

Impact of Foreign Investment and Key Macroeconomic Variables Affecting The Economic Growth of Indonesian Economy

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ABSTRACT

Foreign investment, together with local investment, is a major source of economic growth. It examines the impact of foreign investment and macroeconomic variables like inflation and exchange rate on Indonesia's economic growth from 1990 to 2020. The unit root test is used to determine time series stationary qualities. The ARDL model was used to determine long-term and short-term relationships between model variables. The study's empirical findings suggest that foreign investment boosts economic growth in Indonesia, but inflation and exchange rate drag it down. Indonesia's economic growth varies due to its unique shocks, according to variance decomposition.

INTRODUCTION

Indonesia's financial deregulation unleashes a flood of foreign capital. These include foreign portfolio investment (FPI) and foreign direct investment (FDI). Foreign investors employ FPIs to diversify risk. FDI is a cross-border investment category where an investor from one country exerts significant influence over a company from another. Both sources of foreign money can spur economic growth, directly or indirectly. This study's major goal is to determine how foreign capital affects Indonesia's economic growth.

FDI is a composite package that includes physical capital, production techniques, managerial skills, products and services, marketing expertise, advertising and business organisational processes (Thirlwall, 1999 & Zhang, 2001). As an element of aggregate demand, an increase in the investment rate generally has an effect on the increase in a country's output. Therefore, foreign direct investment has a positive effect on a country's economic development (Hermes & Lensink 2003). Conversely, a decrease in the investment rate will result in less economic growth. For this reason, the Government is trying to attract foreign investors to invest in host countries to accelerate the economic performance of the country. The financial liberalization adopted by Indonesia triggers various forms of foreign investment to boost the economy.

FPI helps build a strong local capital market and benefits the host country. Liquidity in the stock market leads to a deeper and broader market (Levine and Zervos 1996). Stronger access to money at reduced costs provides better support for economic activities (La Porta, et al. 1998; Bekaert and Harvey 2003). In this aspect, FPIs entering the stock market help enterprises overcome financial restraints (Laeven 2003; Knill 2004). Portfolio investment is a type of investment where capital is placed in the capital market in the form of shares. Individuals, companies, pension funds, and mutual funds invest in stocks, bonds, and CDs issued by private and public companies. So you may finance local businesses and build the local capital market with professionalism and openness. Portfolio flows can be dangerous, as large portfolio investments can create substantial exchange rate volatility, asset price over- or undervaluation, and banking crises. These varied shocks complicate monetary policy in developing market nations, which channel capital flows to growth. In

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short, it is necessary to monitor the evolution of portfolio flows and to maintain monetary policy stability to attract portfolio investors to invest in the host countries.

The history of the existence of foreign direct investment and foreign portfolio investment in Indonesia began with the Dutch Colonial Government in 1870. This period was marked by the enactment of the agrarian law, which later initiated the flow of FDI in Indonesia (Bank of Indonesia, 1987). The Indonesian Government began liberalizing its capital account regime in 1967. After adopting a floating exchange rate system in 1970, the financial sector was liberalised in the 1980s. This extensive exposure to investment flows makes Indonesia an ideal candidate for empirical research into its effectiveness in promoting economic growth. Although the Indonesian government has long sought to attract foreign investment, little has been done to examine its impact during the past 30 years. Indonesia, as a developing country, needs a large enough fund to finance development. The investment can be used as a source of funding to cover funding constraints in Indonesia's economic development. In addition to efforts to mobilize funds from within the country, efforts are also made outside of government loans, such as the flow of capital between countries in the form of foreign investment has an impact on economic growth in beneficiary countries, mainly through direct capital transfer, technology, management skills or those strictly related to production efficiency problems and have an indirect impact through external side effects.

This study also considers that inflation is an important indicator in analysing a country's economy, especially in relation to its broad impact on aggregate macroeconomic variables like economic growth. It also plays an important role in influencing the mobilization of funds through formal financial institutions. The effect of inflation on investment activities has a negative relationship (Fisher, 1993 & Barrow, 1995). Where a high rate of inflation will reduce the level of investment due to the high cost of the investment itself. Conversely, a low inflation rate will keep investment costs low, thus stimulating foreign direct investment in domestic countries. Therefore, investors will feel safer investing when the inflation rate in a country tends to be stable or low, i.e. an increase in inflation will reduce investors' interest in investing, instead, if inflation falls, investments will increase (Mallik and Chowdhury, 2001). In the Indonesian economy in 1998, the Bank of Indonesia, as the institution responsible for inflation rate stability, promptly formulated and implemented a monetary policy to keep inflation low, as well as to maintain and manage exchange rate stability. However, in reality, achieving the goal of maintaining exchange rate stability dominates the monetary policy goal. Achieving growth in terms of monetary magnitude and inflation is often overlooked. With the increase in capital inflows in the early 1990s, the goal of working on a monetary basis has become less controllable. With increasing pressure on the rupee, the Bank of Indonesia abandoned its intervention in August 1997 and the rupee exchange rate fluctuated.

Eight business categories are closed to both domestic and foreign investment. These are: germ plasma cultivation, natural resource concessions, logging contractors, taxi/bus transportation, small-scale sailing, trading and trading support services, radio and television broadcasting services, and film production services companies. The effect of the exchange rate on investments occurs in several ways, notably on the demand side and on the supply side. In the short term, a decrease in the exchange rate will reduce investment due to its negative effect on internal absorption or the so-called reducing effect of spending. This is because a decrease in the exchange rate will cause the real value of public goods to rise in the price level in general and further reduce the internal demand of the community. The above symptoms at the enterprise level will be worked out by a decrease in investment spending and capital allocation. On the supply side, the effect of the change aspect of spending will change the exchange rate of investments relatively erratically. An exchange rate depreciation (weakening of the exchange rate) can increase foreign investment because investors can invest at low prices with high yields.

LITERATURE REVIEW

A systematic literature review is critical for research since it provides comprehensive information about the subject and helps define the study's objectives. Many empirical studies have been done on the relationship

between FDI and economic growth using various methodologies. To study the empirical link between foreign investment and economic growth, most researchers use various theories or hypotheses.

Abdul and Ilan (2007) used detailed sectoral data for FDI inflows to Indonesia from 1997-2006 to examine the influence of FDI on economic growth. Globally, FDI appears to boost economic growth. However, when comparing average growth rates across sectors, the beneficial effect of FDI is lost, and the positive relationship between FDI and economic growth is concluded. Bengoa and Sanchez (2003) used panel data from 18 Latin American nations from 1970 to 1999 to estimate the FDI-growth connection. They found that FDI boosts economic growth in host countries. A study by Marwah and Tavakoli (2004) looked at FDI's impact on economic growth in Thailand and Malaysia. Using annual data from 1970 to 1998, they discovered that FDI boosts economic development in all four countries. Bende-Nabende and Ford (2003) studied the impact of FDI on the ASEAN-5's economic growth from 1970 to 1996. They found that FDI directly or indirectly boosts economic growth. They found a favourable association between FDI and economic growth in Indonesia, Malaysia, and the Philippines but a negative relationship in Singapore and Thailand.

Foreign direct investment may potentially harm the host country. Foreign corporations may only invest in profitable projects. It drives away domestic enterprises, lowering national welfare (Hanson, 2001). From 1979 to 1989, Aitekn and Harrison (1999) found no evidence of favourable spillovers from international enterprises to domestic firms in Venezuela. And in Morocco, a developing country, Mansfield and Romeo (1980) found no positive FDI effect on economic growth. While there is optimism about FDI's role in economic growth, there is also pessimism. So it's vital to understand how FDI affects the economy of LDCs.

At the same time, foreign portfolio investment helps strengthen a local capital market and benefits the host country. A deeper and broader capital market is the result of increased FPI (Levine and Zervos 1996). The multiplier effect extends the wealth effect's impact on the stock market. In this way, money flows spur economic growth and enhance wealth creation.

Ultimately, easier access to capital via portfolio investments leads to more effective capital allocation (Wurgler 2000, Love 2003) and (Rajan and Zingales 1998).

Despite its many benefits, FPI may harm the host economy. FPI's potentially harmful characteristics stem from its short-term and consequently volatile nature. Indeed, FPI volatility has been seen as a primary cause of financial market distress and the Financial Crisis. Large and rapid portfolio investment reversals often induce fear in the financial market, as they are interpreted as a sign of imminent financial disaster (Knull 2004). (Sula and Willet 2006). More crucially, as underlined by Henry (2003) and Demirguc-Kunt and Detragiache (1999), the volatility of portfolio investments exacerbates the impact of a financial crisis. Instability in the FPI complicates macroeconomic stabilisation policies. Money supply, exchange rate level, and stock market volatility are all affected by uncertainty in FPI flow (Patro and Wald 2005). Particularly, excessive capital inflows due to high capital mobility could lead to asset price bubbles and inflation, while unexpected portfolio withdrawals followed by substantial asset price corrections can seriously harm the economy. Based on monetary policy, Ihsan and Firmansyah (2020) investigated the causes and effects of portfolio flow in Indonesia. To investigate the relationships between portfolio investment, global and domestic macroeconomic indicators, and financial variables, the research illustrates that portfolio flow shocks can impact economic growth.

The relationship between inflation and growth remains a controversial one in both theory and empirical findings. Empirical studies have shown that the relationship between economic growth and inflation may be positive, negative and neutral. Today, there are no doubts that high inflation has a negative effect on economic growth. Sergii (2009) found that the growth-inflation relationship was strictly concave above a certain threshold. The primary finding was that inflation above 8% slows economic growth, whereas below 8% boosts it. Fischer (1993) concluded that moderate inflation would not affect growth negatively. On the other hand, Ghosh and Phillips (1998) put forward that even moderate rates of inflation would affect growth negatively.

Barro (1996) stressed the fact that high inflation reduces the level of investment and such reduction adversely affects economic growth.

The exchange rate is a key macroeconomic factor that affects international trade and the real economy of each country. It is a key economic indicator in global trade management. It compares the value of domestic money to international money. Exchange rates are vital because they allow us to compare global goods and services. This section examines an empirical study to explain the relationship between GDP and economic exchange rates. Aman et al. (2013) used three-stage least square approaches to examine the exchange rate and economic development in Pakistan from 1976 to 2010. They proved that the exchange rate promotes export and import replacement industries, therefore increasing economic growth. To analyse the impact of the exchange rate on Nigerian economic growth from 1970 to 2010, Obansa et. al. (2013). The exchange rate had a significant positive impact on economic growth. So they identified a link between economic growth and real exchange rate depreciation. The exchange rate and economic growth were studied in 20 African countries from 1981 to 1999 by Yiheyis (2006). An unbalanced panel data study revealed that depreciation of local currencies slowed economic growth.

From 1983 to 2004, Blecker and Razmi (2008) looked at the influence of devaluation on economic growth in 17 developing nations. The exchange rate and economic growth were found to be negatively related to dynamic panel data analysis (GMM). In Indonesia, Hossain and Akhtar (2005) explored the causal relationship between money growth, inflation, devaluation, and economic growth. Three hypotheses are examined: Do money supply increases generate inflation? Does Granger currency devaluation generate inflation? Lastly, is inflation a factor in growth? The empirical data shows a short-run bi-directional connection between money supply expansion and inflation. The results imply that there was no short-run causation between inflation and economic growth for the whole sample period or any sub-sample period.

To examine the impact of the currency rate, inflation, capital, and labour force on Indonesian economic growth. It uses secondary data from the Central Bureau of Statistics and Bank Indonesia on the rupiah-dollar exchange rate, inflation, GDP, and labour rate. The capital positively affects economic growth. Inflation and exchange rate have a cyclic influence on economic growth. Inflation, in particular, reduces economic growth by lowering interest rates and capital.

Rodrik (2008) identified that growth in a country's or region's ability to meet the population's economic requirements. The gross domestic product measures economic growth. Inflation, interest rates, and currency rates are used as supporting variables. Interest rates have a big negative impact on GDP, while exchange rates have a significant positive impact, and inflation has no major impact. Using multiple linear regressions, Irsania and Noveria (2014) studied the association of foreign direct investment, inflation, unemployment, and exchange rate on Indonesian economic development. The conclusion shows that FDI, inflation, employment, and currency rate all have a major impact on economic growth. Thus, rising exchange rates and inflation rates reduce economic growth. The employment rate and FDI also have a substantial impact on economic growth. Indonesia's economic growth will increase if FDI and employment rise.

Arintoko and Insukindro (2017), studied macroeconomic models that include the production gap and the degree of inflation. To adapt to the data, new macroeconomic theories applicable to Indonesian conditions, and the suitable approach, employed structural co-integrating vector auto-egression. According to the study, FDI and FPI boost economic growth while the exchange rate slows it down. Barguelli & Ben-Salha (2018) found that changes in macroeconomic variables such as exchange rate, government expenditure, and GDP impact foreign direct investment. While inflation reduces foreign direct investment in Indonesia. The monetary crisis has hampered the growth of FDI in Indonesia. The estimated effects of inflation, exchange rate, and GDP on foreign direct investment are positive, with the exception of inflation being non-significant. Government spending has a negative and considerable effect on FDI in Indonesia.

Frankel & Rose (2002) claim that FDI represents a long-term investment for emerging countries, FDI helps

Indonesia's economic development. Increased foreign investment can immediately improve Indonesian living standards and economic performance. According to Wulandari et al. (2020), macroeconomic variables such as investment, export, and e-money transactions affect economic growth in Indonesia. The VECM was used to determine long-term and short-term associations between variables. In short, investment has a favourable impact on economic growth in Indonesia, both short and long term.

OBJECTIVES OF THE STUDY

- To examine the relationship between foreign investment and the economic growth of Indonesia.
- To empirically evaluate the explanatory role of macroeconomic variables in affecting the economic growth of Indonesia.

Hypothesis of the study

Foreign Investments (FDI and FPI) have a significant and positive impact on economic growth in Indonesia. Inflation has a significant and negative impact on economic growth in Indonesia.

Exchange rate has a significant and negative impact on economic growth in Indonesia.

RESEARCH METHODOLOGY

Data Source

Data required for the study is collected from secondary source and its determinants of economic growth in Indonesia are collected from World Economy Database 2020. The data collected for the study covers from 1991 to 2020.

Data Analysis

The present study uses both descriptive and inferential statistics to analyse and evaluate the results. Descriptive Statistics have been used to know the structural properties of data. Auto-Regressive Distributed Lag (ARDL) Model is used to determine the macro-economic determinants of economic growth in Indonesia. The Augmented Dicky Fuller (ADF) is used for testing the stationary properties of the data. Akaike Information Criteria (AIC) was used for the ARDL specification by using Eviews 9.

Figure 1: Foreign Investment and Economic Growth in Indonesia

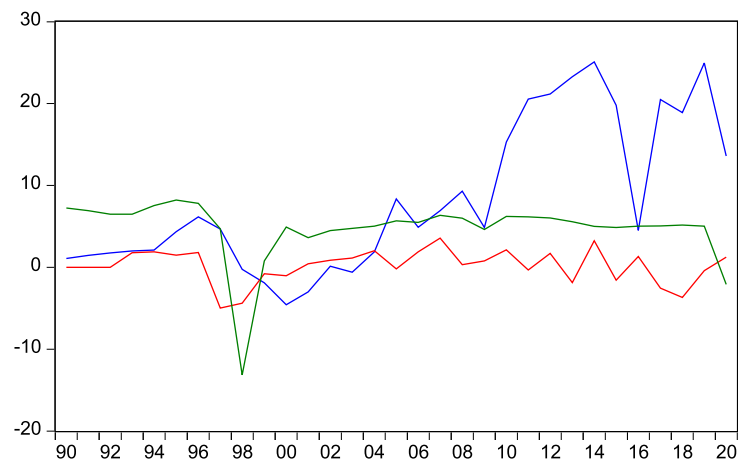


Table 1: Correlation between Foreign Investment and Economic growth in Indonesia

FDI	FPI	GDP
1.00	-0.06	0.14
-0.06	1.00	0.42
0.14	0.42	1.00

Source: Author's calculation

Indonesian liberalisation began in 1967 with the enactment of Investment Law No. 1. Indonesia's economy grew rapidly in the following years, averaging roughly 7.3 percent. As shown in Figure 1 and Table 1, Foreign Investment positively impacts Indonesia's economic growth. The empirical finding reveals that Foreign Investment (FDI and FPI) positively affects Indonesia's economic growth. Indonesia's economic history since independence can be split into four phases: pre-1965, 1965-1986, 1986-1997, and post-1997. Since the start of the economic crisis in mid-1997, FDI and FPI have fallen by over two-fold. Economic reform commitments are being implemented unevenly, the judicial system is unreliable, security difficulties are prevalent, and current investors are being treated unfairly. From 1997 to 1999, manufacturing got about two-thirds of total realised FPI inflows, but that share fell sharply thereafter. The privatising initiative has missed its targets for three years. To solve these issues, the Indonesian government encouraged more active FDI promotion. The Capital Investment Coordinating Board (BKPM/BKPMMD) was responsible for approving project applications. Following the above deregulation, the Indonesian government removed numerous FDI and FPI restrictions in retail and wholesale markets in June 1998, subject to a cooperative agreement with a small firm. From 1997 to 2006, there were fundamental changes in the realisation of FDI inflows.

The reasons for the weakness in attracting foreign investment are well known. Indonesia keeps many economic sectors closed to foreigners or only open to a limited extent in order to protect domestic companies from competition. In addition, there is an excessive bureaucracy with overlapping legislation between the central government and provincial authorities. Labour law, which is extremely rigid in regional comparison, is particularly deterrent. We discovered that FDI and FPI appear to have a positive effect on economic growth. However, the benefits of FDI on economic growth differ by industry and there are no aggregate effects. Oddly enough, inflation and exchange rate affect economic growth. According to the findings, extractive FDI may not boost economic growth. More studies may show that policies should be formulated to maximise the benefits of FDI and FPI inflows through suitable sectoral composition and by creating the circumstances for beneficial FDI in sectors where the current institutional structure appears to offer no such benefit. In short, FDI and FPI increase GDP. Foreign investment boosts economic growth. An econometric model can determine the exact impact of foreign investment on economic growth.

Empirical Model

There are many other Macroeconomic factors affecting the performance of the Economic Growth of Indonesia. The macroeconomic theory has identified various factors that influence the growth of a country from the classical, neoclassical and new growth theories. The economic growth rate of Indonesia is formulated with the four macroeconomic determinants of independent variables. Foreign direct investment, foreign portfolio investment, exchange rate and inflation rate of the host country are the independent variables of the model. The expected relationship between economic growth and its macroeconomic determinants in Indonesia is exhibits in Table 2. We develop a linear equation model such that:

$$GDP = F(FDI, FPI, CPI, EX,)$$

GDP= Gross Domestic Product

FDI= Foreign Direct Investment

FPI= Foreign Portfolio Investment

CPI= Consumer Price Index

EX= Exchange Rate.

=Error Term

Table 2: Expected Relationship of Growth Rate and Macro-Economic Variables in Indonesia

Variable Name	Description	Expected Relationships
FDI	Foreign Direct Investment	Positive or Negative
FPI	Foreign Portfolio Investment	Positive or Negative
CPI	Consumer Price Index	Positive or Negative
EX	Exchange Rate.	Positive or Negative

Source: Review of Literature

Unit Root Test

Before investigating co-integration and long-run relationships, economic time series must be tested for stationary. The ADF is used on the variables in level and initial differences. It is evident from the Table 3, the order of integration of all the variables used in the subject field is either zero or one i.e. I(0) or I(1). As can be seen from Table 3, foreign direct investment, foreign portfolio investment and exchange rate are integrated of order I(1). But gross domestic product, and consumer price index are integrated of order zero i.e. I(0).

Table 3: Augmented Dickey-Fuller (ADF) Test

Variables	Stationary
GDP	I(0)
CPI	I(0)
FDI	I(1)
FPI	I(1)
EX	I(1)

Source: Author's calculation

Auto-Regressive Distributed Model (ARDL Model)

An ARDL model is applicable when all the variables are stationary at different levels. In this approach, variables can be stationary at level and first difference. This model estimates the dynamic relationship between variables of the model. It is possible to transform the model into a long-run form even if the model has a different level of integration (co-integration). To test the existence of a long-run relationship of an ARDL model, bounds test is conducted.

Table 4: ARDL Model for GDP and its Macroeconomic Indicators in Indonesia

Dependent Variable: GDP
 Method: ARDL
 Maximum dependent lags: 4 (Automatic selection)
 Model selection method: Akaike info criterion (AIC)
 Dynamic regressors (4 lags, automatic): FDI FPI CPI EX
 Fixed regressors: C
 Number of models evaluated: 2500
 Selected Model: ARDL(4, 4, 4, 4, 4)

Table 1: Correlation between Foreign Investment and Economic growth in Indonesia

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
GDP(-1)	-0.893142	0.705481	-1.266004	0.3330
GDP(-2)	0.246700	0.691290	0.356869	0.7553
GDP(-3)	-1.192789	0.444044	-2.686196	0.1151
GDP(-4)	-0.927363	0.211967	-4.375025	0.0485
FDI	0.077812	0.050054	1.554576	0.2603
FDI(-1)	-0.067367	0.077085	-0.873920	0.4743
FDI(-2)	-0.039609	0.060226	-0.657667	0.5783
FDI(-3)	-0.202765	0.053880	-3.763277	0.0639
FDI(-4)	0.512176	0.128476	3.986563	0.0575
FPI	0.339576	0.087851	3.865350	0.0609
FPI(-1)	0.961429	0.184542	5.209804	0.0349
FPI(-2)	0.565373	0.183591	3.079527	0.0912
FPI(-3)	-0.062829	0.241699	-0.259947	0.8192
FPI(-4)	0.387252	0.245662	1.576363	0.2556
CPI	-0.053857	0.071478	-0.753478	0.5298
CPI(-1)	-0.154754	0.120567	-1.283548	0.3279
CPI(-2)	0.116170	0.157248	0.738766	0.5370
CPI(-3)	-0.195811	0.062628	-3.126573	0.0889
CPI(-4)	-0.438697	0.121443	-3.612370	0.0688
EX	-0.001374	0.000529	-2.596205	0.1218
EX(-1)	0.000496	0.000561	0.883940	0.4700
EX(-2)	1.41E-05	0.001085	0.013030	0.9908
EX(-3)	-0.001752	0.001250	-1.400908	0.2962
EX(-4)	0.001688	0.000925	1.824514	0.2096
C	32.26413	5.791428	5.571015	0.0307

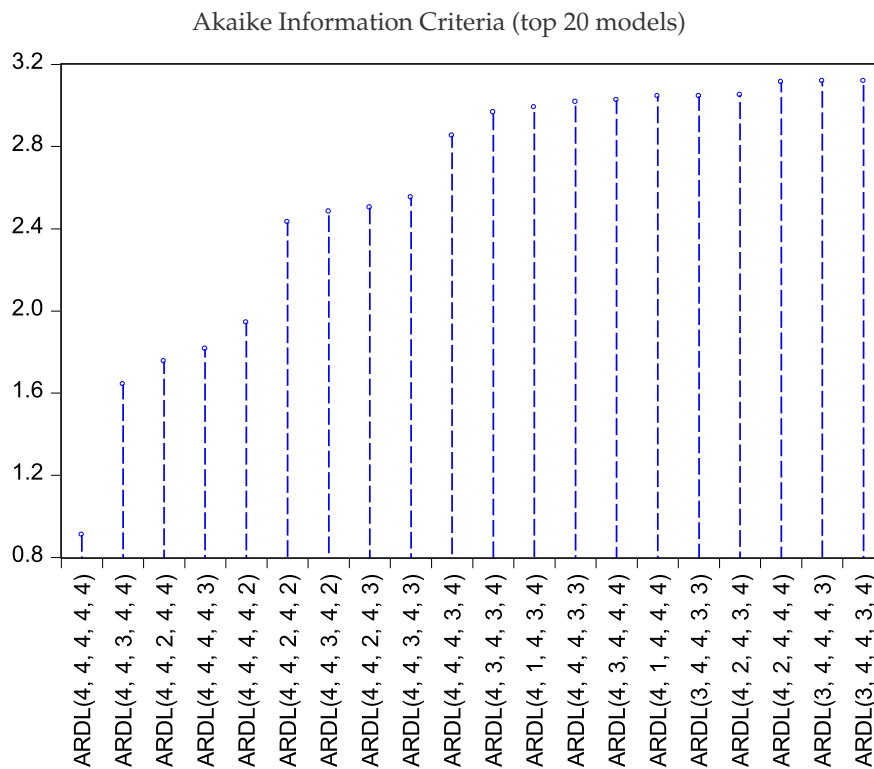
R-squared	0.998541	Mean dependent var	4.410000
Adjusted R-squared	0.981032	S.D. dependent var	4.028930
S.E. of regression	0.554877	Akaike info criterion	0.909022
Sum squared resid	0.615777	Schwarz criterion	2.108871
Log likelihood	12.72820	Hannan-Quinn criter.	1.265800
F-statistic	57.03135	Durbin-Watson stat	1.966814
Prob(F-statistic)	0.017369		

*Note: p-values and any subsequent tests do not account for model Selection.

Optimum Lag Length Criteria

The model must display the optimal lag length when including lagged values. The model selection criterion picks the best lag length. The Akaike Information Criterion (AIC) was employed since it has the least penalty or error. Figure 2 shows the 20 best models with the lowest AIC values. As shown in Figure 2, the ARDL model's ideal lag length is (4, 4, 4, 4, 4).

Figure 2: Akaike Information Criterion



Ramsey RESET Test

Ramsey proposed the Regression Specification Error Test (Ramsey, J. B. 1969) in 1969. This test checks whether model errors have a multivariate normal distribution. Table 5 shows an estimated probability of 0.20, which is greater than 0.05. This indicates a well-defined model with no significant missing variables.

Table 5: Ramsey RESET Test of GDP and its macroeconomic indicators

Ramsey RESET Test			
Equation: UNTITLED			
Specification: GDP GDP(-1) GDP(-2) GDP(-3) GDP(-4) FDI FDI(-1) FDI(-2)			
FDI(-3) FDI(-4) FPI FPI(-1) FPI(-2) FPI(-3) FPI(-4) CPI CPI(-1) CPI(-2)			
CPI(-3) CPI(-4) EX EX(-1) EX(-2) EX(-3) EX(-4) C			
Omitted Variables: Squares of fitted values			
	Value	df	Probability
t-statistic	2.989030	1	0.2055
F-statistic	8.934298	(1, 1)	0.2055
F-test summary:			
	Sum of Sq.	df	Mean Squares
Test SSR	0.553792	1	0.553792
Restricted SSR	0.615777	2	0.307889
Unrestricted SSR	0.061985	1	0.061985

Source: Author's calculation

ARDL Bound Test

ARDL bound test approach, developed by Pesaran et al. (2001), investigates the long-run relationship among variables in the model. After determining the order of integration and lag length, the next step is to employ bounds test to confirm the long-run relationship among the variables. In ARDL, the first step is to investigate the long-run relationship among variables in the model using an F - test. The second step of this analysis is to estimate the coefficients of the long-run relationship with the error correction representation of the ARDL model. Here, the dependent variable is always affected by a number of explanatory variables in the current period as well as in the earlier period. The bounds test result (refer Table 6) confirms the long-run relationship because the calculated F-statistic value is 10.58, which is greater than the critical value of the upper level of bounds at the 5% level of significance. This evidence gives a strong indication of the existence of a long-run relationship among the variables included in the model.

Table 6: ARDL Bound Test for Normalizing GDP and its Macroeconomic Indicators

Null Hypothesis: No long-run relationships exist		
Test Statistic	Value	k
F-statistic	10.58070	4
Critical Value Bounds		
Significance	I0 Bound	I1 Bound
10%	2.45	3.52
5%	2.86	4.01
2.5%	3.25	4.49
1%	3.74	5.06

Source: Author's calculation

Table 7: Estimated Co-integrating Form and Long-run coefficients using ARDL Approach

ARDL Co-integrating And Long Run Form				
Dependent Variable: GDP				
Co-integrating Form				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(GDP(-1))	1.873452	0.396001	4.730926	0.0419
D(GDP(-2))	2.120152	0.552967	3.834138	0.0618
D(GDP(-3))	0.927363	0.211967	4.375025	0.0485
D(FDI)	0.077812	0.050054	1.554576	0.2603
D(FDI(-1))	0.039609	0.060226	0.657667	0.5783
D(FDI(-2))	0.202765	0.053880	3.763277	0.0639
D(FDI(-3))	-0.512176	0.128476	-3.986563	0.0575
D(FPI)	0.339576	0.087851	3.865350	0.0609
D(FPI(-1))	-0.565373	0.183591	-3.079527	0.0912
D(FPI(-2))	0.062829	0.241699	0.259947	0.8192
D(FPI(-3))	-0.387252	0.245662	-1.576363	0.2556
D(CPI)	-0.053857	0.071478	-0.753478	0.5298
D(CPI(-1))	-0.116170	0.157248	-0.738766	0.5370
D(CPI(-2))	0.195811	0.062628	3.126573	0.0889
D(CPI(-3))	0.438697	0.121443	3.612370	0.0688
D(EX)	-0.001374	0.000529	-2.596205	0.1218
D(EX(-1))	-0.000014	0.001085	-0.013030	0.9908
D(EX(-2))	0.001752	0.001250	1.400908	0.2962

D(EX(-3))	-0.001688	0.000925	-1.824514	0.2096
CointEq(-1)	-3.766594	0.659070	-5.715011	0.0293
21				
Cointeq = GDP - (0.0744*FDI + 0.5816*FPI -0.1930*CPI -0.0002*EX +8.5659)				
Long Run Coefficients				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
FDI	0.074403	0.023003	3.234537	0.0837
FPI	0.581640	0.088695	6.557724	0.0225
CPI	-0.192999	0.035706	-5.405301	0.0326
EX	-0.000246	0.000015	-16.709813	0.0036
C	8.565864	0.331694	25.824596	0.0015

Source: Author's calculation

Table 7 estimates the result of the coefficient of long-run relationship among variables by applying ARDL Methodology. A high level of GDP is a strong indication of market opportunities. Therefore, the growth rate is a good indicator of growing market potential as well as the economic prosperity of a country. The result shows that foreign investments like Foreign Direct Investment (FDI), and Foreign Portfolio Investment (FPI) have a positive effect on the real economic growth rate or the economic performance of the host country. But inflation rate and exchange rate have a significant negative effect on economic growth. Inflation is closely related to interest rates, which can influence exchange rates. Most countries try to balance interest rates and inflation, but the interplay is complex and difficult to control. Low-interest rates boost consumer spending, economic growth, and currency value. Inflation may occur if consumer spending rises to the point that demand exceeds supply. But low-interest rates rarely entice international investors. Higher interest rates tend to attract international investment, increasing currency demand. The ECT value of 3.76 indicates that 376 per cent of the correction in disequilibrium occurs annually. The Error Correction Term coefficient is extremely significant with a predicted sign, confirming the bound test for co-integration.

Table 8: Variance Decomposition of Gross Domestic Product of Indonesia

Variance Decomposition of GDP:						
Period	S.E.	GDP	FDI	FPI	CPI	EX
1	3.253722	100.0000	0.000000	0.000000	0.000000	0.000000
2	4.772880	58.98954	0.805774	20.13635	17.50071	2.567625
3	5.215264	52.34718	5.919034	22.83334	14.66405	4.236385
4	5.716110	45.17892	8.890543	25.00301	17.32473	3.602798
5	5.779791	44.27121	9.146839	24.56169	17.30182	4.718444
6	5.884946	42.70461	9.419514	26.31924	17.00483	4.551807
7	5.913330	42.58147	9.505543	26.06922	17.29640	4.547365
8	5.934204	42.51366	9.446776	26.17214	17.34821	4.519209
9	5.942946	42.47453	9.422190	26.09703	17.47059	4.535669
10	5.961460	42.28892	9.569149	25.98261	17.64910	4.510215

Source: Author's calculation

The Variance Decomposition Analysis is a method for assessing the effects of shocks on dependent variables. It assesses how much of the forecast error variation is explained by changes to each explanatory variable over time. Shocks usually explain the majority of error variance, though they can affect other variables as well. It exhibits that in the long run (after a period of 10 years) 42 percent of fluctuation economic growth (GDP) by itself and 58 percent are determined by other macroeconomic indicators. i.e. 10% by foreign direct investment, 26% by foreign portfolio investment, 18% by consumer price index, and 5% by exchange rate. In short, FPI and CPI are the main factors which are responsible for the fluctuation of growth rate in Indonesia in the coming years.

CONCLUSION

A number of macroeconomic variables influence a country's economic growth. The impact of these economic variables varies between industrialised and developing countries. The study's main goal is to evaluate significant macroeconomic factors affecting Indonesia's real GDP growth from 1990 to 2020 using ARDL models and annual data. After implementing a free market system that promotes economic progress, Indonesia is heavily reliant on global trade. The empirical finding demonstrates that all model variables tested impacted economic growth. The study found that foreign direct investment, foreign portfolio investment, inflation, and the currency rate all affect long-run economic growth in Indonesia. Foreign investments like foreign direct investment, and foreign portfolio investments have a positive effect on the real economic growth rate. However, it should be considered that policies to attract foreign investment need to be constructed with a long-term view to maximize the positive effects of foreign investment on the country's economy. But inflation rate and exchange rate have a significant negative effect on economic growth. That means inflation and exchange rate volatility are harmful to the economic growth of Indonesia. Thus, this study suggests and proposes that the Government ensure stable macroeconomic policies to attract more foreign investment into Indonesia. The error correction term is negative and significant, indicating that the model's variables are in the long-run equilibrium. The government should continue to provide direct and indirect foreign aid to countries that develop public capital, as this increases mass productivity and hence increases long-term growth in Indonesia.

Policy Implications

The result shows that there is a significant positive impact of FDI on the economic growth of Indonesia. Therefore, this research study recommends that FDI facilitate economic growth, so the government has to exert much effort in order to attract more FDI into the country. Foreign portfolio investments indirectly boost Indonesia's economic growth, the government should implement policies to foster long-term capital market and economic growth. This will help attract long-term funds for constructive objectives.

This study revealed that inflation has hampered Indonesia's economic progress. Thus, limiting inflation is a prerequisite for boosting economic growth, both for domestic policymakers and international investors. Thus, policymakers should aim to keep inflation low (single digit). Inflation rate stability is vital for the country's economic progress. Attempts should be made to keep inflation below 1%.

This study's findings suggest that exchange rate volatility harms Indonesia's economy. A strong exchange rate reduces production costs and controls inflation by lowering the cost of foreign goods and services. Thus, the study advises policymakers to keep the exchange rate high to enhance Indonesia's economy.

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