January 2015 – December 2019), the interest rate was relatively stable, with a sloping tendency in connection with the government's policy of keeping interest rates low. With low and stable interest rates that tend to slope, the movement of the JCI index for the period 2015 to 2019 is not much influenced by fluctuations in interest rates, so the interest rate variable in this study has not been able to influence the stock market.

## VI. CONCLUSIONS & SUGGESTION

### A. Conclusions

Based on the results of research and discussions that have been carried out, it can be concluded that:

1. the inflation variable has no effect on the JCI for the 2015-2019 period;
2. the exchange rate variable has no effect on the JCI for the 2015-2019 period;
3. the variable GDP has a positive effect significantly on the JCI for the 2015-2019 period; and
4. the interest rate variable has no effect on the JCI for the 2015-2019 period.

### B. Suggestion

Based on the research and conclusions that have been drawn, there are several practical suggestions that researchers can give, including:

1. For academics, the results of this study can be used as a reference related to financial management and are expected to provide a deeper understanding of the influence of macroeconomic variables on stock price movements.
2. For investors, this research is expected to understand macroeconomic variables and their influence on stock prices, especially the GDP variable, so that they can make optimal investment decisions in response to relevant circumstances.

3. Capital market regulators are expected to use this research's results to formulate appropriate policies if relevant market conditions indicate maintaining capital market stability.
4. For company management (issuers), to be able to immediately respond in an accountable and transparent manner to the public if macro conditions affect the company's value, for example, through disclosure of company policy information.

The following are suggestions that can be used as a reference for future research.

1. Future research is expected to examine macroeconomic variables and microeconomic variables to get a clearer picture of the JCI movement.
2. Further research is also expected to confirm the causes of the influence of macroeconomic variables so that more in-depth and targeted research results can be obtained.
3. Further research can also examine the effect of macroeconomic variables on stock price movements using other methods, such as VAR/VECM, to obtain a more detailed picture of how macroeconomic variables affect the post-announcement period.

## REFERENCES

- [1]. Adesanmi, A. A., & Jatmiko, D. P. (2017). The Impact of Macroeconomic Variables on an Emerging Economy Stock Market: Evidence from Jakarta Composite Index, Indonesia. *International Journal of Economic Perspectives*, 11(2).
- [2]. Afiyati, H. T., & Topowijono, T. (2018). Pengaruh Inflasi, BI Rate dan Nilai Tukar Terhadap Return Saham (Studi Pada Perusahaan Subsektor Food & Beverages Yang Terdaftar Di Bursa Efek Indonesia Periode 2013-2016). *Jurnal Administrasi Bisnis*, 61(2), 136-143.
- [3]. Amadasu, D. E. (2012). Interest rate, inflation rate, and exchange rate influence the Nigerian stock market index. *Afrrev Ijah: An International Journal Of Arts And Humanities*, 1(3), 357-366.
- [4]. Apergis, N., & Eleftheriou, S. (2002). Interest rates, inflation, and stock prices: the case of the Athens Stock Exchange. *Journal of Policy Modeling*, 24(3), 231-236.
- [5]. Asih, N. W. S., & Akbar, M. (2017). Analisis pengaruh inflasi, suku bunga, nilai tukar (kurs) dan pertumbuhan produk domestik bruto (PDB) terhadap indeks harga saham gabungan (IHSG) studi kasus pada perusahaan properti yang terdaftar di Bursa Efek Indonesia. *Jurnal Manajemen dan Akuntansi*, 17(1).
- [6]. Asmara, W. P., & Asmara, I. P. W. P. (2018). Pengaruh Pengaruh Variabel Makro Ekonomi Terhadap Indeks Harga Saham Gabungan. *E-Jurnal Manajemen*, 7(3), 1397-1425.
- [7]. Athiyah, Noor. 2008. *Kebutuhan Informasi dan Perilaku Pencarian Informasi: Tesis : Program Studi Ilmu Perpustakaan dan Informasi*, FIB UI.
- [8]. David Wijaya. 2017. *Manajemen Keuangan Konsep dan Penerapannya*. Jakarta: PT. Grasindo.
- [9]. Gumanti, T. A. (2009). Teori sinyal dalam manajemen keuangan. *Manajemen Usahawan Indonesia*, 38(6), 4-13.
- [10]. Harsono, A. R., & Worokinasih, S. (2018). Pengaruh Inflasi, Suku Bunga, dan Nilai Tukar Rupiah Terhadap Indeks Harga Saham Gabungan (Studi pada Bursa Efek Indonesia Periode 2013-2017). *Jurnal Administrasi Bisnis*, 60(2), 102-110.
- [11]. Hooker, M. A. (2004). Macroeconomic factors and emerging market equity returns a Bayesian model selection approach. *Emerging markets review*, 5(4), 379-387.
- [12]. Husnul, H. M., Hidayat, R. R., & Sulasmiyati, S. (2017). Analisis pengaruh inflasi, kurs (IDR/USD), produk domestik bruto dan harga emas dunia terhadap indeks harga saham gabungan (studi pada Indonesia periode 2008-2016). *Jurnal Administrasi Bisnis*, 53(1), 66-74.
- [13]. Hussain, A., Rafique, M., Khalil, A., & Nawaz, M. (2013). Macroeconomic determinants of stock price variations: an economic analysis of KSE-100 index. *Pakistan Journal of Humanities and Social Sciences*, 1(1), 28-46.
- [14]. Kabeer, M. A. (2017). The influence of macroeconomic factors on stock markets performance in top SAARC Countries and China. *Journal of Business and Financial Affairs*.
- [15]. Kusuma, I. P. M. E., & Badjra, I. B. (2016). Pengaruh Inflasi, JUB, Nilai Kurs Dollar dan Pertumbuhan GDP terhadap IHSG di Bursa Efek Indonesia. *E-Jurnal Manajemen*, 5(3).
- [16]. Lanyi, A., & Saracoglu, R. (1983). The importance of interest rates in developing economies. *Finance and Development*, 20(2), 20.
- [17]. Lukisto, J., & Anastasia, N. (2014). Dampak Makroekonomi Terhadap Indeks Harga Saham Sektor Properti di Indonesia Periode Tahun 1994-2012. *Jurnal Analisa*, 3(2), 1-5.
- [18]. Muhammad, A. K., Iqbal, A., Najaf, R., & Najaf, K. (2016). The Influences Of Macro-Economic Factors On Capital Market Performance In Pakistan. *International Journal of Research-Granthaalayah*, 4(2), 139-150.
- [19]. Ningsih, M. M., & Waspada, I. (2018). Pengaruh BI Rate Dan Inflasi Terhadap Indeks Harga Saham Gabungan (Studi Pada Indeks Properti, Real Estate, Dan Building Construction, di BEI Periode 2013-2017). *Manajerial: Jurnal Manajemen dan Sistem Informasi*, 17(2), 247-258.
- [20]. Rachmawati, Martien and Laila, Nisful. (2015). "Pengaruh Makroekonomi yang mempengaruhi Pergerakan Harga Saham pada Indeks Saham Syariah Indonesia". *JESTT*. Vol. 2, No 11. Hal. 928-942.
- [21]. Rusbariand, S. P., Masodah, R., & Herawati, S. (2012). Analisis Pengaruh Tingkat Inflasi, Harga Minyak Dunia, Harga Emas Dunia, Dan Kurs Rupiah Terhadap Pergerakan Jakarta Islamic Index Di Bursa Efek Indonesia. *Forum Bisnis & Keuangan I*. ISBN: 978-602-17225-0-3. Hal. 724-740.
- [22]. Sabilla, A. R., & Kurniasih, A. (2020). The effect of macroeconomics on stock index. *International Journal of Economics and Management Studies*, 7, 85-92.
- [23]. Samuelson, P. A. & Nordhaus, W. D. 2004. *Ilmu makroekonomi. Edisi ketujuh belas*. PT. Media Global Edukasi. Jakarta

- [24]. Salvatore, Dominick. 2018. *Ekonomi Internasional. Edisi 9*. Penerbit Erlangga. Jakarta
- [25]. Samsul, Mohamad. 2006. *Pasar Modal dan Manajemen Portofolio*. Jakarta: Erlangga.
- [26]. Siregar, Yunita Putri, Rosyetti and Kornita, Sri Endang. (2014). Pengaruh Nilai Tukar, Inflasi dan Jumlah Uang Beredar terhadap Indeks Harga Saham Gabungan. *Jon FEKON*. Vo. 1, No. 2. Hal. 1-15.
- [27]. Sukirno, Sadono. 2015. *Makroekonomi Teori Pengantar*. Rajagrafindo Persada. Jakarta.
- [28]. Suriani, S., Kumar, M. D., Jamil, F., & Muneer, S. (2015). Impact of exchange rate on the stock market. *International Journal of Economics and Financial Issues*, 5(1S).
- [29]. Tandelilin, Eduardus. 2007. *Analisis Investasi dan Manajemen Portofolio*, Edisi Pertama. Yogyakarta: BPFE.
- [30]. Tandelilin, Eduardus. 2010. *Portofolio dan Investasi Teori dan Aplikasi*. Edisi Pertama. Yogyakarta: Kanisius
- [31]. Triani, L. F. (2013). Faktor-Faktor Yang Mempengaruhi Perubahan Indeks Harga Saham Di Jakarta Islamic Index Selama Tahun 2011. *Jurnal Organisasi dan Manajemen*, 9(2), 162-178.