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The Relationship between Economic Factors and FDI in Indonesia

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Abstract:
Investment is a key macroeconomic variable for economic growth and development in every country. Private investment is one of the assistants in the economic development of a country. Foreign direct investment (FDI) is one of the engines driving the economy in developing countries. Several factors like foreign debt, labor, inflation, and growth that encourage the emergence of foreign direct investment are the objectives of this study. The study aims are to test the correlation between FDI and economic factors. The center of interest country is Indonesia. Indonesia has a quite stable economy and trying to improve FDI from other countries. This study implements the autoregressive distributive lag (ARDL) approach to determine the link between FDI and economic factors: foreign debt, inflation, economic growth, and labor. FDI and economic factors are cointegrated. In the short and long term, the variables of foreign investment at lag 1, economic growth, and foreign debt significantly affect Indonesia's foreign investment. The Long Run Form and ARDL bounds test, where economic factors are the independent variable and FDI is the dependent variable, show that growth and foreign debt significantly correlate with FDI. The novelty of this research is that this research looks at what factors affect investment supply, not investment demand, as has been done a lot. Further research can include non-economic variables because investment is influenced not only by economic variables.

Keywords: foreign direct investment, autoregressive distributive lag, Indonesia, economic factors, economic growth, foreign debt, labor, inflation.

印尼经济因素与外商直接投资的关系

摘要：
投资是每个国家经济增长和发展的关键宏观经济变量。私人投资是一个国家经济发展的助手之一。外国直接投资（外商直接投资）是推动发展中国家经济发展的引擎之一。鼓励外国直接投资出现的几个因素，如外债、劳动力、通货膨胀和增长是本研究的目标。该研究旨在检验外商直接投资与经济因素之间的相关性。感兴趣的国家的中心是印度尼西亚。印度尼西亚的经济相当稳定，并试图增加来自其他国家的外国直接投资。本研究采用自回归分配滞后（阿德莱）方法来确定外商直接投资与经济因素之间的联系：外债、通货膨胀、经济增长和劳动力。外商直接投资和经济因素是协整的。从短期和长期来看，滞后 1 的外国投资、经济增长和外债等变量对印尼的外国投资有显着影响。长期形式和阿德莱界限检验，其中经济因素是自变量，外商直接投资是因变量，表明增长和外债与外商直接投资显着相关。这项研究的新颖之处在于，这项研究着眼于影响投资供应的因素，而不是投资需求，因为已经做了很多。进一步的研究可以包括非经济变量，因为投资不仅受经济变量的影响。

关键词：外国直接投资，自回归分配滞后，印度尼西亚，经济因素，经济增长，外债，劳动力，通货膨胀。

1. Introduction

Investment is a key macroeconomic variable for economic growth and development in every country. It is divided into private and public investments (Brima & Brima, 2017). As a developing country, even with the fourth-largest population in the world, Indonesia also depends on incoming investment from within the country and abroad.

Private investment is one of the assistants in the economic development of a country. This is due to limited financing or resources owned by a country in carrying out economic development activities. Investment can be used as a source of financing to cover the limitations of financing in Indonesia's economic development.

One of the ways to overcome the problems of economic development is creating a good investment climate so that foreign investors can invest in Indonesia. Investment is an indicator of openness, which is very important for economic growth. Foreign direct investment (FDI) is very helpful for Indonesia in implementing national development. Previous research in Nigeria stated that FDI could promote economic growth in developing countries (host countries), such as workforce training, market development, financial inflow, technology transfer, and skills.

Bakari et al. (2018) found that, in the short term, labor causes FDI. Furthermore, Bayraktar-Saglam and Sayek Böke (2017) found that labor market policies should focus on productivity-enhancing tools, one of which comes from investment.

The desire of investors to invest in Indonesia is, of course, influenced by various factors. The long-term growth rate in a country will improve the economic situation in that country. A good GDP growth rate will positively affect the country because it will attract investors. However, high or low economic growth rates do not affect FDI based on the research that has been conducted.

FDI (Foreign Direct Investment) is believed to be one of the important sources of financing for developing countries, including Indonesia. The FDI is expected to contribute to development by transferring assets, technology, and managerial skills to increase economic growth (Wartaman et al., 2021). Indonesia is the fourth-most populous country in the world, with a large workforce and abundant natural resources. This makes Indonesia one of the most promising countries to invest in.

Based on the 2015-2019 Investment Strategic Plan, the Government of Indonesia sets investment priority sectors, namely infrastructure, agriculture, maritime industry, tourism, special economic zones (SEZ), industrial estates, and the digital economy. These sectors are very open to FDI, of course, with due observance of the investment guidelines contained in Presidential Regulation No. 44 of 2016 concerning List of Business Fields Closed and Business Fields Open, with Requirements in the Investment Sector. There are many benefits that we can get from the entry of foreign investment into Indonesia. One of them is the entry of new capital to help fund various sectors that are underfunded. This foreign investment also opens up many new jobs to reduce unemployment.

In addition, the entry of foreign investment is usually accompanied by technology transfer. It brings new technological knowledge to Indonesia, which will eventually be developed. It is also possible that foreign investors will cooperate with MSMEs (Micro, Small and Medium Enterprises). The involvement of MSMEs will certainly encourage community economic growth. MSMEs or domestic companies also can market their products to international markets. The most obvious benefit from the entry of foreign investment is to increase state revenues through taxes. In addition, it creates a more stable relationship in the economic sphere of the two countries.

According to the Investment Coordinating Board (BKPM), there are at least five obstacles often faced by investors in investing in Indonesia, that have made foreign investment interest in Indonesia decline: (1) Complicated regulations; (2) Difficult land acquisition;

(3) Unequal public infrastructure; (4) Taxes and other non-fiscal incentives that do not support investment; (5) Inadequately-skilled labor (VIVA News, 2019).

These investment constraints are an obstacle for Indonesia to take advantage of the momentum of the trade war between the United States (US) and China, where several industries in China have relocated their factories to the Southeast Asian region so as not to be affected by the increase in tariffs. Indonesia has been unable to attract Chinese companies leaving the US, while only a few Japanese companies have invested in Indonesia. In a limited meeting on the Investment Ecosystem in September 2019, the President asked his subordinates to inventory regulations regarding the economy and investment that hinder economic growth.

The slowdown in global economic growth raises concerns about the potential for an economic recession, so Indonesia must prepare anticipatory measures, one of which is creating an attractive investment ecosystem for investors. Global economic conditions also affect the flow of foreign investment into Indonesia. It can be seen from the previous description that Indonesia cannot use the momentum of the trade war between the United States and China to attract Chinese investors who leave the US to invest in it.

The purpose of this study is to determine the relationship between FDI and economic factors: inflation, economic growth, foreign debt, and labor. From this research, the authors hope to contribute to the restructuring of foreign investment in the future.

2. Literature Review

2.1. Theoretical Review

Regarding investment, Keynes has the same opinion as Classics, namely that investment is determined by the benefits that will be obtained in the future, in this case, return on investment (Hicks, 1937). The return on the investment itself is determined by how much the interest rate is given. This concept is known as the marginal efficiency of investment (MEI), where investment will be made if MEI > R (interest rate). The increase in MEI was influenced by expectations regarding future economic activities and technological advances.

The neo-classical flow is based on classical economic thoughts regarding companies' production factors in achieving maximum profit where the expectations are rational. In this flow, it is stated that companies in deciding the amount of capital to be used in production activities compare the marginal productivity of capital (MPK) with the cost of using capital or the cost of capital.

Neo-Classical investment theory becomes important in analyzing the investment behavior of companies because Neo-Classical investment theory has used 'dynamic economic analysis to explain the investment behavior of companies. Neoclassical economics states that the factors that influence this investment behavior are the real interest rate (RI), the depreciation rate (d), the national output level or the national income level (Y), the actual available capital stock (Ka), and government policy (G).

Investment or investment is an activity to increase goods and services available in the economy to obtain profit. According to its type, an investment can be divided into four pairs: 1) Autonomous and induced investments; 2) Public and private investments; 3) Domestic and foreign investments; 4) Gross and net investments. Foreign investment is the activity of investing in other countries. Based on the objective, foreign investment can be grouped into direct and portfolio investments.

Foreign Direct Investment (FDI) is more focused on a project. Means rather refers to net inflows of investment to acquire a perpetual management interest (10 percent or more of the voting share) in a firm's operations in an economy other than investors. This includes the amount of capital, reinvested income, long-term and short-term capitals, as shown in the balance of payments. Types of FDI are divided into direct investment into the country and foreign investment abroad so that positive and negative net FDI and direct investment shares are obtained in a certain period. Meanwhile, international portfolio investment is only made in the purchase of stocks, bonds, and other international financial securities in the capital markets of other countries.

Gross domestic product (GDP) is the most considered economic statistic because it is considered the single best measure of people's welfare. GDP measures the total income of everyone in the economy and the total state expenditure on buying goods and services produced from that economy. GDP can measure total income and expenditure because income must equal expenditure for the economy as a whole (Mankiw, 2000).

One way to calculate GDP is through an expenditure method like this GDP = C + I + G + (XM), where C is consumption, I is an investment, G is government expenditure, X is exported, and M is imported.

GDP measures the monetary value of the final goods and services produced in a country in a certain period. It calculates all the output produced within the borders of a country. GDP consists of goods and services produced for sale in the market and non-market products, such as defense or education services provided by the government. The alternative concept, gross national product (GNP), calculates all the output of a country's population. If a German-owned company has a factory in the United States, the output from this factory will be included in the US GDP but in the German GNP (Callan, 2020).

The discussion of foreign loans can be explained by the theoretical framework that the deficit in private investment financing occurs because savings are smaller than investment (I - S = resource gap), and the trade deficit is caused by exports' being smaller than imports (X - M = trade gap). In addition, there is still an

investment deficit in the government budget because government revenue from taxes is smaller than government expenditure (T - G = fiscal gap).

Low domestic savings do not allow for adequate investment, so developing country governments have to attract loans and investment funds from abroad. Foreign aid can play an important role in the efforts of the country concerned to reduce the main obstacle in the form of a shortage of foreign exchange and to increase the rate of economic growth.

The IMF and the World Bank define the sustainability of a country's external debt as its ability to fully meet current and future obligations without the need for rescheduling or arrears (Callan, 2020). Meanwhile, the European Union has a fiscal-financial program to guide its member countries' fiscal financial stability. The continuity of a country's fiscal-financial program is defined as the absence of default risk; that is, the level of debt must be less than the present value of all future primary budget surpluses.

2.2. Empirical Review

Research on inflation and foreign direct investment was put forward by Omankhanlen (2011), who examined the effects of exchange rates and inflation on foreign direct investment through linear regression analysis. This study gives the result that inflation does not affect foreign direct investment. The results of this study are supported by Mbui (2017). Different results are shown by Fornah and Yuehua (2017), using the OLS method, who show that inflation has a positive effect on foreign direct investment. Meanwhile, Emmanuel et al. (2019), using the cointegration method and the Jarque-Bera test, show that inflation hurts foreign direct investment in the long run.

Inflation has a significant effect on foreign portfolio investment in Indonesia based on research results by Andreano and Sulasmiyati (2018). Meanwhile, according to Sugiartiningsih (2017), there is a negative and significant relationship between inflation and the receipt of South Korean foreign direct investment in Indonesia.

Several studies have been conducted on the relationship between economic growth and foreign investment. Asiamah et al. (2019) researched the determinants of foreign direct investment in Ghana using the causal research design method. This study shows that gross domestic product positively affects foreign direct investment. Another view but the same result was put forward by Kubo (2019), who researched the determinants of Japanese foreign direct investment in Southeast Asia for 2008-2015. By using regression methods and industry-specific panel data.

Another study was conducted by Kakoti (2019) on outward foreign direct investment in India for 1980-2016. By using the ARDL (Autoregressive Distributive Lag) model, it is found that gross domestic product has a positive and significant effect on the outward movement of foreign direct investment in India. The same results were obtained by Mokuolu (2018) in India, by the same methods.

Another research conducted by Hsieh et al. (2019) looked at the effects of uncertain economic policies on outward foreign direct investment in the United States. By using the Vector Autoregression Model (VAR), it can be seen that gross domestic product growth does not provide significant results for outward foreign direct investment in the United States. The results of this study are in line with Bett (2017), but Fan and Hao (2020) with the VECM method reveal different results even though with the same method, namely VAR, where the gross domestic product has a significant effect on foreign direct investment.

Economic growth has a positive but insignificant effect on foreign direct investment in Indonesia, according to Sari and Baskara (2018). However, Dewi and Cahyono (2016) found that economic growth has a negative and insignificant relationship with foreign direct investment in Indonesia.

Huijie (2018), researching outward foreign direct investment and labor in the Japanese manufacturing industry, found that the emergence of a "Hollowing-out" effect in Japan resulted from a decrease in domestic production in the Japanese manufacturing industry because Japanese outward FDI had increased. Jahan (2020) studied the determinants of foreign investment in 24 developing countries and found that the workforce was insignificant in determining foreign investment in developing countries.

Mugambi and Murunga (2017), who examined the impact of foreign debt on foreign investment entering Kenya, found that foreign debt harmed foreign investment.

3. Methodology

3.1. Research Data

This study uses time-series data for 1999-2020. The research data is secondary data sourced from the Indonesian Central Bureau of Statistics (Statistics Indonesia, 2022). This study used data on foreign debt, inflation, economic growth, labor force, and foreign investment realization. For more details, it will be presented in Table 1. The research data is processed using Eviews 10 software, including estimating the ARDL according to the composed equation.

Table 1. Variables used

Variables	Notation	Data Source	Unit
Foreign Debt	DEBT	Statistics Indonesia, 2022	Million US$
Inflation	INF	Statistics Indonesia, 2022	%
Economic Growth	GROWTH	Statistics Indonesia, 2022	%
Labour	LABOUR	Statistics Indonesia, 2022	People
Foreign Direct Investment	FDI	Statistics Indonesia, 2022	Billion US$

3.2. Research Model and Estimation

This study examines the relationship between the variables of foreign debt, inflation, economic growth, and labor on foreign investment. For examining the relationship between the independent and dependent variables, the model used is as follows:

$$FDI = f(DEBT, INF, GROWTH, LABOR) \quad (1)$$

From this mathematical function is formed in an econometric model, namely:

$$FDI = \alpha + \beta_1 DEBT + \beta_2 INF + \beta_3 GROWTH + \beta_4 LABOR + \epsilon \quad (2)$$

The econometric model is then specified into a semi-log model, then formed into a lin-log form, as follows:

$$Ln\ FDI = \alpha + \beta_1 Ln\ DEBT + \beta_2 INF + \beta_3 GROWTH + \beta_4 Ln\ LABOR + \epsilon \quad (3)$$

where FDI - foreign investment, DEBT - external debt, INF – inflation, GROWTH - economic growth, LABOUR - amount of working force.

The research technique in this study based on the cointegration approach proposed by Pesaran and Shin (1999) is the ARDL model, which means that the standard least squares regression includes the lag of the dependent variable and the explanatory variable as regressors (Greene, 2008). Although the ARDL model has been used in econometrics for decades, it has gained popularity in recent years as a method for examining cointegration relationships between variables through the works of Pesaran and Shin (1999), Pesaran et al. (2001). The dominance of the ARDL model is expressed in five main aspects: it allows us to examine the short-term and long-term relationships between the dependent and explanatory variables in a multivariate framework; Unlike conventional methods for finding long-term relationships, using the ARDL model allows estimation from only one equation (Hamuda et al., 2013); the ARDL model is particularly suitable for cointegration analysis in the case of limited sample size (small sample size) whereas the Johansen cointegration technique requires a larger sample size to achieve reliability; ARDL models can be used even in the case of non-stationary variables or a mixture of stationary and non-stationary, level I (1) or I (0); and (v) according to Hamuda et al. (2013), other cointegration techniques generally require regressors to have the same lagged period while the ARDL model requires variables to have different and optimal lagged periods (according to AIC or SBC criteria, the study will cover these aspects in the relevant section).

The ARDL model estimation process is carried out in the following stages: the dependent test determines the cointegration between variables, namely the long-term relationship between variables; the variable lagging period in the ARDL model is determined using the SBC or AIC benchmark (reaching the smallest value), and the ARDL model is run with the specified lag period to test the long-term relationship between the variables in the model; a diagnostic test model is used; the short-term impact of the variables was assessed by the ECM based on the ARDL approach to cointegration.

4. Result and Discussion

4.1. Stationery Test

Using time-series data sometimes results in a linear regression seen from the R-square value but only provides a relationship based on trend. Therefore, it becomes very important to test the stationarity of the data. Time-series data is stationary if the data does not contain unit roots, and the mean, variance, and covariant are constant over time. The unit root test was performed using the augmented Dickey-Fuller (ADF) method, by comparing the ADF statistical value with the Mackinnon critical value of 1%, 5%, and 10%. Table 2 shows that the variables FDI, GROWTH, DEBT, and LABOUR are stationary at the 1st-level difference, while the INF variable is stationary at the level of difference.

Table 2. Stationery test

Variable	t-Statistic	Difference	Tes Critical Value			Stationery Test
			1%	5%	10%	
FDI	-6.998681	1st	-3.857386	-3.040391	-2.660551	√
GROWTH	-6.134213	1st	-3.857386	-3.040391	-2.660551	√
INF	-2.707182	level	-3.831511	-3.029970	-2.655194	√
DEBT	-3.379848	1st	-3.857386	-3.040391	-2.660551	√
LABOUR	-5.331032	1st	-3.857386	-3.040391	-2.660551	√

4.2. Optimum Lags

In the ARDL test, the optimum lag test is carried out. The optimum lag is used to determine the information criteria recommended by the smallest value of the Final Prediction Error (FPE), Akaike Information Criterion (IAC), Schwarz Information Criterion (SC), and Hannan-Quinn Information Criterion (HQ). Table 3 shows that FPE, AIC, SC, and HQ determine lag 1 as the optimum lag for this study, used for the subsequent analysis.

Table 3. Optimum Lags

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-11.05452	NA	3.73e-06	1.68	1.93	1.73
1	67.37	107.3*	1.51e-*	-3.93*	-2.44*	-3.68*

Notes: * indicates lag order selected by the criterion;
LR - sequential modified LR test statistic (each test at 5% level);

FPE - Final prediction error;
AIC - Akaike information criterion;
SC - Schwarz information criterion;
HQ - Hannan-Quinn information criterion.

4.3. Causality Test

The Granger causality test determines the direction of the relationship between a variable and other variables, how x affects y by determining whether the present value of y can be explained by the historical value of y and whether the addition of lag x can improve the ability to explain the model. This test is performed by comparing each test with an alpha of 0.01; 0.05; or 0.1

In this study, several cases can be interpreted from the Granger causality equation above (Gujarati, 2003):

1. Unidirectional causality from Y to X, meaning that one-way causality from Y to X occurs if the Y lag coefficient in the Yt equation is statistically significantly different from zero, the lag coefficient X in the Xt equation is equal to zero;
2. Unidirectional causality from X to Y, meaning that one-way causality from X to Y occurs if the X lag coefficient in the Xt equation is statistically significantly different from zero and the Y lag coefficient in the Yt equation is statistically equal to zero;
3. Feedback/bilateral causality, meaning reciprocal causality that occurs if the lag coefficient Y and lag X are statistically significantly different from zero in the two equations of Yt and Xt above;
4. Independence, meaning that no interdependence occurs if the lag coefficient Y and lag X are statistically equal to zero in each of the Yt and Xt equations above.

Table 4. Granger causality

Null Hypothesis:	Obs	F-Statistic	Prob.
INF does not cause FDI	18	3.42279	0.0639
FDI does not cause INF	18	3.17911	0.0752
GROWTH does not cause FDI	18	2.80004	0.0975
DEBT does not cause INF	18	3.98753	0.0446
LABOUR does not cause INF	18	6.51030	0.0110
LABOUR does not cause DEBT	18	14.3280	0.0005

In Table 4, there are six relationships between a variable and another variable. The relationship between inflation and foreign investment shows a bilateral causality. Inflation affects foreign investment, and vice versa, foreign investment affects inflation.

Furthermore, between economic growth and foreign investment, there is unidirectional causality from economic growth to foreign investment. Economic growth affects foreign investment, but foreign investment does not affect economic growth. Furthermore, the relationship between foreign debt and inflation also has unidirectional causality where foreign debt affects inflation, but inflation does not affect foreign debt. The same is also shown by the unidirectional causality between labor and inflation, where labor affects inflation. In addition, labor also affects foreign debt, while foreign debt does not affect labor.

4.4. ARDL Estimation

4.4.1. Short Run

In the short term, the ARDL estimates show that foreign investment at lag 1 (FDI (-1)) has a positive and significant effect on foreign investment. The same is also shown by economic growth with a positive and significant effect on foreign investment. External debt and external debt of the previous period showed different results. External debt has a positive and significant effect on foreign investment, while foreign debt at lag 1 has a negative and significant effect on foreign investment. The insignificant result is shown by the influence of inflation and foreign investment. Together, the independent variable has a significant effect on the dependent variable. The coefficient of determination (R-squared) is 0.967, which means that 96.7% of the dependent variable is influenced by the independent variable.

As is well known, an indirect investment yield results in the year the investment starts. The impact of an investment will be felt in the 1-5 years the investment was started. The increase in foreign investment in lag 1 will increase Indonesia's foreign investment. Investors will first determine the kind of investment currently implemented in the country; then, they will decide to invest in that country. This is also the case with what happened in Indonesia. In the short term, foreign investment is affected by foreign investment at lag 1 or for the previous period.

Economic growth is one of the indicators used by the host country to invest in the home country. A country with stable economic growth is an attraction for investors to invest. Of course, they expect a higher return on investment. In Indonesia, in the short term, it can seem that an increase in economic growth encourages increased foreign investment. This needs to be a concern for the government to maintain Indonesia's economic growth, especially in the era of the Covid-19 outbreak.

The increase in foreign debt has also seen an increase in foreign investment. Foreign debt is a fund that must be managed properly, for example, through improving infrastructure and its facilities, telecommunication networks, and the quality of human resources. Foreign debt in Indonesia has been well managed to bring in more foreign investment because investors have been treated to a complete package including infrastructure, telecommunications, and human resources. Until 2019, Indonesia's foreign debt was $402.08 billion. A different effect is shown by

foreign debt in lag 1 where an increase in foreign debt at lag 1 will reduce foreign investment. Foreign debt in previous years has not been managed properly; the increase in debt was not accompanied by an increase in foreign investment. There have been several periods when foreign debt has increased, but foreign investment has decreased. Based on this, a box policy from the government is needed to allocate the use of foreign debt wisely and benefit all Indonesian people.

Labor and inflation have an insignificant effect on foreign investment. The increase in inflation will encourage an increase in foreign investment. Inflation as a variable to measure people's purchasing power is an indicator for investors. Too high inflation is not good because it will weaken people's purchasing power. The purchasing power of the people decreases, so the return on investment will also decrease. Inflation in Indonesia has been maintained in the range of 3% - 5% since 2016. The stability of inflation also reflects the stability of a country's economy.

An increase in the workforce encourages a decrease in foreign investment and vice versa. This can be seen from the quality of Indonesian workers who still do not meet the standards of companies, especially companies from abroad. In addition, most businesses in Indonesia are labor-intensive, while the incoming investment is capital-intensive. Of course, in a capital-intensive business, what is most needed is a skilled, technologically literate, and broad-minded workforce. It is different from labor-intensive businesses, where the workforce is more likely to work physically. The Indonesian government is starting to address this gap so that Indonesian workers have the same quality of human resources as foreign workers. In addition, improving the quality of Indonesian human resources or labor will stem the influx of foreign workers in Indonesia, which is increasing day by day.

Table 5. Short-term ARDL estimation

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
FDI(-1)	0.309252	0.156415	1.977134	0.0715
INF	0.042256	0.031116	1.358004	0.1994
GROWTH	0.303183	0.093544	3.241066	0.0071
DEBT	5.217753	1.867553	2.793898	0.0162
DEBT(-1)	-3.451080	1.507714	-2.288949	0.0410
LABOUR	-1.968319	3.144474	-0.625961	0.5431
C	19.25592	49.20658	0.391328	0.7024
R-squared	0.967041	Mean dependent var.		9.517352
Adjusted R-squared	0.950562	S.D. dependent var.		0.805935
S.E. of regression	0.179197	Akaike info criterion		-0.323353
Sum squared resid	0.385338	Schwarz criterion		0.024598
Log-likelihood	10.07185	Hannan-Quinn criter.		-0.264466
F-statistic	58.68201	Durbin-Watson stat.		2.352589
Prob(F-statistic)	0.000000			

4.4.2. Long Run

Table 6 shows the long-term relationship between the dependent and independent variables. Foreign investment at lag 1, economic growth, and foreign debt at lag 1 significantly affect foreign investment. Foreign investment at lag 1 has a negative effect, while economic growth and foreign debt at lag 1 positively affect foreign investment. Estimates with insignificant effects are shown by the effect of inflation and labor on foreign investment, although in a different direction.

In the long-term estimate, an increase in foreign capital at lag 1 will reduce Indonesia's foreign investment and vice versa. Foreign investment will reduce foreign investment at lag 1, because the impact of foreign investment on lag 1 has been renewed with the current foreign investment. Economic growth in the long term will also continue to support an increase in foreign investment. Investors still pay attention to the stability of a country's economy before deciding to invest in that country. Foreign debt at lag 1 also encourages an increase in Indonesian foreign investment. Foreign debt is a must and cannot be separated from Indonesia. Indonesia still depends on foreign debt to develop the country in terms of infrastructure and the quality of human resources. Indonesia is a large country with a population of around 285 million. It takes many funds; therefore, the Indonesian government also needs foreign debt apart from state revenue. Because the impact of this foreign debt is significant on foreign investment, it is necessary to have policies, regulations, and good allocation procedures to ensure that this foreign debt is used to improve the community's welfare.

Table 6. Long-term ARDL estimation

Conditional Error Correction Regression				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
C	19.25592	49.20658	0.391328	0.7024
FDI(-1)	-0.690748	0.156415	-4.416134	0.0008
INF	0.042256	0.031116	1.358004	0.1994
GROWTH	0.303183	0.093544	3.241066	0.0071
DEBT(-1)	1.766673	0.749563	2.356936	0.0363
LABOUR	-1.968319	3.144474	-0.625961	0.5431
D(DEBT)	5.217753	1.867553	2.793898	0.0162

Labor and inflation have an insignificant effect on foreign investment in the long run. It took about 20 years to improve the quality of human resources.

The bound cointegration test shows that the model is cointegrated. Bound test: a test is performed to determine the cointegration between variables, i.e., to find the long-term relationship between variables according to Pesaran et al. (2001), and can be run under the two hypotheses:

H_0: There is no cointegration relationship between variables.

H_1: There is cointegration relationship between variables and the hypothesis.

If the bound value for the F-statistic is greater than the value of the upper bound I (1) at the significance level of 5 percent, then H0 can be rejected and vice

versa. If the F-statistic is less than the lower bound I (0) value at the significance level of 5 percent, the null hypothesis is accepted. If F-statistic is between two bounds, it is not possible to draw conclusions using ECM to determine it. If the coefficient of ECM is negative and significant (p-value of 0.05), the conclusion is that the cointegration relationship exists between the variables.

The bound test results are shown in Table 7, reporting cointegration between variables with F-statistics above a significance value of 5% or 0.05.

Table 7. Bound co-integration test

F-Bounds Test		**Null Hypothesis: No levels relationship**		
Test Statistic	**Value**	**Signif.**	**I(0)**	**I(1)**
F-statistic	9.478869	10%	2.2	3.09
k	4	5%	2.56	3.49
		2.5%	2.88	3.87
		1%	3.29	4.37

4.5. Stability Test

In performing the stability test, it was carried out using CUSUM and CUSUM of Squares charts. The model is stable based on Figures 1 and 2 because the blue line formed does not go outside the red line. This means that the ARDL model passes the CUSUM test, and all variables are verified.

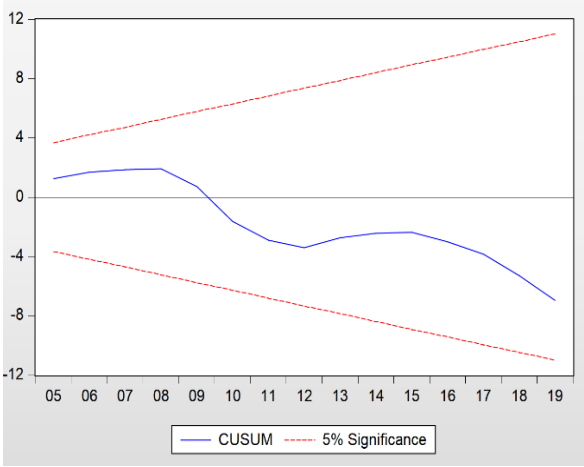

Figure 1. CUSUM test

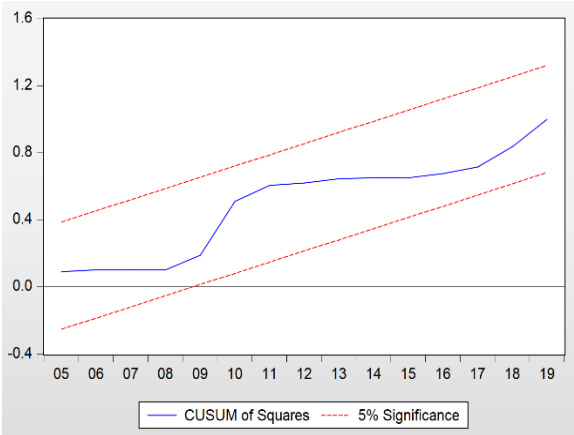

Figure 2. CUSUM of squares test

5. Conclusion

The funding of this research is in line with Fornah and Yuehua (2017), Andreano and Sulasmiyati (2018), where inflation has a positive effect on FDI, but differs from Emmanuel et al. (2019) using the cointegration method and the Jarque-Bera test, showing that inflation harms foreign direct investment in the long run, and Sugiartiningsih (2017), showing a negative and significant relationship between inflation and the receipt of South Korean foreign direct investment in Indonesia.

In addition, Bett (2017), Asiamah et al. (2019), Kubo (2019), Kakoti (2019), Hsieh et al. (2019), and Mokuolu (2018) also support the results of this study on the relationship between economic growth and foreign direct investment. However, the results of this study differ from those of Wijeweera et al. (2010), Fan and Hao (2020) using the VECM method.

Regarding the relationship between labor and foreign direct investment, the results of this study are in line with Jahan (2020), who found no significant relationship between labor and foreign direct investment. Meanwhile, research by Mugambi and Murunga (2017) on debt and foreign direct investment shows a negative relationship between debt and foreign direct investment.

Based on the research results above, an increase in inflation in Indonesia will increase FDI, where investors will gain greater profits. However, it is important to remember that inflation will remain stable to support the Indonesian economy. In addition, economic growth that shows a positive trend also increases FDI because economic growth reflects a country's economy. Of course, investors will only invest in countries with good economic growth.

An increase in the workforce has an unfavorable impact on FDI. A large number of workers will make it difficult for investors because it is not accompanied by an increase in the quality of the workforce.

The positive relationship between debt and FDI illustrates that the Indonesian government needs to properly manage the debt it receives to increase FDI. This can be done by improving the quality of infrastructure.

This study examines factors Indonesia has to encourage an increase in foreign direct investment. By examining several economic factors, the Indonesian government can determine what factors can be used to increase FDI. Indonesia is currently in the promotion period to various countries related to FDI. In general, other studies examine the impact of foreign direct investment on economic conditions in the country. However, this study investigates how the economic conditions of a country can encourage investors to invest in that country.

This study does not include non-economic factors that greatly affect foreign direct investment in a country.

Based on the study results, economic growth, debt, and inflation positively affect foreign direct investment, while labor hurts it. Therefore, to encourage an increase in foreign direct investment, it is necessary to control

inflation and foreign debt strictly. Uncontrolled inflation and labor will reduce foreign direct investment. Economic growth must continue to be increased as a reflection of the condition of the Indonesian economy.

6. Limitations and Further Study

This study has not included non-economic factors to examine their relationship with foreign investment in Indonesia. For further research, it is recommended to add non-economic variables to find out how they affect foreign direct investment.

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Authors' Contributions

Adya Utami Syukri is responsible for correspondence, literature review, and writing the Introduction section; Basri Hasanuddin - literature review and writing the Literature Review section; Abdul Hamid Paddu - writing the Methodology and Conclusion sections; Sultan Suhab - writing the Literature Review and Conclusion sections.

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