EXCHANGE AND EXPORT ANALYSIS OF THE COMBINED STOCK PRICE INDEX IN INDONESIA PERIOD 1986-2022

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Abstract

Many previous studies have proven that there is an influence between the exchange rate (the Rupiah exchange rate against the US Dollar), Exports on the Composite Stock Price Index (IHSG). By using the Autoregressive Distributed Lag (ARDL) model approach using the Eviews 10 program. In this study, we look more deeply at the dynamics of long-term and short-term relationships for the variable exchange rate of the Rupiah against the US Dollar, Exports and the JCI. The research period starts from 1986 to 2022, during which time there are many global upheavals that have a significant impact on Indonesia, one of which is the weakening of the Rupiah exchange rate against the US Dollar. In this study, through the ARDL model of the Rupiah exchange rate against the US Dollar, Exports and JCI are proven to have long-term cointegration or move together in the long term. But not only in the long term, these three variables also have short-term relationship dynamics which have a fairly high speed of adjustment towards balance every year.

Keywords: ***Composite Stock Price Index, Exchange Rate and Export.***

1. INTRODUCTION

Shares are a bookkeeping or unit of value in various financial instruments that refer to the ownership part of a company. According to Husnan Suad, a stock is a piece of paper that shows the rights of the investor, namely the party who owns the paper to obtain a share of the prospects or wealth of the organization that issues the security, and various conditions that allow these investors to exercise their rights.(Sinay et al., 2018). According toJogiyanto (2000) The share price is the price that occurs on the stock market at a certain time and the share price is determined by market participants. The high or low share price is also determined by the demand and supply of these shares on the capital market. The index that investors often pay attention to when investing in the Indonesia Stock Exchange is the Jakarta Composite Index (IHSG). Factors that affect the value of the JCI include indicators of interest rates, exchange rates and exports. Stock prices also act as an important economic indicator in economic activity. Currently, the Indonesian stock exchange has 40 types of stock indexes. When there is excess supply, the price will fall and vice versa if there is excess demand, the stock price will rise(Yusra, 2019)

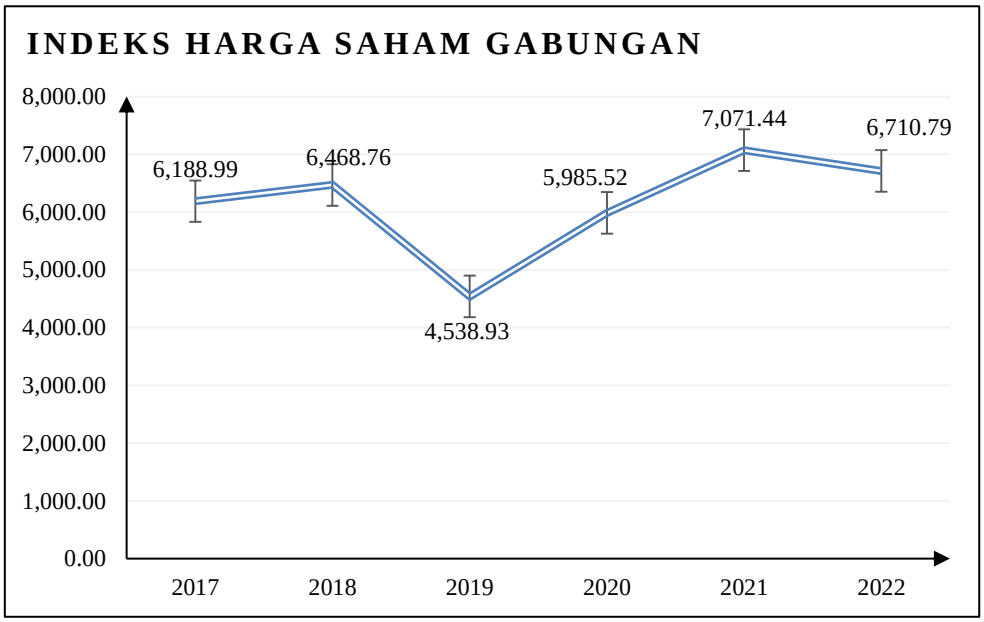
Stock Price Index is an indicator that shows the current stock price movement. And the index functions as an indicator of market trends, meaning that the movement of the index describes market conditions at a time, whether the market is active or sluggish. The Composite Stock Price Index (IHSG) is one of the stock market indices used by the Indonesian stock exchanges. The Indonesian Composite Stock Price Index, whose movements indicate conditions in the capital market. JCI changes every day due to changes in market prices that occur every day and additional shares. The increase in the number of outstanding shares comes from new issuers, namely the entry of new issuers listed on the stock exchange, or

corporate actions in the form of splits, rights, warrants, stock dividends, bonus shares, and convention shares.

According toTandelilin (2010)said that there are two types of shares, namely:

1. Ordinary shares (common stock) is a certificate that shows proof of ownership of a company.
2. Preferred stock is a type of equity security that differs in several respects from common stock.

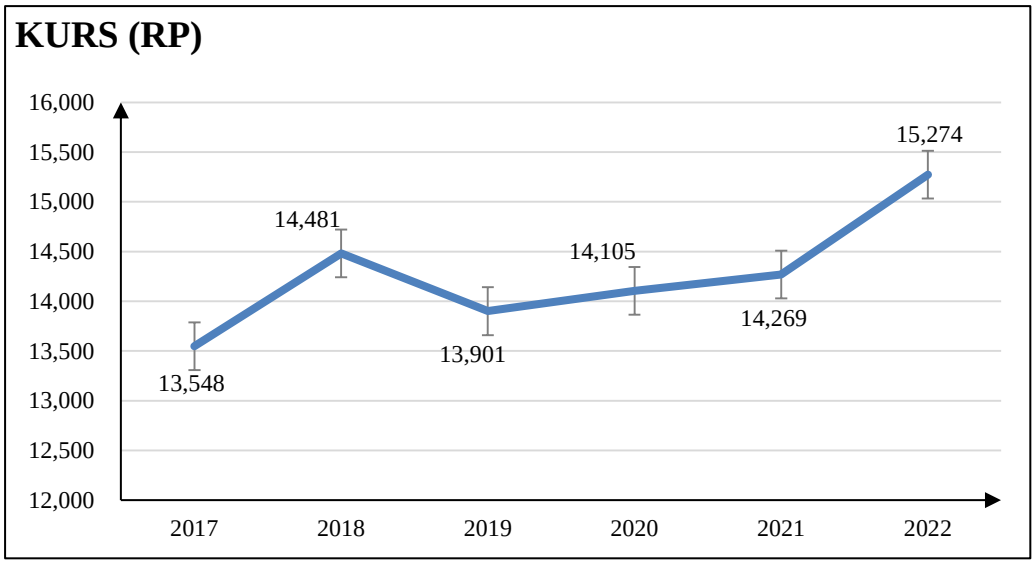
It can be explained through the following graph to provide a complete picture of the development of the Jakarta Composite Index (IHSG) in Indonesia.



Data Source: finance. yahoo. JKSE, 2022

Figure 1. Movement of the Jakarta Composite Index (IHSG)

Based on figure 1. the movement of the JCI in Indonesia from 2017 to 2022 experienced a significant increase except in 2019 which experienced a decline.In 2020 the JCI increased from the previous year with the closing position achieved at the level of 5,985 however the JCI this year was still lower or decreased from 2021. Then the JCI experienced a decline from 2021, reaching the level of 6,710.79 in 2022. Exchange rate (exchange rate) is a comparison of currency values when there is an exchange involving two different currencies. The strengthening of the rupiah exchange rate against foreign currencies is a positive signal for inflation. If inflation decreases, it can give a positive signal to investors in the capital market(Tandelilin, 2010). The rupiah exchange rate changes every day because it is relative. These changes are expressed in comparison to other countries' currencies. The rupiah exchange rate is the rupiah currency when compared in value to the United States dollar or other country currencies. The following is a picture of the US$ exchange rate against the rupiah at Indonesian banks as follows:



Data Source: BPS Indonesia, 2022

Figure 2. Rupiah Exchange Rate Movement against the US Dollar

Based on BPS data, the development of the rupiah exchange rate from 2017 to 2022 has increased. Where is the highest exchange rate in 2022, namely Rp. 15,274 while the lowest exchange rate in 2017 was Rp. 13,548 in 2019 the rupiah exchange rate has decreased which has made the rupiah appreciate against the dollar. In 2020 the exchange rate weakened again, becausein 2019 the rupiah exchange rate was at IDR 13,901 per US dollar. Overall, in 2020 the rupiah exchange rate against the dollar weakened to IDR 14,105 per US dollar. In 2020 the Rupiah was under pressure at the beginning of the pandemic when the Corona Virus (COVID-19) was endemic in Indonesia. Another factor that influences stock prices besides the exchange rate is exports. According toSihombing (2018)Export is the pendulum of goods abroad using a payment system, quality, quantity and other sales terms that have been approved by the exporter and importer. Exports can also be interpreted as purchases by other countries of goods made by domestic companies. The most important factor determining exports is the ability of the country to produce goods that can compete in foreign markets.

Increased exports will provide a positive signal for investors to invest in the IDX. Exports with the JCI show a unidirectional relationship, meaning that every increase in the value of exports will result in an increase in the value of the JCI and any decrease in the value of exports will result in a decrease in the value of the JCI. Thus Exports affect the Composite Stock Price Index. According toAkbar (2015)Changes in the value of exports can affect the income of companies that actively carry out export activities. Changes in company income will be responded to by investors making decisions to sell or buy shares. This selling and buying action will result in a change in the stock price. The value of exports in Indonesia is presented in Figure 3 as follows:

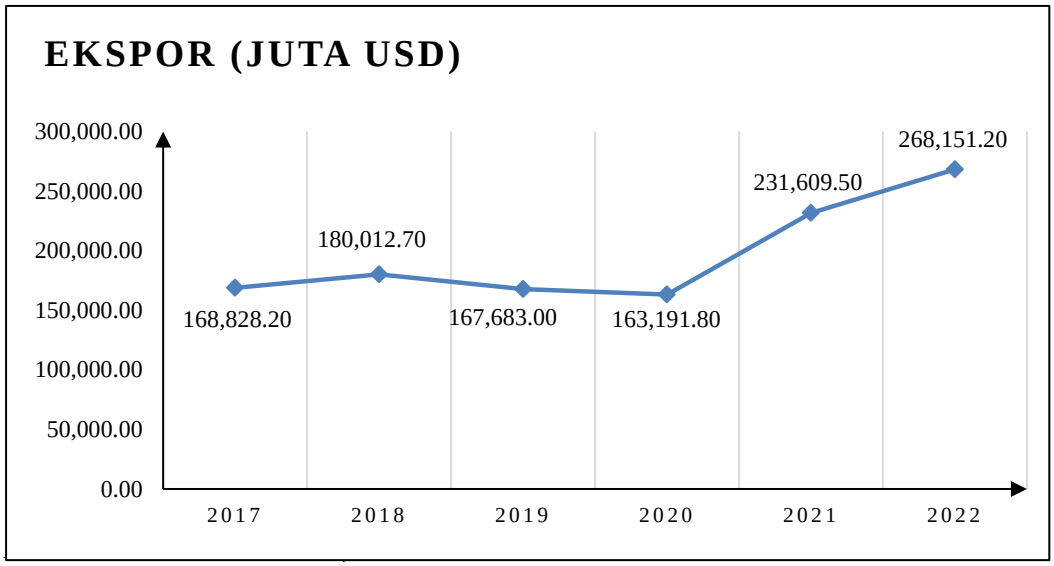


Figure 3. Indonesian Export Movement

The movement of Indonesia's export value from 2017 to 2022 exports has increased, where in 2020 exports have decreased due to the corona virus pandemic (Covid-19).Because the pandemic has caused global and domestic demand to decline. Then in 2021 to 2022 Indonesia's exports will increase to reach 268,151.20 million USD. This research focuses on the exchange rate variable, exports to the Jakarta Composite Index in Indonesia from 1986 to 2022. Furthermore, the second part of this study will discuss the theoretical review. The research method will be discussed in the third part. Then in the fourth part will be presented the results of research and discussion. The fifth section will discuss conclusions and suggestions.

2. PROBLEM FORMULATION

The formulation of the problem in this study can be described as follows:

Exchange rates and exports to the composite stock price index in Indonesia in 1986-2022

3. RESEARCH OBJECTIVES

Based on the background and problems previously described, this study aims to:

Analyzing exchange rates and exports against the composite stock price index in Indonesia in 1986-2022

4. LITERATURE REVIEWS

Composite Stock Price Index

Stocks are one of the most popular financial market instruments. Issuing shares is one of the company's choices when deciding to fund the company. On the other hand, stocks are an investment instrument that many investors choose because stocks are able to provide an attractive level of profit (idx, 2022). The price of shares in the capital market is influenced by the supply and demand for shares. A high increase in the price of a company's stock will cause the demand for the purchase of these shares to decrease because not all investors are interested in buying shares at too high a price. To avoid the emergence of these conditions, the effort that needs to be done by a company is to place the stock price back in a certain range. In other

words, companies must try to reduce stock prices to a price range that attracts investors to buy (Handayani & Yasa, 2017). One of the steps that can be taken by the company so that the shares sold can attract investors, namely by conducting a stock split(Humaira et al., 2022).

The Composite Stock Price Index (IHSG) is a combination of issuer's share prices on the IDX which is an indicator of the capital market in Indonesia in an index. The Indonesia Stock Exchange has the authority to exclude or exclude one or several listed companies from the JCI calculation(Munawar, 2020), this index is a composite index of all stocks listed on the Indonesia Stock Exchange (IDX).(Arifin, 2014). The Composite Stock Price Index (IHSG) is one of the stock market indices used by the Indonesia Stock Exchange (IDX). The Composite Stock Price Index (IHSG) was introduced for the first time on April 1, 1983 as an indicator of stock price movements on the Jakarta Stock Exchange (JSE). This index includes price movements of all ordinary shares and preferred shares listed on the Indonesia Stock Exchange (IDX). The base day for calculating the JCI was August 10, 1982. On that date, the index was set at a base value of 100 and the listed shares at that time totaled 13 shares. The highest intraday trading position ever achieved by the JCI was 6,754.46 points which was recorded on 22 November 2021. The highest closing position ever achieved was 6,723.39 points on the same day.

According to Arafah (2016) inMunawar (2020)The Composite Stock Price Index (IHSG) is a combination of issuer's share prices on the IDX which is an indicator of the capital market in Indonesia in an index. The Indonesia Stock Exchange has the authority to exclude or exclude one or several listed companies from the JCI calculation. Economic theory suggests that the rise and fall of stock prices is commonplace because it is driven by the forces of supply and demand. If the demand is high, the stock price will rise, otherwise if the supply is high, the stock price will fall. In general, there are several factors that affect the ups and downs of a company's stock price. These factors are classified into internal factors and external factors. Shares are proof of equity participation or proof of ownership of a limited liability company in the form of a piece of paper. The size of the ownership is determined by how much investment is invested in the company. From the above understanding it can be concluded that shares are a type of securities that are traded on the Indonesian stock exchange and can determine the size of our ownership in the company where we invest.

Exchange Rate (Exchange Rate)

The currency exchange rate shows the price of a currency when it is exchanged for another currency(Kuncoro, 2010). The exchange rate is a comparison tool for the exchange rate of a country's currency with the currency of a foreign country or a comparison of exchange rates between countries. According toMankiw et al. (2016)Economists distinguish exchange rates into two, namely the nominal exchange rate and the real exchange rate. The nominal exchange rate is the relative price of the currencies of two countries. Meanwhile, the real exchange rate is the relative price of goods between two countries. Foreign currency becomes more expensive, this means that the relative value of the domestic currency decreases. The exchange rate is a comparison of currency values when there is an exchange involving two different currencies. The increase in the price of foreign exchange is called the depreciation of the domestic currency. Foreign currency becomes more expensive, this means that the relative value of the domestic currency decreases. The fall in the price of foreign exchange is called the appreciation of the domestic currency. Foreign currency becomes cheaper, this means that the relative value of the domestic currency increases. Changes in foreign exchange rates are caused by changes in demand and supply in the foreign exchange market.

Ekananda (2014)Exchange rate is the price of a currency relative to other countries' currencies. Exchange rates play an important role in purchasing decisions to translate prices from different countries into one common language. So it can be interpreted that the rupiah exchange rate is the price of the Rupiah currency when translated with the price of the US Dollar as an international currency.

According toSukurno (2011)There are types of exchange rates as follows:

a. *Selling Rate*(Selling Rate)
   The exchange rate determined by a bank for the sale of certain foreign currencies at certain times.
b. *Middle Rate*(Central Rate)
   The middle rate between the selling rate and the buying rate of foreign exchange against the national currency, which has been set by the central bank at a certain time.
c. *Buying Rate*(Buying rate)
   The exchange rate determined by a bank to purchase certain foreign currencies at certain times.

According toKurniawan et al., (2021)In the concept of exchange rate, exchange rate can be defined as the price of foreign currency into domestic or domestic currency. This means that an exchange rate escalation indicates a foreign exchange escalation which has an impact on the depreciation of the rupiah, and vice versa

Export

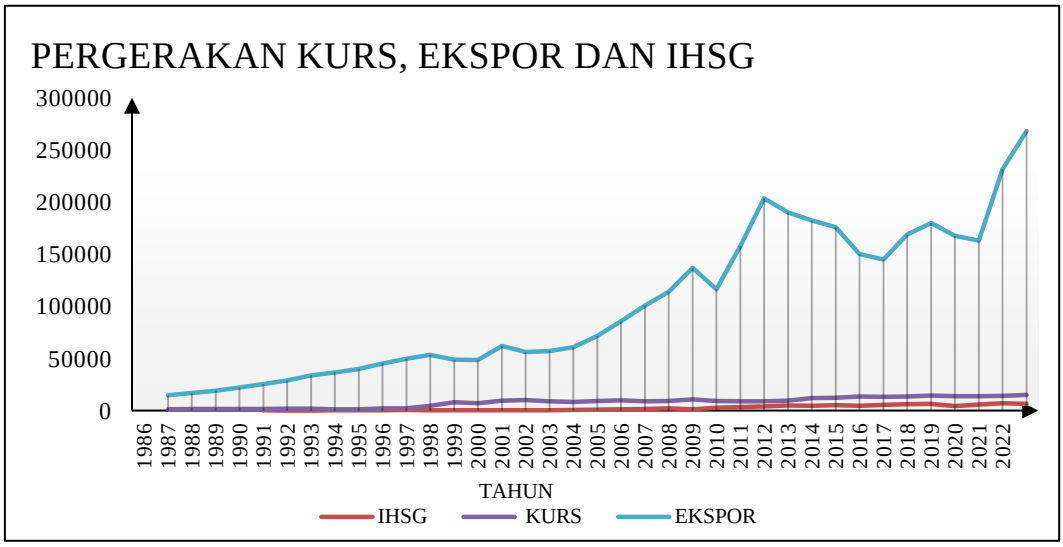
Export is trade by removing goods from inside to outside the Indonesian Customs area by fulfilling the applicable provisions. According toSukurno (2011)Physically, exports are defined as the delivery and sale of domestically made goods to other countries. This shipment will generate a flow of expenditure into the corporate sector, thus aggregate spending will increase as a result of exporting goods and services and in the end this situation will lead to an increase in national income. One of the factors that determine exports is the country's ability to produce goods that can compete in foreign markets. what is meant is that the quality and price of the goods to be exported must be at least as good as those traded in foreign markets. Exports are sales between two countries that are able to exert influence in order to increase domestic demand resulting in large industrial factories, and can provide impetus in the dynamics of foreign trade growth so that later developing countries can compete with developed countries. Romance (2018) in(Ramadhani et al., 2021). Export is an international trade activity that provides a stimulus to require domestic demand which causes the growth of large manufacturing industrial countries, along with a stable political structure and flexible state institutions. Based on the description above, it can be seen that exports reflect trade activities between nations which can provide impetus to the dynamics of international trade growth, so that a developing country is likely to achieve economic progress on a par with more developed countries.

According toSihombing (2018)Exports are classed as autonomous spending because national income is not an important determinant of a country's level of exports. Competitiveness in foreign markets, economic conditions in other countries, protection policies in foreign countries and foreign exchange rates are the main countries that will determine the ability of a country to export abroad. Exports will directly affect national income. However, the opposite relationship does not always apply, that is, an increase in national income does not necessarily increase exports because national income can increase as a result of an increase in household spending, corporate investment, government spending, and the replacement of imported goods with domestically made goods. Export is an effort to sell commodities that our country has to other countries or foreign nations in accordance with government regulations by expecting payments in foreign currencies, as well as communicating in foreign languages Amir (2001) in(Juliansyah et al., 2022).

Figure 4 shows that the development of the Jakarta Composite Index (IHSG) from 1986 to 2022 has experienced a significant increase. It's just that in 2019 the JCI experienced a significant decline, this year the volume of stock exchange transactions tends to decrease along with the JCI correction. The decline in the JCI throughout 2019 was caused by investors

tending to wait and see considering several problems that have befallen a number of asset management companies. The decrease in transaction volume was also caused by the large number of shares moving outside the ordinary or unusual market activity (UMA). The shares affected by UMA suddenly caused a decrease in transactions on the market.

In 2018, previously it had an optimistic target that the JCI would almost be able to reach the level of 7,000, but seeing current conditions in 2019, the target has changed or decreased to 4,538.



Data Source: finance.yahoo.JKSE, BPS Indonesia, 2022

Figure 4. Exchange rate movements, exports and Indonesia's JCI

In 2020 the JCI increased from the previous year with the closing position achieved at the level of 5,985 however the JCI this year was also still lower or decreased from 2021. This was due to capital market pressure caused by 3 external factors, namely the virus outbreak corona, the oil price war, and the reduction in interest rates by the United States Federal Reserve (The Fed). Then followed in 2021 the JCI increased to close to exceeding the optimistic target, namely reaching the level of 7,071. This year Indonesia achieved the best year in the context of the JCI movement because the JCI that year increased with better numbers. In 2022 the JCI will experience a decline, namely at the level of 6,710.79. This happened because a number of factors weakened the JCI in the past week. One of the sentiments is profit taking by foreign investors. This is because the Indonesian stock market is considered to have the best performance when compared to the stock markets of other countries such as the United States (US) and Europe. The decline in the JCI came from the technology sector which was affected by the increase in the benchmark interest rate by the Fed and Bank Indonesia. The aggressive increase in interest rates is said to have had a negative impact on issuers in the technology sector which also contributed to depressed stock prices.

The development of the Rupiah exchange rate against the US Dollar from 1986 to 2022 shows a trend that continues to increase every year, only in 2019 it has decreased. In 2018 the rupiah exchange rate increased to Rp.14,481. The tightening of global liquidity coupled with an increase in the Fed's benchmark interest rate depreciated the rupiah. This year, the rupiah reached its weakest point in history. The factor causing the decline in the rupiah exchange rate this year was global uncertainty which was the main trigger coupled with domestic economic conditions. In 2019 the rupiah exchange rate decreased which made the rupiah appreciate against the dollar. An increase in the supply of money in circulation will result in an improvement or strengthening of the rupiah exchange rate in 2019. This is due to the encouragement of an increased supply of foreign currency, stability in reduced interest rates,

low inflation, as well as the influence of government bonds (sindonews, 2022). Then in 2020 the rupiah exchange rate weakened again, because in 2019 the rupiah exchange rate was Rp. 13.901 per US dollar. Overall, in 2020 the rupiah exchange rate against the dollar weakened to IDR 14,105 per US dollar.

In 2020 the Rupiah was under pressure at the beginning of the pandemic when the Corona Virus (COVID-19) was endemic in Indonesia, not only in Indonesia but has gone global, it's just that in Indonesia in 2019 it hasn't been hit so big but in other countries the COVID pandemic has been enough draw attention. In point-to-point terms the rupiah depreciated against the dollar even though the rupiah depreciated annually, the depreciation of the rupiah was more limited compared to the weakening of several other developing country currencies, such as the South African Randa, Turkish Lira and Brazilian Real. In 2020, the volatility of the price of a currency or the volatility of the rupiah exchange rate increases but is still lower than the average volatility of the region, especially the South African Randa, Brazilian Real and Turkish Lira (liputan6, 2022). In 2021-2022 the exchange rate will experience a significant increase. Global economic turmoil has put the rupiah exchange rate against the United States (US) dollar under pressure throughout 2022. During the turbulence of rising interest rates, strengthening of the dollar, capital outflows and depreciating rupiah, Indonesia is still showing confidence from companies that have IPOs. During 2022, IDR 270 trillion of funds will come from the capital market for IPOs, rights issues, issuance of bonds, and sukuk - both from corporations and the state. On the other hand, by looking at the movement of inflation in the US, there is hope that US monetary policy will subside also creating a relatively positive sentiment.

Interest rate movements cause turmoil from the stock market volatility index (VIX) every time the US announces or delivers its policies, followed by volatility in the stock and bond markets. a drastic increase in mid-2022, volatility in bonds, the exchange rate, the market jumped big. 2022 was not a year of good, full of turmoil; commodities, stock prices, bond prices, exchange rates experienced simultaneous fluctuations. Exchange rate depreciation is inevitable throughout 2022. But Indonesia is not alone, many other countries' exchange rates are also experiencing depreciation. The ministry noted that the performance of the rupiah exchange rate was still well maintained, depreciating year to date or -9.1%, compared to several emerging market countries such as India, the Philippines and Turkey. Indonesia's exchange rate is relatively more moderate or on par with many countries. The development of exports from 1986 to 2022 has increased. However, throughout 2019 Indonesia's exports were recorded at US$ 167,683.00 million. Indonesia's export value from January to December 2019 decreased compared to the same period in 2018. This was due to the 10-day holiday season and a decrease in oil and gas and non-oil and gas exports. This decline in exports was due to a decrease in crude oil exports and decreased gas exports. The decline in exports in 2019 was also inseparable from the 10-day holiday which had an impact on export activity violations.

The weakening of export performance throughout 2020 compared to the previous year was caused by the Corona Virus pandemic (COVID-19). Because the pandemic has caused global and domestic demand to decline. In 2021 the value of exports will increase, this is recorded, an increase in Indonesian exports on a monthly basis is driven by an increase in non-oil and gas and oil and gas exports. On an annual basis, non-oil and gas exports have increased on a monthly basis and even increased on an annual basis by US $ 231,522.50 million. In 2021-2022 exports will continue to increase sharply, both oil and gas and non-oil and gas exports, reaching USD 231,609.50 million in 2021. Then in 2022 it will be USD 268,151.20 million.

Conceptual framework

According to (Ghozali, 2016) the conceptual framework is a relationship or connection between one concept to another from the problem to be studied. This conceptual framework is

used to relate or explain at length about a topic to be discussed. From the conceptual framework, it can be described that exchange rates and exports will have a positive or negative and significant impact on the Jakarta Composite Index. So that each of these variables will have a direct effect on the Indonesian Composite Stock Price Index.

Research Hypothesis

The hypothesis is a temporary allegation, that the hypothesis is the answer to research based on theoretical studies. Based on the researcher's framework above, the hypothesis in this study is as follows:

H10: The exchange rate is thought to have a negative effect on Composite Stock Price Index (IHSG)
H1a: The exchange rate is suspected of having a positive effect on the Jakarta Composite Index (IHSG)
H20: Exports are suspected of having a negative effect on the Jakarta Composite Index (IHSG)
H2a: Exports are suspected of having a positive effect on the Jakarta Composite Index (IHSG)
H30: Exchange rates, exports are thought to have a negative effect on the composite stock price index (CSPI)
H3a: Exchange rates, exports are thought to have a positive effect on the composite stock price index (CSPI)

5. RESEARCH METHODS

Research objects and locations

The object of this study is the composite stock price index (IHSG) as the dependent variable, while the exchange rate and exports are the independent variables. The location of this research was conducted in Indonesia with a period of 36 years, namely from 1986 to 2022.

Data and Data Sources

This study uses secondary data with the type of time series data taken from the period 1986 to 2022. The data is obtained in the form of written information via the Indonesian Stock Exchange (IDX) website at www.idx.co.id, www.bps.go.id, www.bi.go.id, andwww.finance.yahoo.com.

Variable Operational Definitions

a. Composite Stock Price Index (Y) The Composite Stock Price Index is one of the stock market indices used by the Indonesia Stock Exchange. The data in this study were taken from finance.yahoo.JKSE (2022). The unit used is in the form of billions of Rupiah.
b. Exchange rate (X2) Exchange rate (exchange rate) of a foreign currency is the price of a country's currency against other foreign countries. The data in this study were taken from the Central Bureau of Statistics (2022), while the unit used is Rupiah.
c. Export (X3) Export is an activity of transporting goods or commodities from one country to another. The data in this study were taken from the Central Bureau of Statistics (2022), while the unit used is in the form of Millions of USD.

Data analysis method

This study uses the Autoregressive Distributed Lag (ARDL) regression model to see the effect of the independent variables, namely the consumer price index, inflation, foreign direct investment on the dependent variable, namely Indonesia's gross domestic product in 1986-2022. The regression model is as follows:

LIHSGit = LNTX1it + LEXX2it

Information:

LIHSG	:Composite Stock Price Index (Rp)
LNT	:Exchange Rate (IDR)
LEK	:Exports (million US$)

In general, the steps that will be carried out for econometric analysis using this method are as follows: Testing the stationarity of variable data in the research model, both at the level and the first difference level, Optimum Lag Determination Test, Autocorrelation Test, Cointegration Test, ARDL Model Estimation and ARDL Model Stability Test

Stationary Data Test

Testing the stationarity of data in research using dynamic models is very important, the reason is to avoid the presence of spurious regression in estimating a model. This stationarity test is also often referred to as the unit root test. There are several ways to do a unit root test. Among them are Augmented Dikey Fuller and Philips-Perron. Both identify the existence of a unit root as the null hypothesis. In this study the unit root test will be carried out using the Philips-Perron (PP) method. Testing with the Philips-Perron (PP) method is a development on Dickey Fuller (DF) by allowing the assumption of an error distribution. In the DF test, the assumption is that there are homogeneous and independent errors.

Optimum Lag Determination Test

Determination of the optimum lag is very important in the ARDL model. In choosing the lag length of the variables included in the ARDL model, it is desirable that the lag length is sufficient so that the dynamics of the system to be modeled can be achieved. If the lag is too long, it will result in more parameters that must be estimated so that it can reduce the ability to reject H0 because too many additional parameters will reduce the degrees of freedom. Determining the optimal lag length can take advantage of some information, namely by using the Akaike Information Criterion (AIC) and Schwarz Criterion (SC). The criteria that have the smallest AIC and SC values are the lags used.

Autocorrelation test

Autocorrelation is defined as the correlation between members of an observation series arranged according to time (time series) and according to space (cross-section). With this test it is assumed that $\alpha = 5\%$. So when the Chi-Square probability value > α, it means that it fails to reject H0 or there is no autocorrelation. But if the Chi-Square probability value < α, it means that H0 is rejected or there is autocorrelation, which must then be cured first. Besides that, it can also be seen from the Obs*R-square value. When the Obs*R-square probability value > α, it means that there is no autocorrelation. Then if the Obs*R-square probability value < α, it means that there is autocorrelation

Contegrity test

The cointegration test is carried out to test whether the non-stationary variables at the data level are cointegrated between one variable and another. This cointegration is formed

when a combination of non-stationary variables produces a stationary variable. The cointegration concept introduced by Engle and Granger in 1987 requires that eth must be stationary at I(0) to produce a long-run equilibrium. In this study the cointegration test was carried out using the Bound Testing Cointegration method with the ARDL approach.

ARDL Model Estimation

As already mentioned, the advantage of ARDL is its ability to detect long-term and short-term dynamics. In the general ARDL model in equation (1) is the equation for short-term relationships.

$$\sum_{i-1}^{n} \beta_1 \Delta y_{t-1} + \sum_{i-0}^{n} \delta_1 \Delta_{t-1}$$

As for long-term relationships indicated by:

$$\varphi 1 yt-1 + \varphi 2 xt-1 + \mu t$$

The method to be used is the Autoregressive Distributed Lag (ARDL) approach. The ARDL model was chosen because using ARDL will be more effective in seeing the effects of Y and X, as well as the past Y variables on present Y.

ARDL Stability Test

The ARDL stability test in this study used the CUSUM test with a 95% confidence level. CUSUM test results for the ARDL model in this study. The stability of the model is determined from the position of the blue CUSUM line between the two red 5% significance lines.

6. RESULTS AND DISCUSSION

Data Stationarity Test Results

Based on Table 1. Philips-Perront Unit Root Test it can be concluded that the 3 variables in this study are stationary at the first different, namely the composite stock price index variable, exchange rate and exports, but there is 1 variable, namely the exchange rate is stationary at level, level, first different and second different by using constant regression (Intercep) at the level of 1%, 5%, and 10%. Where the probability value is less than 0.05 (Prob <0.05). This means that all variables can be continued testing using either the first different or the second different. For this study using the first different.

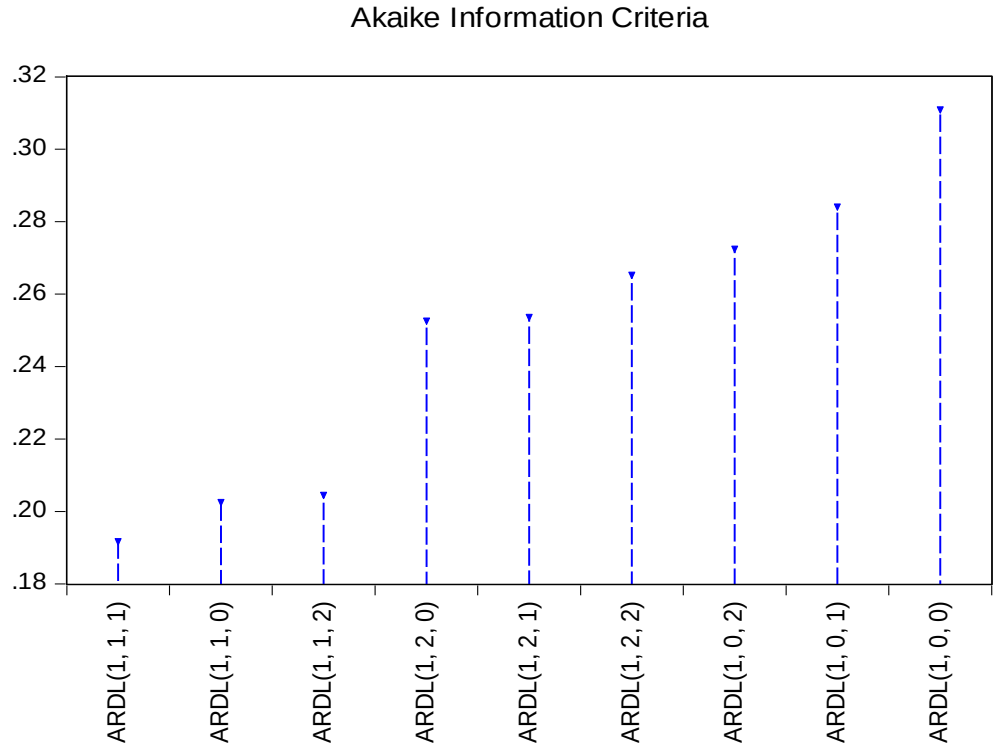
Table 1. Data Stationarity Test Results

Variable	Unit Root	PP test	Criteria Values	Prob. pp	Information
JCI	Levels	-0.475971	-2.957110	0.8833	Not stationary
	1st difference	-7.551270	-2.960411	0.0000	stationary
exchange rate	Levels	-6.101978	-2.945842	0.0000	stationary
	1st difference	-18.23344	-2.948404	0.0001	stationary

Export	Levels	-1.400895	-2.945842	0.5710	Not stationary
	1st difference	-5.286906	-2.948404	0.0001	stationary

Source: (Data processed, 2022)

Optimum Lag Determination Test Results



Source: (Data processed, 2022)

Figure 5. Optimum Lag Determination Test Results

Based on Figure 5. the results of the Akaike Information Criteria (AIC) calculation, the optimum lag is obtained is lag 1. This occurs because in calculating the AIC value, the shortest line occurs at the ARDL point (1,1,1). So it can be concluded that the optimum lag used in the ARDL model is lag 1.

Autocorrelation Test Results

Table 2. Autocorrelation Test Results

Breusch-Godfrey Serial Correlation LM Test:

F-statistics	0.841201	Prob. F(2,24)	0.4435
Obs*R-squared	2.096255	Prob. Chi-Square(2)	0.3506

It can be seen in Table 2 above that the autocorrelation test results show the prob value. Chi-Squared = 0.3506 > 0.05. So it can be concluded that the error in the model does not experience serial correlation problems.

Cointegrity Test Results

Based on Table 3. The cointegration test results of the cointegration test using the Bound test approach show the occurrence of cointegration where the F statistic value is 4.3892862 from I0 Bound, where the F statistic > I0 bound at both the 10% and 5% confidence level, namely the JCI variable (the dependent variable), exchange rates and exports. So it can be interpreted that there is cointegration of the variables in the model tested, so that there is a short-term and long-term balance of these variables.

Table 3.Cointegration Test Results

F-Bounds Test Null Hypothesis: No levels relationship

Test Statistics	Value	Significant.	i(0)	I(1)
			Asymptotic: n=1000	
F-statistics	4.389286	10%	2.63	3.35
k	2	5%	3.1	3.87
		2.5%	3.55	4.38
		1%	4.13	5
Actual Sample Size	32		Finite Samples: n=35	
		10%	2,845	3,623
		5%	3,478	4,335
		1%	4,948	6028
			Finite Samples: n=30	
		10%	2,915	3,695
		5%	3,538	4,428
		1%	5.155	6,265

Source: (Data processed, 2022)

ARDL Estimation Results

Table 4.

Short Term ARDL Model Estimation Results

Variables	coefficient	std. Error	t-Statistics	Prob.
D(LKURS)	-0.604906	0.190930	-3.168205	0.0039
D(EXPORT)	0.480188		1.687937	0.1034
CointEq(-1)*	-0.520536	0.117628	-4.425265	0.0002

Based on Table 4. Short-term test results can be formulated as follows:

A constant value of -0.520536 means that if the exchange rate and exports are constant in the short term, the JCI will increase by -0.520536% in the following year. The exchange rate variable

is -0.604906 meaning that if the exchange rate increases by 1%, the JCI will increase by -0.604906% in the following year. the exchange rate has a negative and significant effect because the probability value is 0.0039 <0.05. The export variable is 0.480188 meaning that if exports increase by 1%, the JCI will decrease by 0.480188% in the following year. exports have a positive but not significant effect because the probability value is 0.1034 > 0.05.

The long-term processing produces processed long-term estimation results in table 5 as follows:

Table 5. Long-Term ARDL Model Estimation Results

Variables	coefficient	std. Error	t-Statistics	Prob.
LKURS	-0.293690	0.199940	-1.468891	0.1539
LEEXPORT	1.939123	0.227303	8.531021	0.0000
C	-11.98979	1.543016	-7.770359	0.0000
EC = LIHSG - (-0.2937*LKURS + 1.9391*LEXPORT -11.9898)				

Source: (Data processed, 2022)

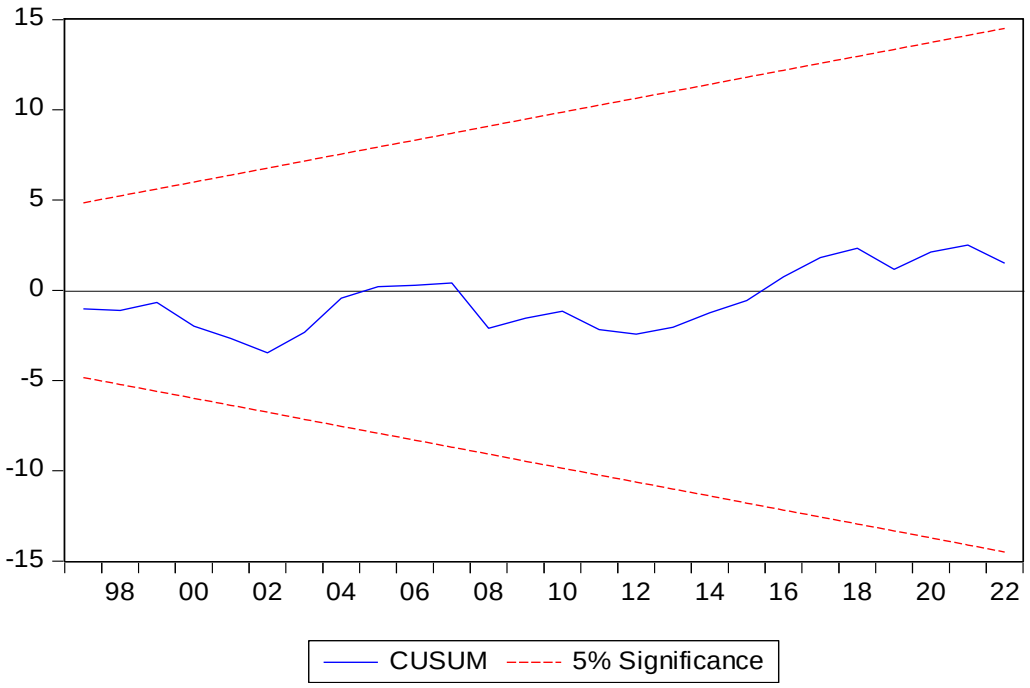
Based on Table 5, the long-term test results using the ARDL model in the table can be formulated as follows:

A constant value of 11.98979 means that if the exchange rate and exports are constant in the long term, the JCI will increase by 11.98979% in the following year. The exchange rate variable is -0.293690 meaning that if the exchange rate increases by 1%, the JCI will decrease by -0.293690% in the following year. the exchange rate has a negative and insignificant effect because the probability value is 0.1539 > 0.05. The export variable is 1.939123 meaning that if exports increase by 1%, the JCI will decrease by 1.939123% in the following year. exports have a positive and significant effect because the probability value is 0.0000 > 0.05.

ARDL Stability Test Results

a. QUSUM

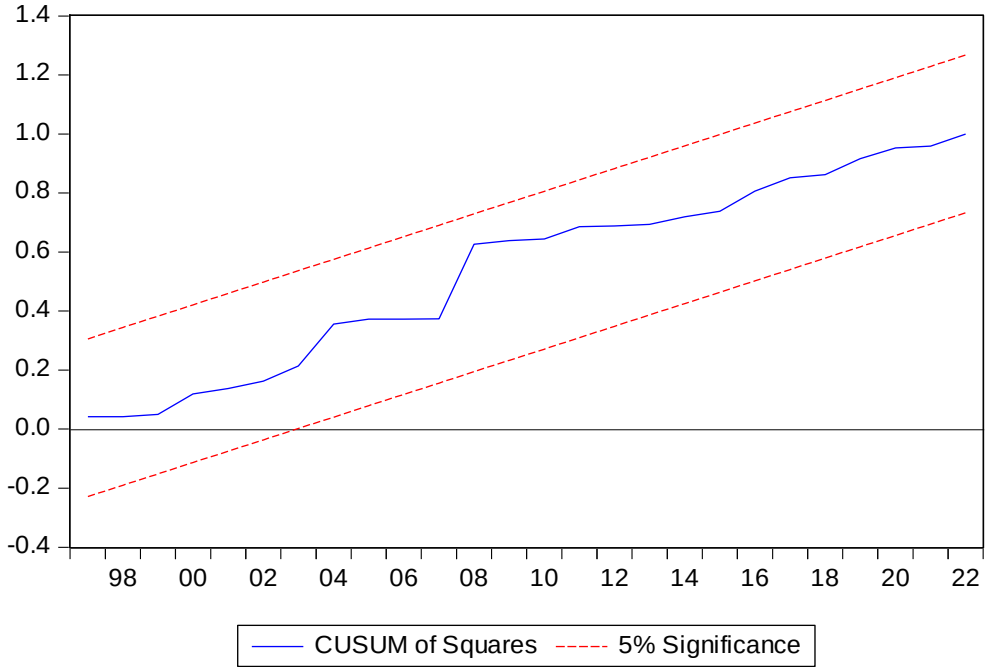
Based on Figure 6, the results of the CUSUM Test can be explained, namely the plot of the Wr quantity is not above the limit line at a significant level of 5%, the plot forms a linear line.



Source: (Data processed, 2022)

Figure 6. CUSUM Test Result

b. QUSUMQ



Source: (Data processed, 2022)

Figure 7. CUSUMQ Test Results

In Figure 7, the results of the CUSUMQ test can be explained, namely the plot of the Sr quantity is not above the cutoff line at a significant level of 5%, the plot forms a linear line. Based

on the results of the two model stability tests above, it can be concluded that the regression coefficients are stable.

DISCUSSION

Based on the results of the data processing above, it shows that in the short term, the exchange rate is 0.604906 with a probability of 0.0039 <0.05 where the exchange rate has a positive and significant effect on the Indonesian JCI. As for the long term, the exchange rate has a negative and insignificant effect on the Indonesian JCI, namely -0.293690 with a probability of 0.1539 > 0.05. An exchange rate that is not significant is due to the instability of a country's currency exchange rate which can lead to a decrease in the level of investor confidence, which can cause a decrease in the JCI. In fact, if the dollar exchange rate increases, it means that economic conditions are in a bad condition, so investors are afraid to invest in stocks. When the Rupiah exchange rate decreases, then the profits of the company will decrease so that the level of profit required by investors is not as they expected. Reduced investors make transactions in the form of shares, will result in lower stock prices. Conversely, if the dollar exchange rate against the rupiah weakens, investors will invest in stocks because at that time the economic condition is in a good condition. This research is in line with the results of research conducted bySinay et al. (2018),Zaretta & Yovita (2019),Sunardi et al. (2017),Sumantri & Latifah (2021),Akbar (2015)AndNurwahida & Trilogy (2020).

Based on the results of the data processing above, it shows that in the short term, exports have a positive but not significant effect on the Indonesian JCI, which can be seen from the value of 0.480188 with a probability of 0.1034 > 0.05. As for the long term, exports have a positive and significant effect on the Indonesian JCI, namely 1.939123 with a probability of 0.0000. Significant exports in this study mean that when there is an increase, it provides a good stimulus for the JCI, this is also due to good management of exports so that the exports obtained can make a good contribution to the composite stock price index in Indonesia. This research is in line with the results of research conducted byGoddess (2022),Primary (2020),Sumantri & Latifah (2021)AndAgustina & Reny (2014).

7. CONCLUSIONS

Conclusion

From the regression results in this study, the following conclusions can be drawn:

1. In the short term, the exchange rate variable has a negative and significant effect on the Indonesian JCI. In the long run the exchange rate variable is negative and insignificant to the Indonesian JCI.
2. In the short term, the export variable has a negative and positive effect but not significant to the Indonesian JCI. In the long term, the export inflation variable has a positive and significant effect on the Indonesian JCI.

Suggestion

Referring to these conclusions, several suggestions can be drawn:

1. to make the right policies when macroeconomic fundamentals, particularly the exchange rate and exports, experience shocks. In addition to macroeconomic fundamentals, the condition of stock price indices for Indonesia's export destination countries also deserves special attention from the United States, Japan, China and Singapore.
2. For Academics, this research is expected to be used as study material and additional knowledge for students of the Faculty of Economics, especially the Department of Development Economics who wish to conduct further research and provide input for academics and researchers who are interested in discussing the same topic.

3. For investors, those who wish to invest in the capital market should pay attention to the variables that affect the Jakarta Composite Index such as exchange rates (exchange rates) and exports because the results of this study show that these three variables affect the Composite Stock Price Index in Indonesia.
4. For researchers with similar topics, it is recommended to conduct further studies by including other independent variables, such as gross domestic product, unemployment rate, gold prices, foreign exchange reserves, and external factors originating from abroad such as world economic growth, world oil prices and others.

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