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EFFECT ANALYSIS OF FDI, EXPORTS, EXCHANGE RATES, ON INDONESIA'S ECONOMIC GROWTH 1991-2020

Erika[1*], Hadi Sasana[2]
[1.2]Universitas Tidar, Indonesia
E-mail: [1)] erikahaverius9@gmail.com

Abstract

The purpose of this study is to examine the impact of foreign direct investment (FDI), exports, and the exchange rate on Indonesia's economic growth from 1995 through 2020. This research is quantitative descriptive in nature. The study employs time series data and eviews for testing. Economic growth is the dependent variable, whereas foreign direct investment (FDI), exports, and exchange rates are the independent factors. This study employs Autoregressive Distributed Lag (ARDL) regression, and a long-term and short-term association is present. Foreign Capital Investment (FDI) is the dominant factor that affects economic growth and is not significant using = 5, while the relative export variable has a significant positive effect on economic growth, and the exchange rate variable affects economic growth positively but is not statistically significant.

Keywords: *Economic Growth, Exchange Rate, Export, Foreign Direct Investment*

1. INTRODUCTION

Economic development relies heavily on economic growth as a leading indicator of success (Nopiana et al., 2022). An economic development cannot be separated from how economic growth occurs, there are several economic fields that need to be developed in making it happen. Economic development in Indonesia needs to catch up with existing lags and this requires large funds so that Indonesia is able to compete with developed countries both regionally and globally.

Indonesia's development capital that must be issued by the domestic government as funds for development is not small, but these funds are not yet available. Indonesia has not been able to provide capital for such development (Oktaviana, 2016). The economic development that needs to be developed cannot be separated from the goal of achieving an increased standard of living for the people of Indonesia, with the formation of wide employment opportunities and efforts to equalize income for the community and the benchmark is economic growth (Prawira et al., 2019).

The current economic openness in Indonesia is an opportunity that must be exploited; taking into account the structural potential of the country, the government must make an effort to attract foreign investors who wish to invest; consequently, a rise in Foreign Direct Investment will be accompanied by a rise in Foreign Direct Investment (FDI). A nation's economic expansion will accelerate. As according to Law No. 25 of 25 of 2007, foreign investment is defined as an investment activity to do business in the Republic of Indonesia that is carried out or provided by parties outside the region who are foreign investors. When the performance of the degree of economic openness increases, the trade sectors in the country, be it the industrial sector, infrastructure development will increase so that it can attract investors to invest in Indonesia (Diputra, 2017). It can be said that investment and the degree of economic openness are related to each other. The flow of FDI is expected to increase national production capacity. An

increase in the income of a country will result in increased economic growth. Economic openness is related to several international relations, in that economic growth with international trade is also quite large in increasing capital flows, both in and out of capital. The flow of FDI is expected to increase national production capacity. An increase in the income of a country will result in increased economic growth. Economic openness is related to several international relations, in that economic growth with international trade is also quite large in increasing capital flows, both in and out of capital. The flow of FDI is expected to increase national production capacity. An increase in the income of a country will result in increased economic growth. Economic openness is related to several international relations, in that economic growth with international trade is also quite large in increasing capital flows, both in and out of capital.

Foreign investment is a positive thing to be developed in the current economic openness, because it becomes an impetus in meeting the shortage in savings that can be collected from within the country, increasing foreign exchange reserves, and increasing government revenues and also developing regulatory expertise for the economy for the country to receiving the foreign investment. Economic openness also encourages activities related to international trade through exports, indirectly, economic openness that is carried out has an effect on increasing a country's revenue. Indonesia's natural resources are an opportunity, and each country has different natural resources.

Comparative advantage in the differences possessed by these countries will then become a channel in the exchange of commodities between one country and another. Export is an activity carried out by exporters as a form of buying and selling. The actual national income of each country can be used to measure the economic growth attained by each nation. And it may be argued that the country has experienced a rise in economic growth if the quantity of exported goods or services has increased over time and the total value of exports is more than the total value of imports. Buying and selling transactions that occur in international trade such as exports cannot be separated from foreign exchange payments because there are differences in currency values (Stievany & Jalungono, 2022). So with the exchange rate will facilitate transactions carried out by international countries. In the exchange rate there is also a system that regulates the mechanism. The current exchange rate system in Indonesia is a floating currency system in which exchange rates can vary and the currency is controlled by market forces, both supply and demand; currency exchange rates tend to fluctuate in response to market factors. Therefore, the exchange rate, which represents the value of exchange operations, has an effect on economic growth. Thus, the purpose of this study is to examine the impact of FDI, exports, and currency rates on Indonesia's economic growth from 1991 to 2020.

2. LITERATURE REVIEW

2.1. Economic Growth

Economic growth is a phenomenon that occurs in a system of economic activity in which the production of goods and services that exist and circulate in the community continues to increase and is accompanied by a rise in the prosperity of the community. In general, economic growth theories are divided into two categories: the classical economic growth theory and the modern economic growth theory. Classical economic growth theory, which is founded on the belief and efficacy of free market mechanisms. This hypothesis was developed by classical economists, such as Adam Smith and David Ricardo.

Second is contemporary economic theory. Harrod-growth Domar's theory is one of the contemporary theories of economic growth; it highlights the significance of investment generation for economic growth. Investment not only affects aggregate demand but also aggregate supply as a result of its effect on production capacity. Investment is positively correlated with economic growth. Investment will boost the capital stock in the long run.

According to Untoro in Yuniarti et al., (2020) Economic growth is the expansion of economic activities that leads to an increase in the quantity and quality of products and services generated in a community, hence enhancing its long-term prosperity.

2.2. Economic Growth Theory

2.2.1. Classical Growth Theory

As according to Adam Smith, David Ricardo, Malthus, and John Stuart Mill who formulated this theory, various factors can influence economic growth, including the number of citizens in a country, the amount of capital goods, land area and natural resources, and the technology employed. The focus of this theory is the influence of population growth on economic expansion. This is connected to the optimal population theory, which relates the per capita income to the overall population. Meanwhile, there is no change in terms of geographical area, natural resources, or technology. But if the population continues to grow, the rule of diminishing surplus yield will influence the production function so that marginal production will decline, leading to a situation in which per capita income equals marginal production (Kurz, 2010)

2.2.3. Neoclassical Growth Theory

The evolution of neoclassical economic growth theory by Robert Solow, Edmund Phelps, Harry Johnson, and JE Meade since the 1950s. In this theory, economic growth is dependent on the increase and supply of factors of production, and the level of technological progress has an impact on the economy's ability to continue to expand at full employment, and the large capacity of the tools as capital will be fully utilized in the future (Regina, 2022).

2.2.4. Harrod-Domar Growth Theory

The theory of the results of the development of macro growth theory by John Maynard Keynes. Basically, every economy has to make reserves or save from some of what it gets, namely its national income as a step to add or replace capital goods. As a driver of the process of economic growth, new investment is needed as a net addition to the capital stock or reserves.

2.2.5. Schumpeter's Theory

The innovation that is stressed is technological advancement that is determined by the community's entrepreneurial spirit, which can recognize possibilities and be willing to take risks when launching new firms and expand current businesses to become economic growth boosters (Yuniarti et al., 2020)

2.3. Economic Openness

Currently, in general what happens to the economy adopted by countries in the world is an open economy and also a closed economy. An open economy is the economy of a country that is widely involved in trade between countries through international trade activities which include exports and imports. International trade is one of the sources of a country's revenue in the form of foreign exchange. One of the developing countries which in running its economy adheres to an open economy is Indonesia. The role of local (domestic) and foreign parties cannot be disentangled from the stability of economic growth. In order to realize an equal economic development in Indonesia, substantial funds and investment financing are required. Insufficient finance hinders the economic development of a country. Investments are one source of funding to support the limited burden of building the Indonesian economy (Thirafi, 2013) in (Sari & Baskara, 2018)).

In the current era of globalization, economic openness has enabled the flow of capital from one country to another. Economic openness is characterized by the elimination of trade barriers in the form of tariffs and non-tariff barriers, as well as the increased movement of money between nations. Economic openness leads to the opening of trade and financial markets. Economic openness benefits all participating nations. The advantages of economic openness through trade are the expansion of market access, the improvement of economic efficiency and competitiveness, and the expansion of employment opportunities.

2.4. Foreign Direct Investment

Direct investment exists because of economic openness, foreign direct investment becomes an investment provided by a foreign country, based on its nature the capital provided is one of the factors of production, or an input needed in an effort to produce production output. In the context of the country, the increase in capital from the form of foreign direct investment is expected to help a shortage of existing capital.

Sari & Baskaram (2018) defining foreign direct investment is investment owned and managed by foreign parties (foreigners). Foreign direct investment is also known as Foreign Investment (PMA). Foreign direct investment is a business activity or procurement of equipment and production facilities, such as opening factories, buying land, buying raw materials, bringing in machinery, and others that are carried out using funds or investment money directly.

Foreign Direct Investment is an investment that involves the investor directly in the implementation of the business operations carried out (Jufrida et al., 2016). Foreign Direct Investment is a form of international capital movement in which a business from one country begins or extends operations in another. Therefore, not only is there a transfer of resources, but there is also the imposition of control over foreign enterprises. Foreign Direct Investment or foreign direct investment is mostly carried out by countries that have no boundaries and have the potential for economic growth (Madura, 2006).

FDI is needed to close the gap between investment and savings in developing countries. In essence, according to Zaenuddin (2009) foreign investment has more benefits in driving the economic growth of a country because it does not cause foreign debt or repayment obligations. Foreign direct investment is able to have an influence on growth and better economic development. Investment can be regarded as the investment or expenditure of investors or corporations to purchase capital goods and production equipment in order to boost the economy's ability to generate products and services.

Some economists say that capital is an influential factor in economic growth. Therefore, the government must try to find sources of capital. For example, by bringing in capital from abroad; such as Foreign Debt and Foreign Investment. In increasing economic growth, an additional capital is needed. This additional capital is in the form of investment and savings. The dynamics of investment influence the rate of economic growth, which reflects the pervasive slow development.

The amount of Gross Fixed Capital Formation in a particular year reflects the amount of physical investment made in that year (PMTB). PMTB involves the acquisition, manufacture, and purchase of new and old capital goods from domestic and foreign sources. Also included is the repair of capital goods that extends their service life or increases their resale value through the selling of used capital goods. Capital goods have an economic life of more than one year, a high value relative to their output, and are reusable.

2.5. Export

Commodities that exist in each country have differences, this is influenced by different characteristics, namely natural resources, climate, geography, economic structure and also social structure. In addition, this will affect the composition of the costs required to produce a production, both quality and quantity of a product. Therefore, international trade occurs because of the interdependence of these needs. Each country has its own advantages and disadvantages, hence the need for trade transactions with foreign countries. Export is an activity of trading transactions with foreign countries which can be said that export activities are transactions of selling and buying goods or services.

Exports will have a direct impact on national revenues. However, the reverse relationship does not always hold: a rise in national income does not necessarily lead to a rise in exports. This is because national income can rise due to an increase in household spending, company investment, government spending, and the substitution of imported goods with domestically produced goods (Sukirno in Benny, 2013). Characteristics of export activities:

2.5.1. Increase in domestic prices in export products

Due to the dependence on the elasticity of demand for domestic items, the increase in domestic prices will result in both an increase and a fall in the exchange rate. And if it is elastic, there will be uniformity of products from other countries, besides the increase in domestic prices causes the demand for these products to decrease. The rupiah exchange rate depreciated against other currencies due to the declining demand for the domestic currency. If it is inelastic which is caused by the uniqueness of domestic products compared to other countries' products, it causes the demand for the domestic currency, namely the rupiah to increase, which will encourage the rupiah exchange rate to appreciate.

2.5.2. The increase in the price of foreign products

Import where the increase in export products is inseparable from import activities where the increase in domestic export products, it depends on the elasticity of demand for imported products. This will affect the demand for domestic currency will increase, so it will experience appreciation. Likewise, if the demand for imported products is inelastic,

it will cause the demand for the domestic currency to decrease which causes the domestic currency to depreciate.

2.5.3. Changes in the overall price level

This will affect not only the prices of export and import items, but also the prices of all goods in a country, causing inflation. If inflation occurs, there will be a shift in the prices of the items produced, as well as a quick increase in the prices of goods relative to other countries. The price of domestic goods will climb, while the price of overseas goods will decrease, causing more customers to crave and select foreign products. This will result in a drop in the demand for domestic currency and an increase in the demand for foreign money, so weakening or depreciating the domestic currency exchange rate.

2.5.4. Increased capital flow

The increase that occurs in capital flows will affect the exchange rate, because the flow of investment funds results in an appreciation of the currency value of the capital-importing country and will result in depreciation of the currency value of the capital-exporting country. This applies in the short-term and long-term and is also driven by the motives of the financier itself.

In short-term capital flows, the motive of the financier is usually influenced by interest rates and speculation about the exchange rate of a country's currency. Meanwhile, in the long-term flow of capital, the motive of the financier is influenced by the long-term expectations of the profits to be obtained in a country and the long-term value of its currency.

2.5.5. Structural changes

Changes that occur in the structure referred to as changes in the cost structure, the discovery of new products, or other things that can also affect a country's comparative advantage.

Exporters and importers of a traded commodity are separated by national territorial boundaries, different currencies between the buying and selling countries, closer inter-state relations between each party so that they already have the qualifications of trading partners to continue to work together to continue to supply commodities and the ability to pay according to the contract agreement .

Different government policies between buyers and sellers in the fields of international trade, monetary, foreign exchange traffic, labeling, taxation. As well as terminology in trade transactions as well as different languages between countries, transactions are usually carried out in popular foreign languages such as English.

Export activities are something that emphasizes transaction costs which are more directed to having a fixed cost component, as well as improving export competitiveness by doing good marketing to achieve economic growth.

The difference between a country's total exports and total imports is its net exports. If the value of net exports is positive, the value of exports is larger than the value of imports, and if it is negative, the value of exports is less than the value of imports (Ginting, 2017).

The role of exports has no effect on economic growth, according to the neoclassical theory of exogenous economic growth. According to neoclassical theory, economic growth is only controlled by nodal production input elements such as capital, labor, and technological advancement.

In addition, in post-neoclassical theory, it is referred to as an endogenous economic growth theory, which explains why both international commerce, exports and imports, have a beneficial impact on output and economic growth.

2.6. Exchange Rate

In order to undertake commercial transactions with foreign nations, exchange rates are necessary. The existence of exchange rates as a series of processes for transactions due to currency differences between countries. For example, Indonesia wants to transact with the United States. So Indonesia must do currency exchange and vice versa. The exchange rate can be defined as the price of a domestic currency relative to the currencies of other countries. The exchange rate represents the cost of one currency relative to another.

In an open economy, the exchange rate is one of the most important factors, as it has a significant impact on the current account balance and other macroeconomic indicators. The exchange rate is the price of one currency relative to the currency of another country; it is also the price of an asset or commodity (Krugman, 2005).

As noted by Mankiw, 2007 in Istiqomah (2011) that in economics, the exchange rate of a country's currency can be separated into its actual and nominal components. While the real exchange rate is the amount of money used when exchanging goods or services from one country for those of another, the nominal exchange rate refers to the amount of money used when exchanging goods or services from one country for those of another. In the actual exchange rate, economic actors can trade the output of one nation with the output of other nations. Several variables, both transient and chronic, create fluctuations in supply and demand in currency rates.

3. RESEARCH METHODS

This study employs time series data, which are time series data spanning multiple time periods. The data utilized is derived from secondary data sources. The dependent variable, economic growth, and three independent variables, foreign direct investment (FDI), exports, and exchange rates, are utilized in this study. The data utilized for the period 1995-2020 comes from the Central Statistics Agency, Statistics Indonesia, and the World Bank. Autoregressive Distributed Lag (ARDL) regression analysis is used to estimate the impact of FDI, exports, and currency rates on Indonesia's economic growth. This regression model is used to see whether the model has a long-term and short-term relationship, Therefore, a co-integration test was carried out to see this relationship. In looking for cointegration between variables in the model that have different stationarity with Bound testing. Variables that will be at the destination by entering different lags, both in the long and short term for the best model results. The ARDL estimation model for economic growth in the short term is as follows:

$$\Delta Y_t = a + \sum_{i=1}^{n} Y_i \, \Delta Y_{t-1} + \beta_0 \Delta X_t + \sum_{j=1}^{k} \sum_{i=1}^{n} \beta_{ji} \Delta X_{ji} - e_t$$

Description:

i = number of lags

j = number of independent variables

4. RESULTS AND DISCUSSION

4.1. Research Results

4.1.1. Descriptive statistics

The minimum value for the economic growth variable is -13.13000, the maximum value for the economic growth variable is 8.220000, the mean value for the economic growth variable is 4.875667, and the standard deviation for the economic growth variable is 3.666205.

Minimum value for the FDI variable is -2,757,440, maximum value for the FDI variable is 2,916,115, mean value for the FDI variable is 1.259565, and standard deviation value for the FDI variable is 1.397099.

The minimum value of the export variable is 17.16834, its maximum value is 52.96813, its mean value is 28.13846, and its standard deviation is 7.443266.

Table 1. Descriptive Statistics

Sample: 1991 2020				
	Economic growth	**FDI**	**Export**	**Exchange rate**
Mean	4.875667	1.259565	28.13846	8660,675
Median	5.1200000	1.704836	26.63312	9235.254
Maximum	8.220000	2.916115	52.96813	14582.20
Minimum	-13.13000	-2.757440	17.16834	1950.318
Std. Dev.	3.666205	1.397099	7.443266	4053,758
Skewness	-4.124580	-1.296741	1.276027	-0.498979
Kurtosis	20.86852	4.121640	5.424702	2.205398
Jarque-Bera	484.1656	9.980282	15.49020	2.034142
Probability	0.000000	0.006805	0.000433	0.361653
Sum	146.2700	37.78694	844.1539	259820.2
Sum Sq. Dev.	389.7907	56.60465	1606.664	4.77E+08
Observations	30	30	30	30

4.1.2. ARDL Regression

Before carrying out further testing, the research was carried out with an overall test on the model and the results showed that the unit root test results were not stationary at the same level, that there was a significant level difference between the variables, namely the economic growth variable was significant at the level while the other variables were significant at the first difference, so this research can not be tested through the ECM method. The method used is Autoregressive Distributed Lag (ARDL) regression. Cointegration testing can be done as a form of analysis tool as well as an alternative in testing non-stationary time series data.

The Bounds Testing Cointegration cointegration testing method is utilized in ARDL testing to assess whether or not the model exhibits cointegration. In the ARDL model approach, the Bounds Testing Cointegration method does not attribute a scenario to the presence of I(0) or I(1) variables. The optimal combination of lags is chosen based on the Akaike Information Criterion (AIC). The lag in question is the amount of time required for the emergence of a reaction (Y) as a result of an influence or action from a decision. As determined by the AIC, the optimal ARDL model for research is the ARDL (3,4,1,4) model. R-squared value 0.992691 and Adjusted R-squared 0.981728 are relatively high for the ARDL model. It states that the independent variables of the

specified ARDL model may explain the dependent variable of economic growth. In addition, this is an early indicator that this study model is suitable for analysis.

Table 2. ARDL Estimation Results

Dependent Variable: GROWTH_ECONOMY
Method: ARDL
Date: 06/03/22 Time: 12:14
Sample (adjusted): 1995 2020
Included observations: 26 after adjustments
Maximum dependent lags: 4 (Automatic selection)
Model selection method: Akaike info criterion (AIC)
Dynamic regressors (4 lags, automatic): FDI Export Exchange_Rate
Fixed regressors: C
Number of models evaluated: 500
Selected Model: ARDL (3, 4, 1, 4)

The variables of economic growth, FDI, exports and exchange rates are variables that have been described in the research method. Numeric values in brackets of certain variables, such as exchange_value(-4) indicate the lag value of that variable. Because the data has a quarter character, exchange_value(-4) means that the exchange rate variable is in the fourth quarter.

4.1.3. Cointegration Test

1) ARDL Long Term

The cointegration test with the long run form and bound test cointegration has H0 that there is no cointegration in the optimal ARDL (3, 4, 1, 4) model. Based on the test results, it is known that the Fstatistic number is 6.4342093. The critical area in this test is indicated by the upper bound and lower bound where at the 1% level it is 4.66, 5% is 3.67, and 10% is 3.2. Based on these results, the F statistic is bigger than the upper bound, hence it may be concluded that cointegration and a long-term link exist in the model that is owned.

According to the results of the long-term ARDL estimation, the FDI variable has the highest coefficient value of 0.731691, indicating that foreign direct investment (FDI) is the most influential factor on economic growth. Meanwhile, when compared with the exchange rate variable, which is relatively not significantly influential.

Table 3. ARDL Long-Term Estimation Results

F-Bounds Test		**Null Hypothesis: No levels relationship**		
Test Statistics	**Value**	**Significant.**	**I(0)**	**I(1)**
			Asymptotic: n=1000	
F-statistics	6.434209	10%	2.37	3.2
k	3	5%	2.79	3.67
		2.5%	3.15	4.08
		1%	3.65	4.66

2) ARDL Short Term

The most important thing in the estimation of the ECM model is that the error correction term (ECT) value must be negative, the negative value in the ECT is evidence showing that the estimated test model is a valid model. And then after the co-integration

test is done and it is found that the ARDL(3,4,1,4) model has cointegration or there is a long-term relationship, a short-term model estimate will be made. The test results with the application of the Error Correction Model (ECM) show that the results are significant with prob 0.0001, and show CointEq(-1)* is negative and significant -0.871062, which means that it is between -1 to 0 then this model can be accepted or valid.

Table 4. ARDL Short-Term Estimation Results

ECM Regression				
Case 2: Restricted Constant and No Trend				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
D(Economic_Growth(-1))	0.416557	0.080449	5.177921	0.0004
D(Economic_Growth(-2))	-0.138542	0.084367	-1.642138	0.1316
D(FDI)	0.992862	0.121509	8.171126	0.0000
D(FDI(-1))	0.132797	0.109782	1.209641	0.2542
D(FDI(-2))	0.017445	0.103354	0.168787	0.8693
D(FDI(-3))	0.483741	0.102617	4.714027	0.0008
D(Export)	-0.423981	0.037200	-11.39728	0.0000
D(Exchange_Rate)	-0.000788	0.000131	-5.992789	0.0001
D(Exchange_Value(-1))	4.26E-05	0.000175	0.243403	0.8126
D(Exchange_Value(-2))	-0.000155	0.000137	-1.128523	0.2854
D(Exchange_Value(-3))	0.000454	9.47E-05	4.795509	0.0007
CointEq(-1)*	-0.871062	0.129793	-6.711145	0.0001

4.1.4. Classic Assumption Test

1) Normality Test

The objective of the normality test is to determine, for independent variables and dependent variables in a regression model, whether the data distribution is normal or not. A model of regression that displays the outcomes of regularly distributed data is considered to be of high quality.

Examining the value of the probability of JB (Jarque-Bera) with an alpha of 5% or 0.05 reveals whether the normality test results are normally distributed or not. The data are considered normal if the Jarque-Bera probability is larger than 5%. The results of the normality test indicate that the Jarque-Bera probability is greater than 0.05, indicating that the analysis data are normally distributed and the classical assumption test in the regression model has been satisfied.

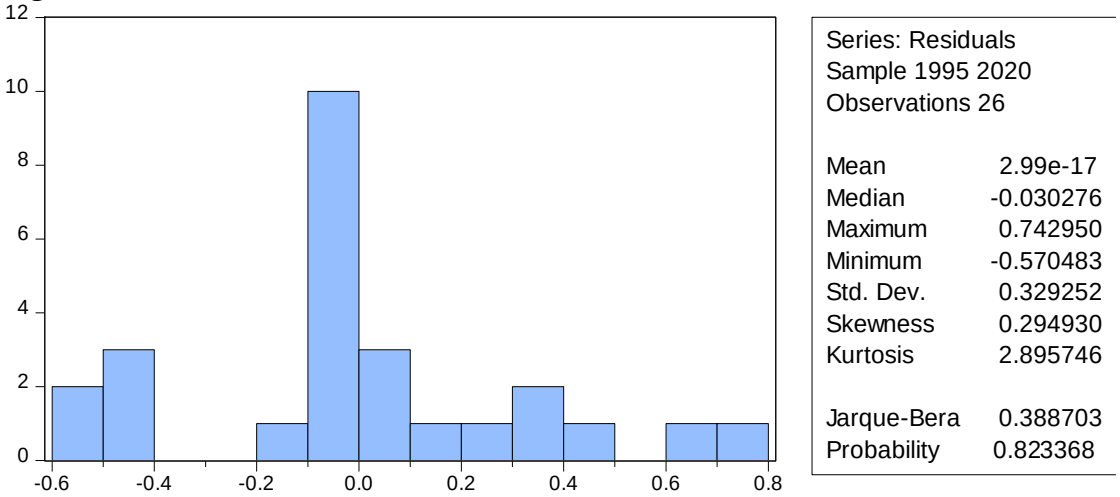

Figure 1. Normality Test Results

4.1.5. Multicollinearity Test

The multicollinearity test is a test to determine the regression model has a correlation problem or not, a good model is a model that is not exposed to the multicollinearity test. The interpretation of the multicollinearity test results that the test results are seen from the Centered VIF column table. Meanwhile, for each VIF value > 10, so that multicollinearity occurs. This happens because there is a strong influence, namely the correlation of one variable with another variable in a model, where the strength of the prediction is not stable. Shows that multicollinearity occurs because of the presence or absence of a relationship between independent variables.

Table 5. Multicollinearity Test Results

Variance Inflation Factors
Included observations: 26

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
Economic_Growth(-1)	0.017101	59.63875	23.92467
Economic_Growth(-2)	0.008967	31.83722	12.64989
Economic_Growth(-3)	0.014320	51.63509	20.34673
FDI	0.044976	16.20177	9.390183
FDI(-1)	0.037973	13.42085	7.884176
FDI(-2)	0.022585	7.700692	4.602960
FDI(-3)	0.026051	8.751116	5.275368
FDI(-4)	0.019939	6.516702	3.984763
Export	0.002874	235.6466	16.94090
Export(-1)	0.003787	316.1527	20.62090
Exchange rate	3.42E-08	341.4651	34,68591
Exchange_Rate(-1)	1.18E-07	1085,879	130.9695
Exchange_Rate(-2)	1.10E-07	940.0984	131.3680
Exchange_Rate(-3)	5.41E-08	420.3720	66.06330
Exchange_Rate(-4)	2.88E-08	205.0107	36.06232
C	8.428343	808.5738	NA

4.1.6. Heteroscedasticity Test

Heteroscedasticity is a regression problem in which the disturbance factor does not have an inconstant variance or the same variance. This can give rise to several problems including the variance of the OLS coefficients going wrong, and the OLS estimator being biased.

Results Interpretation of the regression model based on the presence or absence of heteroscedasticity is based on the Probability F-statistic. If the value of the Probability variable Prob. If the computed F is larger than the alpha level of 0.05 (5%) then there is no heteroscedasticity; if the calculated F is less than the alpha level of 0.05 (5%) then there is heteroscedasticity. Value of Probability The computed F is 0.2343, which is greater than the alpha level of 0.05 (5%), indicating that there is no heteroscedasticity based on the hypothesis test.

Table 6. Heteroscedasticity Test Results

Heteroscedasticity Test: ARCH

F-statistics	1.491537	Prob. F(1.23)	0.2343
Obs*R-squared	1.522503	Prob. Chi-Square(1)	0.2172

4.1.7. Autocorrelation Test

The purpose of the autocorrelation test is to determine if, in the multiple linear regression model, there is a link between the confounding error in a given period and the error in the previous period. If a correlation exists, it is referred regarded as an autocorrelation issue. The Breusch-Godfrey LM Test can be utilized to determine the existence or absence of autocorrelation.

From the results of the autocorrelation test above, it shows the value of Prob. Chi-Square > 0.05. Then there is no autocorrelation because it is worth 0.0003.

Table 7. Autocorrelation Test Results

Breusch-Godfrey Serial Correlation LM Test:

F-statistics	6.977565	**Prob. F(2.8)**	0.0176
Obs*R-squared	16.52613	**Prob. Chi-Square(2)**	0.0003

4.1.8. Linearity Test

Linearity test is a procedure used to determine the linear status or not of a model. The linearity test conducted through the Ramsey RESET Test shows that the hypothesis which states that the linear model is accepted.

Table 9. Linearity Test Results

Ramsey RESET Test

	Value	**df**	**Probability**
t-statistics	0.145901	9	0.8872
F-statistics	0.021287	(1, 9)	0.8872

4.1.9. Cusum test

Cusum test is a probability distribution as an example average. This test is used as a method to determine a change in the average and describes criteria that assist in making decisions in making a decision. The data used in this study in the CUSUM test that is specified correctly and the result can be seen as follows.

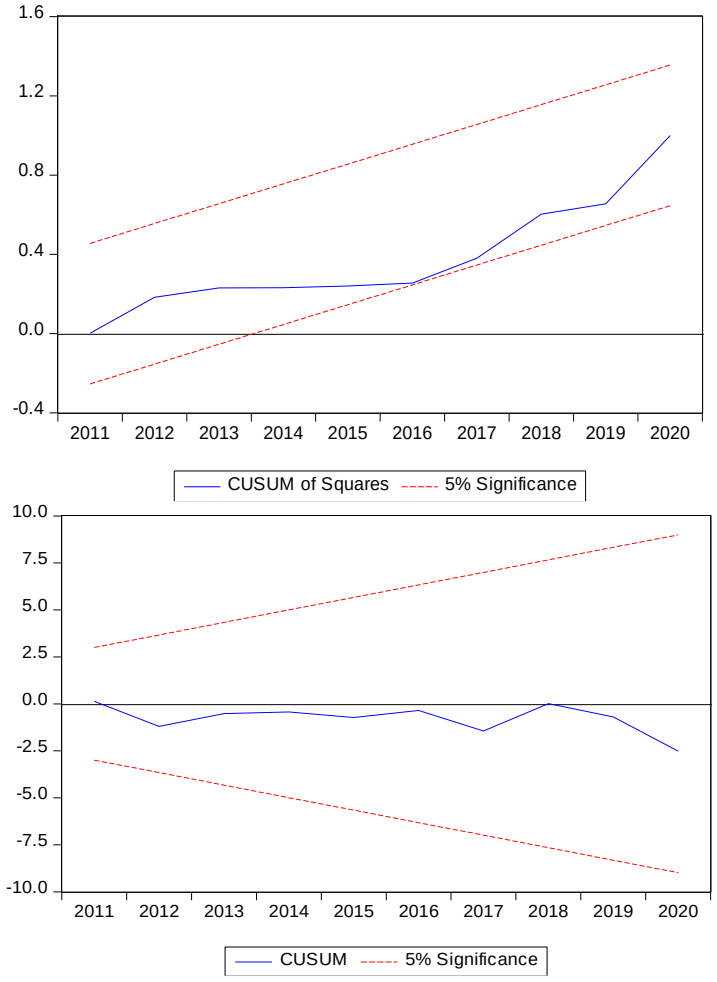

Figure 2. Cusum Test Result

4.2. Discussion

4.2.1. The Effect of FDI on Economic Growth

In this study, it shows that there is a difference in the level of stationarity of each test model. Research analysis using Autoregressive Distributed Lag (ARDL) regression analysis, to predict the impact of FDI, exports, exchange rates on economic growth in Indonesia. There is a long-term and short-term relationship in this study. The cointegration test shows that with the long run form and bound cointegration test with a known Fstatistic number of 6.4342093, it can be concluded that there is cointegration in the model that is owned and there is a long-term relationship. Based on the test results that the FDI variable has the highest coefficient value of 0.731691, it means that foreign capital investment (FDI) is the dominant factor affecting economic growth and is not significant by using = 5 percent, so it can be concluded that together the independent variables affect the dependent variable, namely economic growth because probability < = 5 percent. This happens because of the instability of the existing economic conditions in Indonesia, so that when the instability occurs it will affect unstable economic activities as well. Hence, foreign direct investment will decline because investors prefer to invest in other countries that have better economic value, such as exports = 5 percent.

In the study carried by Kueh et al. (2007), they concluded that the characteristics of investment in Indonesia are different from investments in the ASEAN region. In aggregate, investment motivation in Indonesia was not driven by the large export value, but was relatively reduced by the export value. Therefore, export factors will be reviewed which can be a motivation for investors to invest in investment destinations. When a developing country such as Indonesia is able to make developments, in the sense that the development in question is the ability to master technological sophistication and have the efficiency of production factors. However, the relationship between FDI and economic growth has a negative relationship in the long run.

Foreign Direct Investment (FDI) needs to be pursued in order to enter Indonesia. However, in the development of time that Indonesia needs to get a benefit for increasing the industrialization of the national industry. This can be achieved if the national industry is able to develop knowledge and technology. The process of technological development can also be encouraged by efforts to improve education, research, and technology. The stimulus provided from FDI will be used to support the manufacturing sector as well as international relations and trade. This support will have an impact on increasing economic growth.

4.2.2. The Effect of Exports on Economic Growth

The test results of the relative export variable have a significant positive effect on economic growth, with the influencing phenomenon being when an increase in exports can generate foreign exchange that will be used to finance imports of raw materials and capital goods required for the production process that will form added value. GDP is the sum of all production units' added value. The increase in GDP from one year to the next, based on constant prices, signifies economic expansion. Therefore, the role and expansion of exports are required to stimulate economic growth. The Indonesian government has a number of options at its command to encourage export expansion.

One way to increase Indonesia's exports is to find markets for non-traditional export destinations. This is intended if the export destination market feels saturated, it is necessary to explore a new export market so that market diversity can be realized. The process of searching for new markets starts from in-depth market research to find new export markets, then conducts trade missions to the country to be addressed, visits the new export market country to conduct trade exhibitions in that country. The process of developing a new export market exploration is not complete without an important component, namely the development of export goods products (Ginting, 2017).

In the focus of export development that can be done through several strategies, namely:

First, the strategy is to reduce dependence on export destination markets to certain countries, by opening up new and potential export destination markets. In other words, develop the market. The second strategy is diversification of export products by increasing the target of exporting goods, then improving Indonesia's image in the international market through the National Branding program (Trade, 2015). In this instansce, the obstacle faced by Indonesia in developing exports is that Indonesia's exports are still dominated by raw materials which are the mainstay of exports. Therefore, Indonesia's export performance is still highly dependent on fluctuations in commodity prices which depend on market prices. Consequently, the impact of exports on economic growth is heavily reliant on the market price of raw resources.

In line with Ginting (2017), that according to the findings of research, it is vital to boost Indonesia's export performance in order to stimulate economic growth. It is possible to improve Indonesia's export performance in a number of ways, including by enhancing the export administration system, increasing research and development of Indonesian products, enhancing infrastructure facilities and infrastructure, ensuring exchange rate stability, and expanding non-traditional markets, as well as by enhancing the structure of commodity exports.

4.2.3. The Effect of Exchange Rate on Economic Growth

The exchange rate on economic growth has a positive but not significant influence on Indonesia's economic growth. The effect of an exchange rate on economic growth can indirectly be decomposed according to the path it takes, namely through exports and imports as well as investment. The exchange rate in Indonesia often depreciates against foreign currencies.

The rupiah exchange rate will reduce the rate of economic growth, this is due to a decrease in the level of investment due to the increasingly expensive price of capital goods which triggers inflation and other production factors.

The real depreciation of the Rupiah exchange rate can reduce the economic growth rate. This can be seen from the fact that the real depreciation of the exchange rate causes the price of imported goods to become more expensive and also other production factors needed for an investment. The increase in net exports due to the depreciation of the Rupiah is predicted to cause a smaller decrease than the decline in investment so that the net effect for economic growth is negative.

Increased volatility of the nominal exchange rate will suppress economic growth. This is partly due to the decrease in investment due to the increase in volatility in the nominal exchange rate which is estimated to be greater than the decrease in imports so that the net effect for economic growth is negative.

These finding is comparable with Marpaung & Purba (2017) and Purba & Magdalena (2017) that the change in exchange rates partially has a positive but not significant effect on Indonesia's economic growth, using historical data from 1970-2015.

5. CONCLUSION

This research is a research that focus on how to examine the impact of FDI, Exports, and Exchange Rates on Indonesia's economic growth from 1991 to 2020, using the ARDL (3,4,1,4) model as the optimal research lag. R-squared value of 0.992691 and Adjusted R-squared value of 0.981728.

Because probability $\alpha = 5\%$, it can be concluded that the independent variables influence the dependent variable, namely economic growth, as Foreign Direct Investment (FDI) is shown to be the primary factor affecting economic growth and $\alpha = 5\%$ is used to demonstrate that it is not significant.

The test findings of the export variable have a large positive effect on economic growth since economic growth is the increase in GDP from one year to the next that is measured at constant prices. Therefore, in order to promote economic growth, the role and expansion of exports are required. Meanwhile, the impact of the currency rate on economic growth in Indonesia is favorable but insignificant.

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