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通膨、利率、匯率及標準普爾500指數對印尼雅加達

綜合指數之影響

The Influences of Inflation, Interest Rate, Exchange Rate, and

S&P 500 on Indonesia Composite Stock Price Index

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Abstract

The Influences of Inflation, Interest Rate, Exchange Rate, and S&P 500 on

Indonesia Composite Stock Price Index

By

Hanifa Nur Fadhilla

This research is aimed to investigate the influence of inflation, interest rate, exchange rate, and S&P 500 on Indonesia Composite Stock Price (I-CSPI). This study examines the factors influencing I-CSPI in Indonesia Stock Exchange (IDX). The period of this study is from 2014 to 2018. The object of this research is I-CSPI. This study used secondary data. The hypotheses are examined using four models to support the factors influencing I-CSPI.

The result of this research expressed that from independent variables do not influence I-CSPI. Thus, the hypotheses are rejected. This research result derives from t-test statistics. Based on F-test, independent variables are not simultaneously influence I-CSPI.

Keyword: inflation, interest rate, exchange rate, S&P 500, Indonesia Composite Stock Price Index

TABLE OF CONTENTS

List of Figures and Tables

1. Introduction

1.1. Background

The stock market index is an indicator that illustrates the comprehensive market circumstances. It helps the investors in analyzing the comprehensive market model. The investors capture stock market as a reference to make a determination for investing. There are several importance of stock market index: Firstly, Helps in stock-picking. In a stock market, we see a lot of companies listed in the exchange. Extensively, choosing the right stock for investment may seem not easy. Beyond a reference point, we may not competent to make distinction among the stocks. At the same time, classifying the stocks becomes demanding. In this circumstance, a stock market serves like prompt differentiator. It distinguish the companies and their stocks depend on essential aspects such as company size, field, and others.

Secondly, Undertakes in the role of a representative. Investing in equities associates uncertainty and we need to take an informed selection. Indices assist to meet the learning differences that occur among the investors. They depicts the movement of the entire market and particular sector. Thirdly, Guideline for associate comparison. Earlier including a stock in our portfolio, we have to appraise whether it is value the money. By considering the underlying index, we are able effortlessly assess the stock performance. We may also analyze the index with a set of stocks. In the role of an investor, we are able to recognize market movements smoothly.

Fourthly, Reveals investor tendency. When we are engaging in equity markets, among other things, recognizing investor tendency becomes a substantial aspect. It is due to the tendency influences the demand for a stock which in turn impacts the overall price. In order to invest in the right stock, we should notice the motive of rise or fall in prices. We may notice investor tendency for a specific sector and across market capitalizations.[1]

Indonesia Composite Stock Price Index (I-CSPI) is a reflection of capital market activities in Indonesia. An increase of I-CSPI shows bullish circumstance of the capital market. Contrary, a decrease of I-CSPI shows bearish circumstance of the capital market. Therefore, an

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[1] https://cleartax.in/s/stock-market-index

1

investor must understands the pattern of stock price in capital market. An index that often considered by investors when they investing in Indonesia Stock Exchange (IDX) is I-CSPI. It is due to this index as composite index of all stocks listed in Indonesia Stock Exchange (IDX). Through movement I-CSPI, an investor can know market circumstance whether in passionate circumstance or not. The difference of this market circumstance need the different strategy by investors. I-CSPI firstly introduced on April 1, 1983 as an indicator of all stock prices movement listed in Indonesia Stock Exchange (IDX) both common stock and preferred stock.[2] An index is a statistical measure usually used in order to express the changes of group variable values. Hartono (2000) confirmed that I-CSPI actually is a good stock price index that can reflect the market's trend.

In stock ownership, there is a stock block holder that holds at least five percent of the entire equity of a company (Abor & Beikpe, 2006). The important element of stock block ownership by external party is the stronger monitoring over the manager or insider so as to reduce the agency problem between management and stockholders (La Porta et al., 1999). The opposite occurs when the stock block ownership is dominated by the company's management. This can make the management feels free to make decisions even it could hurt the company. The stock block ownership which is dominated by management can lower the company value due to the growing problem of agency and the exploitation on minority stockholders (Lins 2003).

The type of stockholders may affect the type of information they demand from the company. For example, the demand for information is getting higher if the company has larger percentage of foreign ownership (Schipper, 1981; Siregar et al, 2010). Multinational companies or companies with larger foreign ownership tend to reflect on the practices undertaken by foreign entities, on terms that are not specifically regulated in the rules of domestic legislation in an effort to attract more investment, to meet the expectations of foreign investors, and to ensure their long-term survival prospects (Dimaggio & Powell 1983)

A foreign ownership remains dominate with portion 66% of stock ownership in Indonesia Stock Exchange (IDX). It caused stock market is vulnerable toward global financial circumstance due to financial ability of the owners. According to Tempo (2017), The Indonesia

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[2] https://www.sahamonline.id/2017/05/pengertian-indeks-harga-saham-gabungan.html

Stock Exchange (IDX) revealed that stock ownership of foreign investors throughout 2017 keeps increasing to IDR 1.878 trillion compared to the end of 2016 with IDR 1.691 trillion. An increasing foreign ownership in domestic stock market indicates that Indonesia's economic fundamental is still strong. Therefore, foreign investment funds are actually not released, they only realize some of the profit, and we need to be optimistic about the future development.

There are many factors that influence I-CSPI, for instance, economic indicators, global oil price, global economic circumstance, and country political stability. In this research, we are willing to identify whether inflation, interest rate, exchange rate, and foreign stock index influence I-CSPI movement. First variable is inflation. Inflation defined as a tendency of ascending price generally and continuously (Boediono, 2001). A value of money has never been stable in the world economy, while the price of goods or services tended to increase. This will cause the purchasing power of currency has been down, so it will result inflation.[3] The increasing of inflation number will cause deteriorating economy. Thus, it will cause in declining of company's profit that resulted stock price movement (equity effect) become less competitive. As higher as inflation occurred, then I-CSPI will be decline as well.

Second variable is interest rate. The interest rate is one of macroeconomic factor that influence the stock price (Mohammad, 2006). A rising interest rate of Bank Indonesia has an impact in increasing the interest of deposit. Then, it will increase the interest rate of debt, so economy investment will also decline. When the interest rate increases, the stock price will decrease and vice versa. An increasing of interest rate makes people tend to invest in savings or deposits. So that, the stock price will fall. The interest rate of Bank Indonesia (BI rate) in last 4 years fluctuated. In 2011, the interest rate amounted 6.58%. In a year, it declined to 5.77%. And then in 2013 and 2014, it increased became 6.48% and 7.54% respectively.[4] A higher interest rate can decrease company's profit and it will lead the investors sell their stocks and move their funds to bond market. The investors who are no longer in stock market will make stock price decline and it has huge effect on I-CSPI.

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[3]https://www.investopedia.com/terms/i/inflation.asp
[4]https://www.bps.go.id/linkTableDinamis/view/id/1061

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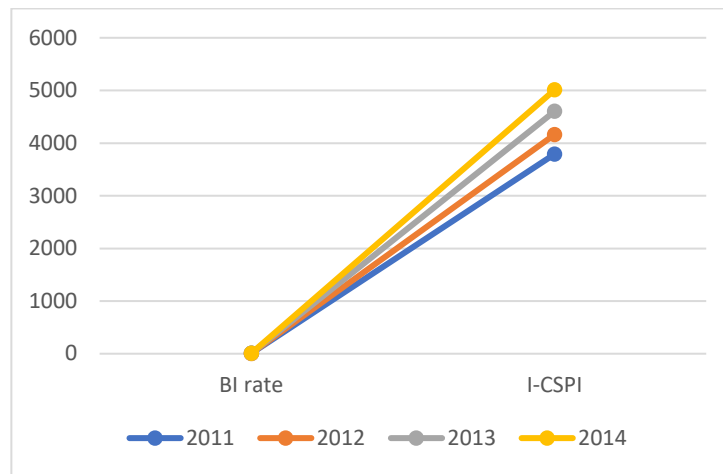
Figure 1.BI rate and I-CSPI over period 2011 – 2014

Third variable is exchange rate. Thobarry (2009) stated the exchange rate of foreign currency is a price of a country's currency against other country currency. A declining of interest rate triggered by increasing the foreign exchange trading activities in term of U.S. Dollar and vice versa. Thus, many investors tend to invest their money in foreign exchange trade and vice versa. The value of foreign exchange trading in term of Rupiah (IDR) to U.S. Dollar weakened. In the beginning of January 2011, the exchange rate of Rupiah (IDR) to U.S. Dollar amounted IDR 9,021 and closed in the end of December 2011 amounted IDR 9,113. The exchange rate of Rupiah (IDR) to U.S. Dollar in the beginning of January 2012 amounted IDR 9,171 and closed in the end of December 2012 amounted IDR 9,718. In the beginning of January 2013, the exchange rate of Rupiah (IDR) to U.S. Dollar amounted IDR 9,733 and closed in the end of December amounted IDR 12,250. The exchange rate of Rupiah (IDR) to U.S. Dollar in the beginning of January 2014 amounted IDR 12,303 and closed in the end of December amounted IDR 12,502.[5] The reason is Rupiah (IDR) depreciates occurred if the fundamental factor of Indonesia economy is not strong (Sunariyah, 2006). This clearly increase risk to the investors that are willing to invest in Indonesia Stock Exchange (Ang & Robert, 1997). The investors will avoid risk, so the investors will tend to sell it and wait until better economic situation felt. Selling stock conducted by the investors will encourage decline of I-CSPI. It implies negative signal to the investors.

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[5] https://finance.yahoo.com/quote/IDR%3DX/chart
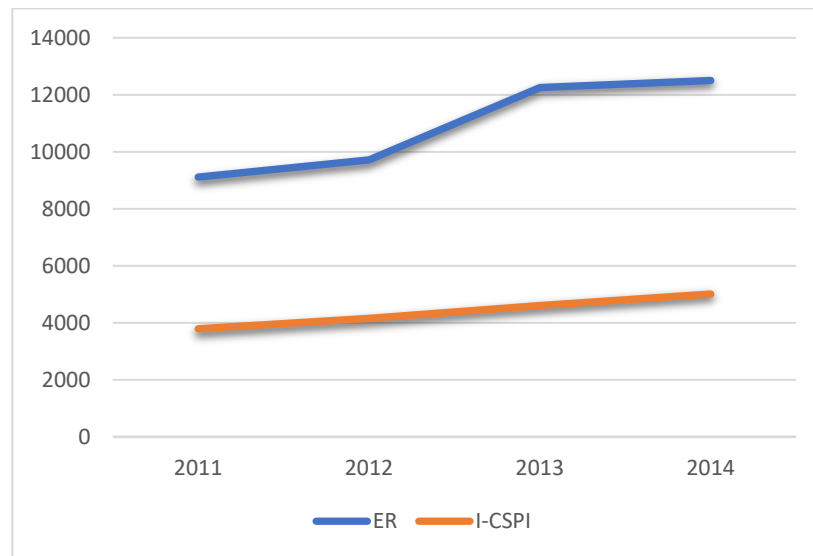
Figure 2. Exchange rate and I-CSPI over period 2011 – 2014

According to Tandelilin (2001), the appreciation of Rupiah (IDR) against foreign currency is a positive signal to the investor. The strengthening of Rupiah (IDR) exchange rate against foreign currency caused many investors are willing to invest in stock. It is due to the appreciation of Rupiah (IDR) exchange rate indicated the good economy of a country. While, when the Rupiah (IDR) is depreciating, it means foreign currency is appreciating and Indonesia economic condition is less good. Thus, it will make the investor to rethink in investing on stock due to it related to profit that they will obtain. A declining of stock demand will cause the stock price is also decreasing.

Fourth variable is foreign stock index. Many investors in developed country diversified their portfolio in capital market of emerging market country. It makes capital market over the world integrated one another. An increase and decrease in capital market over the world become a sentiment for other capital markets. The market of developing country usually used as an indicator by country that categorized in emerging market. One of global index can be a reference in decision-making process in Indonesia Stock Exchange (IDX) is S&P 500. It is an index consisting of 500 companies with massive capital that mostly derived from United States. This index is well known index owned and managed by Standard & Poor's that a division of McGraw-Hill. It can represent the influence of huge United States Stock Exchange toward

5

worldwide stock exchange includes Indonesia. All of stocks placed in S&P 500 are huge public companies and traded in main United States Stock Exchange such as New York Stock Exchange and Nasdaq. Following Dow Jones Industrial Average, S&P 500 is an index that most considered.[6] Therefore, it can influence most of stock indices over the world including I-CSPI. The effect of S&P 500 on I-CSPI is estimated to positive. It implies an increase of S&P 500 resulted an increase of I-CSPI in Indonesia Stock Exchange (IDX). It is caused by any positive sentiment of the investors to world economic situation.

       The interrelation between Indonesia Stock Exchange (IDX) and Foreign Stock Exchange can be seen when a global financial crisis occurred in 2008. A crisis initiated by the subprime mortgage crisis in United States. It caused substantial impact in global financial sector and developed became global financial crisis over the world including Indonesia. During 2008, almost worldwide exchange recorded a huge decreasing as the worst record. In the beginning 2008, as the further impact of subprime mortgage, United States Treasury Department is taking over the largest housing company named Fannie Mae and Freddie Mac. Furthermore, the collapse of Lehman Brothers and Merril Lynch then acquired by Bank of America. The Fed had provided fund to the market amounted USD 70 billion. However, Dow Jones Index remains fall by 4.4% (the greatest since September, 2001). It also caused European Exchange fell.[7]

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[6] https://www.investopedia.com/insights/introduction-to-stock-market-indices/
[7] https://www.thebalance.com/2008-financial-crisis-3305679

According to Tempo, New York Stock Exchange more fell after S&P 500 lowering United States debt rank from AAA to AA+. It also affects Dow Jones Index decreased by 5.5%. Indonesia Stock Exchange (IDX) is also affected by those decreasing. The following financial crisis effect in United States make several huge financial companies and other companies over the world went bankrupt. United States is world economic center, so the slowdown of United States economy is very influencing the performance of worldwide money market. It can be concluded that United States economic crisis is very determine the circumstance and stability of global economy including Indonesia that remained depend on United States economy circumstance. In general, there are two opinions about the relationship among stock exchange in various countries. Firstly, any joint movement or co-movement among worldwide stock exchange. Secondly, no joint movement or co-movement among worldwide stock exchange. According to Hirt and Block (1993), the direction of the indices are all closely related, but they do not necessarily move together.

This research revisits the issue of which factors affecting I-CSPI. This study is same from the previous one on the subject of the research. However, the time series is different. In this research, we use factors of inflation, interest rate, exchange rate, and S&P 500 on I-CSPI. For the interest rate, we use BI rate and S&P 500 as one of foreign stock index. We analyze data from 2014 – 2018 that take data for 5 years. By limiting the duration, hopefully the result will more represent I-CSPI in economic condition at that time. Indonesia economic condition tends to change over time and unstable, so that it will affect the result.

1.2. Research Questions

1. Does the inflation influence I-CSPI in Indonesia Stock Exchange (IDX)?

2. Does the Bank Indonesia rate (BI rate) influence I-CSPI in Indonesia Stock Exchange (IDX)?

3. Does the changes of exchange rate influence I-CSPI in Indonesia Stock Exchange (IDX)?

4. Does S&P 500 influence I-CSPI in Indonesia Stock Exchange (IDX)?

1.3. Research Objectives

Based on the problem identification, the objectives of the research are:

1. To find the influence of inflation on I-CSPI in Indonesia Stock Exchange (IDX).

2. To find the influence of Bank Indonesia rate (BI rate) on I-CSPI in Indonesia Stock Exchange (IDX).

3. To find the influence of exchange rate on I-CSPI in Indonesia Stock Exchange (IDX).

4. To find the influence of S&P 500 on I-CSPI in Indonesia Stock Exchange (IDX).

1.4. Limitation of Research

The limitation of research is defined to focuses on I-CSPI in Indonesia Stock Exchange (IDX) that influenced by inflation, interest rate, exchange rate, and S&P 500 period 2014 – 2018.

1.5. Research Contribution

This research hopefully help investors in giving information that can be used to make a decision to do investment, especially considering those observed variables. For investment managers, this research hopefully help as consideration to make decision related with I-CSPI. In addition, the results of this study may become the guidance in developing financial management related to I-CSPI.

2. Literature Review

2.1. Indonesia Composite Stock Price Index (I-CSPI)

According to Hartono (2000), I-CSPI is actually is a stock price index that can reflect the market's trend. Those index price can compare the changes of stock price over time. In addition, I-CSPI is an index shows the movement of stock price in general listed in Indonesia Stock Exchange (IDX) that become an indicator of development in capital market (Anoraga & Pakarti, 2001). I-CSPI in capital market is very affecting on portfolio investment. An increase of I-CSPI return will affect an increase of portfolio investment as well. The investors are willing to raise their investment in the companies listed in Indonesia Stock Exchange (IDX) by the information about expected return rate of securities in capital market over time.

I-CSPI was first introduced on April 1, 1983 as an indicator of all stocks movement listed in Indonesia Stock Exchange (IDX) in term of common stock and preferred stock. The based day of index calculation was on August 10, 1982 with the value of 100. There were 13 issuers listed at that time. Nowadays, the issuers listed in Indonesia Stock Exchange (IDX) is 396 issuers. The calculation of I-CSPI is conducted in order to know the development of all stocks listed in Indonesia Stock Exchange (IDX) in average.[8] In order to minimize the factors influencing that are not stock price, based value is always adjusted if there is corporate action such as stock split, stock dividend, stock bonus, limited offer, and so on. Thus, an index will only reflect the stock movement.

2.2. The Factors that Influence I-CSPI

2.2.1. Inflation

Inflation is defined as a price tendency to increase generally and continuously (Boediono, 2001). An increase of 1 or 2 product cannot be called inflation, except an increase will affect mostly products in the market. There are 3 mainly inflation theories that each theory stated certain aspects:[9]

Firstly, Quantity theory is theory that any direct relationship between changes of money supply in the market with change of product prices. The price of product is directly proportional

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[8] https://id.wikipedia.org/wiki/Indeks_Harga_Saham_Gabungan
[9] https://ardra.biz/ekonomi/ekonomi-makro/teori-inflasi/

to money supply in the market. In the other word, it explained that an increase in money supply will increase price of product.

Secondly, Keynes theory. According to this theory, inflation occurs due to the society are willing to live beyond their economic capabilities. This circumstance is characterized by demand of goods exceed the available goods. Thus, it will generate inflationary gap. As long as inflationary gap exists, an inflation process continuously happens. In addition, an increase of product price is not only defined by an increase in money supply, but also an increase of production cost.

Thirdly, Structuralist theory. This theory also called long-term inflation theory. It concerns the cause of inflation that derives from economic structure, especially supplies of food and export goods. An increase of goods production is irrelevant with the growth of their needs. It caused an increase in price of product and foreign exchange scarcity. Additionally, it was also caused an increase in goods prices uniformly, so that it occurred inflation. This inflation cannot only overcome by diminishing money supply, but also an increase in productivity and development of foods and export goods sectors.

According to Boediono (2001), inflation can be categorized by domestic inflation and imported inflation. Domestic inflation can be caused by budget deficit of a country. If the government printing new money, it will increase money supply. So that, it will caused an increase of goods prices. Thus, it will generate inflation. Meanwhile, imported inflation is inflation that occurred due to an increase in prices of necessary goods. Automatically, the prices of import goods will also increase when it sold abroad including in Indonesia.

2.2.2. Interest Rate (BI rate)

Interest rate is a value or return given by investor the use of investment based on the calculation of economic value in a certain period of time. The interest rate of a bank is used in order to control the economy of a country.[10] In addition, it is also capital cost paid by the company in the use of funds of capital owner. Policy of high interest rate tend to make people in saving than investment and consumption and vice versa.

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[10]ttps://www.kajianpustaka.com/2018/03/pengertian-jenis-fungsi-dan-faktor-tingkat-suku-bunga.html

The central bank of Indonesia is Bank Indonesia, also known as BI or Bank Central Republic Indonesia. The main objective of Bank Indonesia is to achieve and maintain stability of the rupiah, the currency of Indonesia. When reference is made to the Indonesian interest rate this often refers to the BI rate. The BI rate is the base rate (policy rate) which is used by the central bank of Indonesia to shape the monetary policy. It is also published monthly to the public. An increase or decrease of BI rate has actually calculated by considering other economic factors such as inflation, macroeconomic, future monetary policy, and so on.[11] The rate is reflected in an increase or decrease of the Interbank Overnight rate (O/N) which is the interbank rate. When the BI rate is changed the interbank rate is following shortly thereafter most of the time. This is also affecting the interest rates which banks apply on products like savings accounts, mortgages and loans.

2.2.3. Exchange Rate

According to Thobbary (2009), the price of a currency to other currencies called as exchange rate. It is also expresses an asset price. Exchange rate is an important thing in open economy due to it has enormous influence to current account and other macroeconomic variables.

There are several factors influencing exchange rate changes:

- Depreciation is price decline of national currency against other currencies. It is due to the supply and demand powers in the market mechanism pull each other. It implies the price of other currencies become more expensive and price of national currency is relatively decline.

- Appreciation is price increase of national currency against other currencies. It is due to the supply and demand powers in the market mechanism pull each other. It implies the price of other currencies become cheaper and price of national currency is relatively increase.

- Devaluation is price decline of national currency against other currencies officially conducted by government of a country.

- Revaluation is price increase of national currency against other currencies officially conducted by government of a country.In addition, there are several factors influencing exchange rates (Hamdy, 2010):[12]

-    Supply and demand foreign currency

The sources of foreign currency supply such as export goods and services also capital import and other foreign currencies from abroad to national country. Meanwhile, the sources of foreign currency demand such as import goods and services also capital export and other foreign currencies from national country to abroad

- Position of Balance of Payment

The balance of payments (BOP) is a statement of all transactions made between entities in one country and the rest of the world over a defined period of time, such as a quarter or a year. These transactions consist of imports and exports of goods, services and capital, as well as transfer payments, such as foreign aid and remittance in a certain period of time will generate a balance position in positive (surplus) and negative (deficit) or equilibrium.

- Inflation rate

The change of inflation rate will affect currency supply and demand, then it will affect exchange rate.

- Interest rate

The change of inflation rate is relatively influence foreign exchange and foreign securities, then it will influence supply and demand of foreign currency and exchange rate.

- Income level

If the income level is relatively high, while the availability of goods is relatively small. It will increase import of goods. An increase of import will increase foreign currency demand.

- Government supervision

Government usually do policies of monetary, fiscal, and import trade in order to attain certain purpose that has effect of foreign exchange rate

2.2.4. S&P 500

S&P 500 is stock index of 500 enormous U.S. companies. It comprises real estate investment trusts and business development companies. The stocks must be placed on the New York Stock Exchange, Investors Exchange, Nasdaq, or BATS. A committee decides each of its index based on their liquidity, size, and industry. It was formally announced on March 4, 1957, by Standard & Poor. McGraw-Hill obtained it in 1966. Nowadays, S&P Dow Jones Indices holds it.[13]

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[13]https://www.thebalance.com/what-is-the-sandp-500-3305888

It depicts the stock market's performance by informing the risks and returns of the enormous companies. The investors run it in the role of the reference point of general market. Market capitalization is the total value of all stocks of a company has issued. It is calculated by multiplying the number of stocks issued by the stock price. It uses diverse constituency and weighting methodology. It is one of the most commonly followed equity indices, and many consider it one of the best representations of the U.S. stock market.

2.3. Previous Researches on Factors affecting I-CSPI

In 2008, Muharam & Nurafni in their research about the analysis of exchange rate effect and Dow Jones Industrial Average index on I-CSPI. The result of research revealed exchange rate negatively influence I-CSPI. Meanwhile, Dow Jones Industrial Average index positively influence I-CSPI. A research conducted by Octafia (2011) about the effect of interest rate, exchange rate, and money supply on real estate and property stock price indices. The research resulted interest rate and exchange rate negatively influence its stock price indices. In 2012, Kewal conducted a research about the effect of inflation, interest rate, exchange rate, and GDP growth on I-CSPI. The result of research concludes that inflation rate, interest rate, and growth rate has no influence on I-CSPI. Meanwhile, exchange rate significantly influence on I-CSPI. Rupiah (IDR) exchange rate against U.S. Dollar has negatively significant impact. Meanwhile, a research conducted by Hasan (2015) related to the effect of gold price, inflation rate, oil price, and exchange rate, and regional index on I-CSPI. The result of research shows gold price, inflation rate, exchange rate, and regional index positively affect I-CSPI. Nonetheless, inflation rate and oil price showed has no influence on I-CSPI. In 2017, Prabaningtyas about the analysis of exchange rate effect on I-CSPI. The result revealed exchange rate has positive significant effect on I-CSPI. According to Susanti, an effect of interest rate and inflation rate on I-CSPI revealed negatively on I-CSPI.

2.4. Conceptual Framework

2.4.1. The Influence of Inflation on I-CSPI

An inflation is defined as a tendency of increasing price generally and continuously (Boediono, 2001). An increase of inflation is relatively negative signal to the investor in capital market. An inflation increase company's income as well as cost. If an increase of production cost is higher than an increase of product price, the profitability of a company will be decline. Further, the company's profit will be small and it will lead the investors are not willing to invest their funds in a company. Then, the stock price will also decline. As higher as inflation occurred, then I-CSPI will be decline as well. Thus, it implies an inflation negatively influence I-CSPI.

2.4.2. The Influence of Interest Rate on I-CSPI

An expected return in investment usually affected by return of the investor in other alternative investments. According Wiston and Brigham (1990) stated that an interest rate influences stock price. An interest rate has huge impact on stock price. A higher interest rate will generate economy of a country in weak circumstance. Then, it will result higher interest fee as well. A higher interest rate can decrease company's profit and it will lead the investors sell their stocks and move their funds to bond market. The investors who are no longer in stock market will make stock price decline and it has huge effect on I-CSPI. Thus, BI rate negatively influence I-CSPI.

2.4.3. The Influence of Exchange Rate Changes on I-CSPI

According to Thobbary (2009), exchange rate of a foreign currency is currency price of a country against other countries. According to Tandelilin (2001), a strengthening Rupiah (IDR) to foreign currencies will lowering in import raw material cost and interest rate that applied. The change of Rupiah (IDR) to U.S. Dollar (USD) affects the companies that has foreign debts and high import. If Rupiah (IDR) appreciates and acted upon by the monetary authorities through taking policy of lowering time deposit interest rate, then it will make people tend to withdraw their deposits and invest on stock that will increase stock price. To the investors, in case Rupiah (IDR) depreciates, it signifying that the prospect of Indonesia economy decreased. The reason is Rupiah (IDR) depreciates occurred if the fundamental factor of Indonesia

14

economy is not strong (Sunariyah, 2006). This clearly increase risk to the investors that are willing to invest in Indonesia Stock Exchange (Ang & Robert, 1997). The investors will avoid risk, so the investors will tend to sell it and wait until better economic situation felt. Selling stock conducted by the investors will encourage decline of stock price in Indonesia Stock Exchange (IDX). It implies negative signal to the investors. Thus, exchange rate negatively influence I-CSPI.

2.4.4. The Influence of S&P 500 on I-CSPI

S&P 500 is an index of main indices in U.S. This index presents economic activities in US. It is an index comprises 500 companies with large capital that one of largest stock indices over the world.[14] Therefore, it can influence most of stock indices over the world including I-CSPI. The effect of S&P 500 on I-CSPI is estimated to positive. It implies an increase of S&P 500 resulted an increase of I-CSPI in Indonesia Stock Exchange (IDX). It is caused by any positive sentiment of the investors to world economic situation. Thus, S&P 500 positively influence I-CSPI.

In this research, the variable has two kinds of variables namely independent variable and dependent variable. The technical analysis method is used to examine whether independent variables significantly influence dependent variable or not by using t – test as partial test.

Figure 3. Conceptual Framework of the Research

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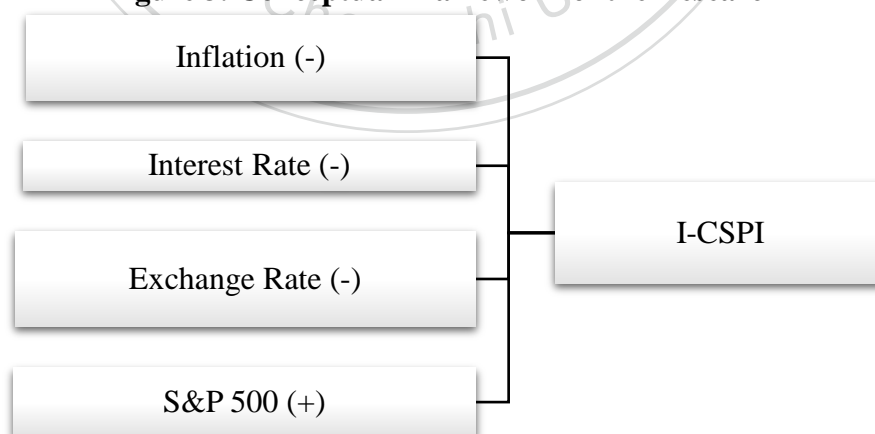
3. Research Methodology

3.1. Research Method

This research is conducted by statistic descriptive method and correlation matrix. This research focuses on the influences of inflation, interest rate, exchange rate, and S&P 500 on I-CSPI. The type of this research is secondary data of yahoo finance, Bank Indonesia website, and Statistic Center Bureau from 2014 – 2018. This research uses multiple regression analysis. The analysis makes use more than one independent variable to explain the factors influencing I-CSPI. Firstly, the factors influencing I-CSPI are explained. Thus, it will generate prediction for the relationship between those independent variables and dependent variable.

3.2. The Object of Research

The object of this research was Return on I-CSPI as dependent variable. Meanwhile, changes of inflation, BI rate, and exchange rate, also return on S&P 500 as independent variables. The observation was conducted by time series data amounted 60 months from 2014 – 2018.

3.3. Type and Sources of Data

The sources of data are secondary data from yahoo finance, Bank Indonesia website, Statistic Center Bureau, and more information about this research. The research is using monthly I-CSPI, inflation, BI rate, exchange rate, and S&P 500 from 2014 - 2018

3.4. Variable Definition & Measurement

3.4.1. I-CSPI

I-CSPI represents the average of all stocks in Indonesia Stock Exchange (IDX). The calculation of I-CSPI was conducted in order to know the development of all stocks listed in Indonesia Stock Exchange (IDX) in average. I-CSPI is calculated by dividing market value with based value. The result of those calculation then multiplied by 100. This is intended to show the market direction, profitability measurement, and portfolio performance benchmarking. Here, we use return on I-CSPI. So, the formula becomes:

$$\text{Return on I-CSPI} = \frac{ICSPI_t - ICSPI_{t-1}}{ICSPI_{t-1}}$$

Where as:

$ICSPI_t$ = I-CSPI in a given period

$ICSPI_{t-1}$ = I-CSPI in a previous period

3.4.2. Inflation

Inflation generally represents rise pricing and continuously in a certain period of time. Here, the formula of ΔInflation is:

$$\Delta INF = INF_t - INF_{t-1}$$

Where as:

INF_t = Inflation rate in a given period

INF_{t-1} = Inflation rate in a previous period

3.4.3. Interest Rate

BI rate is a policy of interest rate that reflects a monetary policy stipulated by Bank Indonesia. An increase or decrease of BI rate is calculated by considering economic factors such as inflation, macroeconomic, and future monetary policy. A change of BI rate will affect time deposit interest rate that will also affect the investors to invest their funds on stock or time deposit. Here, ΔBI rate that we used, formula becomes:

$$\Delta BIR = BIR_t - BIR_{t-1}$$

Where as:

BIR_t = BI rate in a given period

BIR_{t-1} = BI rate in a previous period

3.4.4. Exchange Rate

An analysis of supply and demand mechanisms in foreign exchange rate market can explain how the exchange rate stipulated. The difference of currency exchange rate in a country principally is determined by demand and supply of currency. Here, ΔExchange rate formula becomes:

$$\Delta ER = ER_t - ER_{t-1}$$

Where as:

ER_t = Exchange rate in a given period

ER_{t-1} = Exchange rate in a previous period

17

3.4.5. S&P 500

The S&P 500 is widely regarded as the best single gauge of large-cap US equities. It differs from others due to its diverse constituency and weighting methodology. The formula of return on S&P 500:

$$\text{Return on S\&P } 500 = \frac{S\&P_t - S\&P_{t-1}}{S\&P_{t-1}}$$

Where as:

$S\&P_t$ = S&P 500 in a given period

$S\&P_{t-1}$ = S&P 500 in a previous period

3.5. Analytical Method

3.5.1. Regression Model

This research will use multiple linear regression analysis since there are more than one factors or determinants that will be researched. The aim of this technique is to measure the impact of the different factors on I-CSPI. The formulation of this multiple regression is:

$$\text{Return ICSPI} = \alpha + \beta_1 \, \Delta INF + \beta_2 \, \Delta BIR + \beta_3 \, \Delta ER + \beta_4 \text{Return SP} + \varepsilon$$

Where:

Return I-CSPI   : return on I-CSPI

α : constant coefficient

$\beta_1 - \beta_4$: regression coefficient of each independent variable

ΔINF : changes on inflation

ΔBIR : changes on BI rate

ΔER : changes on exchange rate

Return SP   : return on S&P 500

ε : standard error

18

3.5.2. Classical Assumption Test

Regression model from Ordinary Least Square (OLS) is a model which generates best bias linear estimation. This condition can occur if it conducts and fulfills these three assumptions of classical test: 1) *multicollinearity* test; 2) auto-correlation test; 3) and *heteroscedasticity* test.

3.5.2.1 Multicollinearity test means that there is relationship that occurs among independent variables in some variables or all variables in regression model. The aim is to identify the relationship among independent variables in regression model. Assumption of classical test theory stated that there should be no *multicollinearity* among independent variables. If the correlation of independent variables is strong, it means that there is *multicollinearity* in regression model. If there is a *multicollinearity* among independent variables, the consequence is that there will be higher possibility of error in estimating process. The possibility of wrong hypothesis will be higher. In the end, the regression model will be unable to measure value of independent variable. To calculate *multicollinearity*, we can find through measure Variance Inflation Factor (VIF) which can be calculated using SPSS. Usually, if the amount is bigger than 5, then the independent variable has *multicollinearity* problem with other variables.

3.5.2.2 Auto-correlation test means that there is correlation among samples which are sorted by time. The time series in the observation makes the deviation appears. Gujarati (1999) explained that this test was conducted in order to find the relationship between samples of observations which were sorted by time series or space. If the observation is related each other, the auto-correlation appears in regression model. Thus, Ordinary Least Square (OLS) estimator is still consistent but inefficient. Moreover, the regression generated cannot describe certain independent variable. Auto-correlation test can be conducted through Durbin-Watson test with requirements shown in the table below:

19

Table 1 Auto-correlation symptoms

Value of d based on regression model	Conclusion
$0<d<dL$	There is positive auto-correlation in regression model
$dL<d<dU$	No conclusion
$dU<d<4-dU$	No auto-correlation exists in regression model
$4-dU<d<4-dL$	No conclusion
$4-dL<d<0$	There is negative auto-correlation in regression model

The value of d_U and d_L depends on the amount of samples and amount of independent variable, which later on can be checked usually in statistic books.

3.5.2.3 Heteroscedasticity test is a test to find out whether there is no different standard value of deviation of dependent variable and each independent variable value. If it appears, it means that the estimation of regression coefficient will be inefficient. This test can be conducted with Spearman correlation rank test, graphics method test, Pearson test, White test, Park test, or the easier one available in SPSS is Glejser test. The existence of *heteroscedasticity* can be conducted by using scatterplot that have requirements such as: 1) There is *heteroscedasticity* if there is certain pattern, such as point that will form certain pattern of wavy, lateral, or narrow; 2) There is no *heteroscedasticity* if there are no clear pattern and points that spread in the upper and lower of y axis.

3.6. Hypotheses Testing

The hypotheses in this research will be:

a. H_o1: $\beta_1 > 0$; There is no influence of inflation on I-CSPI.

   H_a1: $\beta_1 \leq 0$; There is negative influence of inflation on I-CSPI.

b. H_o2: $\beta_2 > 0$; There is no influence of BI rate on I-CSPI.

   H_a2: $\beta_2 \leq 0$; There is negative influence of BI rate on I-CSPI.

c. H_o3: $\beta_3 > 0$; There is no influence of exchange rate on I-CSPI.

   H_a3: $\beta_3 \leq 0$; There is negative influence of exchange rate on I-CSPI.

d. H_o4: $\beta_4 > 0$; There is no influence of S&P 500 on I-CSPI.

   $Ha4$: $\beta_4 \leq 0$; There is positive influence of S&P 500 on I-CSPI.

4. Research Result and Analysis

4.1. Descriptive Statistic Analysis

Descriptive statistic is a set of brief descriptive coefficients that summarizes a given data set, which can either be a representation of the entire population or a sample. It shown in table 1

Table 2:Results of Descriptive Statistics A

	Minimum	Maximum	Mean	Std. Deviation
ICSPI	4223.908	6605.631	5380.84808	579.336390
INF	.0279	.0836	.046678	.0169115
BIR	.0425	.0775	.061417	.0135090
ER	11305	15273	13336.02	961.328
SP	1782.5900	2913.9800	2260.107678	311.6761894
Valid N (listwise)				

The lowest inflation during the research period is 2.79% and the highest inflation is 8.36%. It shows the number of inflation as research sampling is from 2.79% to 8.36% with the average of inflation is 4.67% and standard deviation of inflation during the research period is 1.69%. From the table above, interest rate has minimum 4.25% and the maximum rate is 7.75%. It represents the number of interest rate as research sampling is from 4.25% to 7.75%. The value of mean is 6.14% and value of standard deviation is 1.35% during the research period.

Based on the descriptive statistic toward exchange rate in table above, the minimum value is 11,305 and the maximum value is 15,273. The mean of exchange rate is 13,336. While, the standard deviation value is 961. During the research period, return on S&P 500 has minimum value of 1,783. The maximum value of S&P 500 is 2,914. S&P 500 has the average of 2,260. Besides that, the standard deviation of S&P 500 is 312 during the research period. Regarding I-CSPI, it has minimum value of 4,224 and maximum value of 6,606. While, the average is 5,381 and standard deviation is 579.

Table 3 Results of Descriptive Statistics B

	Minimum	Maximum	Mean	Std. Deviation
Return ICSPI	-.0783	.0678	.006111	.0305559
ΔINF	-.0217	.0213	-.000728	.0063995
ΔBIR	.0000	.0000	.000000	.0000000
ΔER	-1132	1584	38.93	420.721
Return SP	.0003	.0006	.000456	.0000635
Valid N (listwise)				

Based on table 2, the minimum value of return on I-CSPI is -0.0783 which means the lowest difference I-CSPI in given period and previous period is -7.83% from I-CSPI in previous period. The maximum value is 0.0678 which means the highest difference I-CSPI in given period and previous period is 6.78% from I-CSPI in previous period. While, the average of return on I-CSPI is 0.006111 which means the average of return on I-CSPI has 0.61% from I-CSPI in previous period. In contrast, standard deviation of return on I-CSPI is 0.0305559 which means the size of spread from return on I-CSPI is 3.06%

The lowest inflation changes during the research period is -2.17% and the highest value is 2.13%. It shows the number of inflation changes as research sampling is from -2.17% to 2.13% with the average of inflation is -0.07% and standard deviation of inflation during the research period is 0.64% From the table above, interest rate changes has minimum, maximum, average, and standard deviation are 0.

Based on the descriptive statistic toward exchange rate changes in table above, the minimum value is -1,132 and the maximum value is 1,584. The mean of exchange rate is 39. While, the standard deviation value is 421. During the research period, return on S&P 500 has minimum value of 0.0003 which means the lowest difference S&P 500 in given period and previous period is 0.03% from S&P in previous period. The maximum value of S&P 500 is 0.0006 which means the highest difference S&P 500 in given period and previous period is 0.06% from S&P in previous period. Return on S&P 500 has the average of 0.000456 which means the average of return on S&P 500 has 0.05% from S&P 500 in previous period. Besides, the standard deviation of S&P 500 is 0.0000635 during the research period.

4.2. Correlation Matrix

Table 4: Correlation Matrix of Variables

Correlations

		Return ICSPI	ΔINF	ΔBIR	ΔER	Return SP
Return ICSPI	Pearson Correlation	1	-.038	.ª	-.140	.150
	Sig. (2-tailed)		.776	.	.285	.254
ΔINF	Pearson Correlation	-.038	1	.ª	.102	-.094
	Sig. (2-tailed)	.776		.	.437	.475
ΔBIR	Pearson Correlation	.ª	.ª	.ª	.ª	.ª
	Sig. (2-tailed)	.	.		.	.
ΔER	Pearson Correlation	-.140	.102	.ª	1	-.135
	Sig. (2-tailed)	.285	.437	.		.304
Return SP	Pearson Correlation	.150	-.094	.ª	-.135	1
	Sig. (2-tailed)	.254	.475	.	.304	

a. Cannot be computed because at least one of the variables is constant.

According to table 4.3, each variable does not correlate with anything. For return on I-CSPI, it has strongest correlation is 0.15 with return on S&P 500. However, probability is 0.254. Thus, it is not statistically significant different from zero. It means there is 0.254 chance of finding it if the population correlation is zero. For inflation changes, it has correlation amounted 0.102 with exchange rate changes. Nonetheless, probability is 0.437. Then, it is not statistically significant different from zero. It represents there is 0.437 chance of finding it if the population correlation is zero.

4.3. The Classical Assumption Test

Before testing the hypothesis with t-test, we conducted classical assumption test in particularly *multicollinearity* test, auto-correlation test, and *heteroscedasticity* test.

4.3.1. Multicollinearity Test

Multicollinearity test is needed to examine whether there is an independent variable has a resemblance between the independent variables in a model. Similarities between the independent variable will generate very strong correlation. In addition, this test is also to avoid the habit in the decision-making process regarding any effect on the partial test in each independent variable over the dependent variable.

Table 5: Multicollinearity Test

Coefficients^a

Model	Collinearity Statistics	
	Tolerance	VIF
1 (Constant)		
ΔINF	.983	1.017
ΔER	.974	1.027
Return SP	.975	1.025

a. Dependent Variable: Return ICSPI

According to the table above, VIF value for independent variables have tolerance more than 0.1 and VIF value is under 10. Thus, the regression model proposed in this research does not contain *multicollinearity*.

25

4.3.2. Auto-correlation Test

Auto-correlation test aims to investigate whether there is a correlation among variables on the time series. This test detects autocorrelation using the value of Durbin-Watson compared to table of Durbin-Watson.

Table 6 Auto-correlation Test

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.193[a]	.037	-.014	.0307733	1.847

a. Predictors: (Constant), Return SP, Δ INF, Δ ER

b. Dependent Variable: Return ICSPI

In this research, we obtained that the result of Durbin-Watson value is 1.847. Then, the value of d_L from *the* Durbin-Watson table = 1.4443 and the value of d_u from the Durbin-Watson table = 1.7274. It means that the Durbin-Watson value is between d_L = 1.4443 and d_u = 1.7274. Thus, there is no autocorrelation.

4.3.3. Heteroscedasticity test

Heteroscedasticity examines the residual variance difference from one observation period to other observation periods. This test is how to investigate whether there is *heteroscedasticity* that can be seen in Scatterplot graphic. The result of *heteroscedasticity* test in this research can be seen in the graphic picture below:
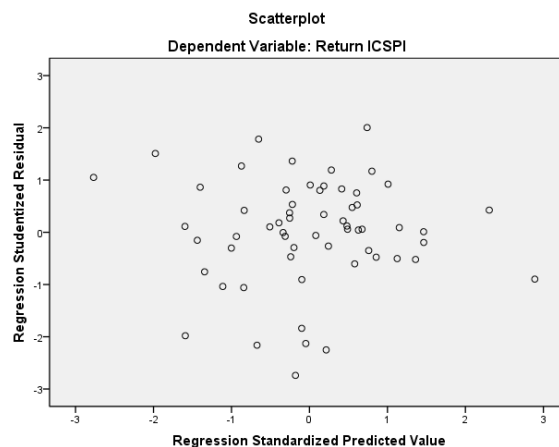
Figure 4. Scatterplot Graphic

26

According to the graphic above, the dots spread randomly above and under 0 in Y axis. There is no pattern. Hence, the model proposed in this research is free from *heteroscedasticity*.

4.4. Multiple Linear Regression

In this research, we calculated the regression from the data using software computer namely SPSS 18. The result of the testing in multiple linear regressions toward the factors influencing I-CSPI is presented in the following table:

Table 7 Results of Multiple Linear Regression

Coefficients[a]

Model	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
1 (Constant)	-.023	.029		-.768	.446
ΔINF	-.061	.631	-.013	-.096	.924
ΔER	-8.809E-6	.000	-.121	-.913	.365
Return SP	63.630	63.923	.132	.995	.324

a. Dependent Variable: Return ICSPI

This research uses the model of multiple linear regression equation as follows:

$$\text{Return on I-CSPI} = \alpha + \beta_1 \, \Delta INF + \beta_2 \, \Delta BIR + \beta_3 \, \Delta ER + \beta_4 \, \text{Return SP} + \varepsilon$$

Thus, the illustration of the result of multiple linear regressions related to the factors influencing I-CSPI as follows:

$$\text{I-CSPI} = -0.023 - 0.061 \, \Delta INF - 8.809E\text{-}6 \, \Delta ER + 63.63 \, \text{Return SP} + \varepsilon$$

27

4.5. Hypotheses Test Result and Analysis

4.5.1. T-test

T-test is used to prove second hypothesis. This hypothesis testing is used to test the influence of each independent variable (inflation, interest rate, exchange rate, and S&P 500) toward dependent variable (I-CSPI). In this testing, we used confidence level of 95 % or $\alpha =$ 5%. Basically, t-test shows how far the influence of an independent variable individually in explaining variation of dependent variable. The regression coefficient used to know the influence of inflation, interest rate, exchange rate, and S&P 500 on I-CSPI. The decision of hypothesis test partially done as follows:

1) If the significance level ≤ 5%, so H_o rejected and H_a accepted

2) If the significance level > 5%, so H_o accepted and H_a rejected

4.5.1.1 The Influence of Inflation on I-CSPI

From table 4.6, the inflation has t-value of -0.096 and the significance value is 0.924. Hence, the significance value is greater than 0.05. It means that the relationship of inflation changes and return on I-CSPI is insignificant. Thus, H_a1 is rejected that there is negative influence of inflation on I-CSPI. The result of statistical analysis for inflation variable shows that regression coefficient amounted -0.061. The insignificant influence between inflation and I-CSPI can be caused by the average of inflation in small portion of -0.07% and the standard deviation of inflation is higher amounted 0.64%. For inflation, it has correlation is -0.038 with return on I-CSPI. However, probability is 0.776. Thus, it is not statistically significant different from zero. It means there is 0.776 chance of finding it if the population correlation is zero. In this research, whether inflation rate increases or not, it does not influence return on I-CSPI. Thus, inflation does not affect I-CSPI.

4.5.1.2 The Influence of Interest Rate on I-CSPI

H_a2 is rejected that there is negative influence of BI rate towards I-CSPI. BI rate variable is constant. The research results of Kewal (2012) stated that BI rate do not influence BI rate on I-CSPI. These result is insignificant caused by investor types in Indonesia that investors like to

do stock transaction in short-term (trader). So that, investors tend to do profit taking action with the expectation that they will obtain quite high capital gain in capital market rather than BI certificate. On the other hand, public companies will distribute quite high dividend to the shareholders as a stimulus to the investors in order to invest in stock compared to securities in money market.

4.5.1.3 The Influence of Exchange Rate on I-CSPI

According to table 4.6, exchange rate has t-value of -0.913 and the significance value is 0.365. Hence, the significance value is greater than 0.05. It represent H_a3 that any negative significantly influence of exchange rate on I-CSPI is rejected. The insignificant influence between exchange rate changes and return on I-CSPI can be caused by the average in small amount of 39 and the standard deviation is 421. For exchange rate, it has correlation is -0.14 with return on I-CSPI. However, probability is 0.285. Thus, it is not statistically significant different from zero. It means there is 0.285 chance of finding it if the population correlation is zero. The difference of currency exchange rate in a country will not affect I-CSPI. Regardless Rupiah (IDR) appreciates or depreciates, the investors possibly willing to invest their stocks in any circumstance. Thus, exchange rate does not influence I-CSPI.

4.5.1.4 The Influence of S&P 500 on I-CSPI

The t-value of S&P 500 in table 4.6 is 0.995 and the significance value is 0.324. Hence, the significance value is greater than 0.05. It means that the influence between S&P 500 and I-CSPI is insignificant. Therefore, H_a4 is rejected that there is positive influence of S&P 500 on I-CSPI. It was contradict with research explained by Riantani & Tambunan (2013) that there is positive influence between S&P 500 and I-CSPI. By increasing S&P 500, economic performance in U.S. was also getting better. As one of Indonesia export destination countries, U.S. economic growth can encourage Indonesia economic growth by exports also capital inflow in term of direct investor even by capital market (Sunariyah, 2006). Indonesia capital market has integrated with global capital market. The insignificant can be caused by it has strongest correlation is 0.15 with return on I-CSPI. However, probability is 0.254. Thus, it is not statistically significant different from zero. It means there is 0.254 chance of finding it if the population correlation is zero. Thus, S&P 500 does not influence I-CSPI.

29

4.5.2. F-test

F-test intended to test regression model of all independent variables (inflation, interest rate, exchange rate, and S&P 500) simultaneously toward dependent variable (I-CSPI).

Table 4.7 F-test

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.002	3	.001	.723	.542[a]
	Residual	.053	56	.001		
	Total	.055	59			

a. Predictors: (Constant), Return SP, ΔINF, ΔER

b. Dependent Variable: Return ICSPI

From the table above, we found F-value amounted 0.723 and significance level amounted 0.542. It shows the significance level is greater than 0.05. Thus, independent variables are not simultaneously influence I-CSPI.

30

5. Conclusions

Based on the analysis of research result, we found independent variables do not influence I-CSPI in IDX. Thus, the hypotheses are rejected. Regarding, inflation, it has t-value of -0.096 and the significance value is 0.924. The insignificant influence between inflation and I-CSPI can be caused by the average is -0.07% and the standard deviation is higher amounted 0.64%. For inflation, it has correlation is -0.038 with return on I-CSPI. However, probability is 0.776. Thus, it is not statistically significant different from zero. Meanwhile, interest rate variable is constant.

For exchange rate, it has t-value of -0.913 and the significance value is 0.365. The insignificant influence between exchange rate changes and return on I-CSPI possibly caused by the average in small amount of 39 and the standard deviation is 421. In addition, it has correlation is -0.14 with return on I-CSPI. However, probability is 0.285. Thus, it is not statistically significant different from zero. For S&P 500, t-value is 0.995 and the significance value is 0.324. The insignificant can be caused by it has strongest correlation is 0.15 with return on I-CSPI. However, probability is 0.254. Thus, it is not statistically significant different from zero

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7. Appendix

Research Data

Date	ICSPI	INF	BIR	ER	S&P
Des-13	4418.757	0.0750	0.0750	12217	1848.36
Jan-14	4620.216	0.0822	0.0750	12143	1782.59
Feb-14	4768.277	0.0775	0.0750	11601	1859.45
Mar-14	4840.146	0.0732	0.0750	11305	1872.34
Apr-14	4893.908	0.0725	0.0750	11515	1883.95
May-14	4878.582	0.0732	0.0750	11595	1923.57
Jun-14	5088.802	0.0670	0.0750	12020	1960.23
Jul-14	5136.863	0.0453	0.0750	11561	1930.67
Aug-14	5137.579	0.0399	0.0750	11715	2003.37
Sep-14	5089.547	0.0453	0.0750	12132	1972.29
Oct-14	5149.888	0.0483	0.0750	12150	2018.05
Nov-14	5226.947	0.0623	0.0775	12175	2067.56
Dec-14	5289.404	0.0836	0.0775	12420	2058.9
Jan-15	5450.294	0.0696	0.0775	12570	1994.99
Feb-15	5518.675	0.0629	0.0750	12857	2104.5
Mar-15	5086.425	0.0638	0.0750	13087	2067.89
Apr-15	5216.379	0.0679	0.0750	12915	2085.51
May-15	4910.658	0.0715	0.0750	13165	2107.39
Jun-15	4802.529	0.0726	0.0750	13322	2063.11
Jul-15	4509.607	0.0726	0.0750	13492	2103.84
Aug-15	4223.908	0.0718	0.0750	13910	1972.18
Sep-15	4455.18	0.0683	0.0750	14680	1920.03
Oct-15	4446.458	0.0625	0.0750	13602	2079.36
Nov-15	4593.008	0.0489	0.0750	13638	2080.41
Dec-15	4615.163	0.0335	0.0750	13845	2043.94
Jan-16	4770.956	0.0414	0.0725	13765	1940.24
Feb-16	4845.371	0.0442	0.0700	13425	1932.23
Mar-16	4838.583	0.0445	0.0675	13240	2059.74
Apr-16	4796.869	0.0360	0.0675	13170	2065.3
May-16	5016.647	0.0333	0.0675	13631	2096.95
Jun-16	5215.994	0.0345	0.0650	13139	2098.86
Jul-16	5386.082	0.0321	0.0650	13058	2173.6
Aug-16	5364.804	0.0279	0.0525	13283	2170.95
Sep-16	5422.542	0.0307	0.0500	13003	2168.27
Oct-16	5148.91	0.0331	0.0475	13063	2126.15
Nov-16	5296.711	0.0358	0.0475	13502	2198.81

Dec-16	5294.103	0.0302	0.0475	13466	2238.83
Jan-17	5386.692	0.0349	0.0475	13338	2278.87
Feb-17	5568.106	0.0383	0.0475	13339	2363.64
Mar-17	5685.298	0.0361	0.0475	13299	2362.72
Apr-17	5738.155	0.0417	0.0475	13351	2384.2
May-17	5829.708	0.0433	0.0475	13319	2411.8
Jun-17	5840.939	0.0437	0.0475	13278	2423.41
Jul-17	5864.059	0.0388	0.0475	13320	2470.3
Aug-17	5900.854	0.0382	0.0450	13334	2471.65
Sep-17	6005.784	0.0372	0.0425	14918	2519.36
Oct-17	5952.138	0.0358	0.0425	15273	2575.26
Nov-17	6355.654	0.0330	0.0425	14356	2584.84
Dec-17	6605.631	0.0361	0.0425	14553	2673.61
Jan-18	6597.218	0.0325	0.0425	13421	2823.81
Feb-18	6188.987	0.0318	0.0425	13694	2713.83
Mar-18	5994.595	0.0340	0.0425	13757	2640.87
Apr-18	5983.587	0.0341	0.0425	13870	2648.05
May-18	5799.237	0.0323	0.0450	13977	2705.27
Jun-18	5936.443	0.0312	0.0525	14350	2718.37
Jul-18	6018.46	0.0318	0.0525	14403	2816.29
Aug-18	5976.553	0.0320	0.0550	14751	2901.52
Sep-18	5831.65	0.0288	0.0575	14918	2913.98
Oct-18	6056.124	0.0316	0.0575	15273	2711.74
Nov-18	6194.498	0.0323	0.0600	14356	2760.17
Dec-18	6194.5	0.0313	0.0600	14553	2506.85
Dec-16	5294.103	0.0302	0.0475	13466	2238.830
Jan-17	5386.692	0.0349	0.0475	13338	2278.870
Feb-17	5568.106	0.0383	0.0475	13339	2363.640
Mar-17	5685.298	0.0361	0.0475	13299	2362.720
Apr-17	5738.155	0.0417	0.0475	13351	2384.200
May-17	5829.708	0.0433	0.0475	13319	2411.800
Jun-17	5840.939	0.0437	0.0475	13278	2423.410
Jul-17	5864.059	0.0388	0.0475	13320	2470.300
Aug-17	5900.854	0.0382	0.0450	13334	2471.650
Sep-17	6005.784	0.0372	0.0425	14918	2519.360
Oct-17	5952.138	0.0358	0.0425	15273	2575.260
Nov-17	6355.654	0.0330	0.0425	14356	2584.840
Dec-17	6605.631	0.0361	0.0425	14553	2673.610
Jan-18	6597.218	0.0325	0.0425	13421	2823.810
Feb-18	6188.987	0.0318	0.0425	13694	2713.830
Mar-18	5994.595	0.0340	0.0425	13757	2640.870

Apr-18	5983.587	0.0341	0.0425	13870	2648.050
May-18	5799.237	0.0323	0.0450	13977	2705.270
Jun-18	5936.443	0.0312	0.0525	14350	2718.370
Jul-18	6018.46	0.0318	0.0525	14403	2816.290
Aug-18	5976.553	0.0320	0.0550	14751	2901.520
Sep-18	5831.65	0.0288	0.0575	14918	2913.980
Oct-18	6056.124	0.0316	0.0575	15273	2711.740
Nov-18	6194.498	0.0323	0.0600	14356	2760.170
Dec-18	6194.5	0.0313	0.0600	14553	2506.850