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THE EFFECT OF FDI, EXPORTS, INFLATION ON ECONOMIC GROWTH OF THE AMERICA AND INDIA 1983-2022

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Abstract

This study aims to examine the influence of Foreign Direct Investment (FDI), exports, and inflation rates on economic growth in the United States and India. Economic growth is used as an indicator to determine whether a country is classified as a developed or developing country. In 2022, the United States was ranked first as the country with the highest economic growth in the world, reflected in the Gross Domestic Product (GDP) which exceeded USD 25 trillion, while India was ranked fifth with a GDP of USD 3.4 trillion. In the global economy, globalization has brought many positive impacts, one of which is economic openness. This includes international trade without physical barriers and increased foreign investment in various countries. As a result, countries have adjusted their economic policies in response to globalization to encourage economic growth. In addition, external factors have become a focus for countries in managing their economies due to the economic interdependence between countries. By comparing the United States and India, this study seeks to understand the differences in economic growth and policies implemented by these two countries. The Partial Adjustment Model (PAM) approach is used to analyze the United States and India using time series data from 1983 to 2022, which allows understanding the short-term and long-term impact of the independent variables on the dependent variable. The results reveal that in the United States, Foreign Direct Investment and inflation rate significantly affect economic growth, while exports have no effect. In contrast, for India, only Foreign Direct Investment has an impact on economic growth, while exports and inflation rate have no significant effect.
Keywords: GDP, FDI, Export, Inflation, Partial Adjustment Model

Abstrak

Penelitian ini bertujuan untuk mengkaji pengaruh Foreign Direct Investment, ekspor, dan tingkat inflasi terhadap pertumbuhan ekonomi di Amerika dan India. Pertumbuhan ekonomi digunakan untuk melihat apakah suatu negara dikatakan maju atau berkembang. Pada tahun 2022, Amerika merupakan peringkat pertama sebagai negara dengan pertumbuhan ekonomi tertinggi di dunia, dicerminkan melalui nilai Gross Domestic Product yang lebih dari USD 25 triliun sedangkan India di peringkat lima dengan GDP sebesar USD 3,4 triliun. Dalam perekonomian dunia, globalisasi membawa banyak dampak positif. Salah satu dampak positif dari globalisasi yaitu keterbukaan ekonomi. Mulai dari perdagangan internasional karena tidak adanya batasan secara fisik, hingga penanaman modal asing semakin digencarkan di tiap negara. Hal tersebut, membuat negara melakukan penyesuaian dengan pengglobalan kebijakan ekonomi untuk mengupayakan peningkatan pertumbuhan ekonomi. Selain itu, faktor-faktor eksternal juga menjadi perhatian negara dalam menjalankan perekonomiannya karena adanya hubungan ekonomi antar negara. Melalui perbandingan antara Amerika dan India, dapat diketahui bagaimana pertumbuhan ekonomi dan kebijakan yang dilakukan oleh kedua negara. Pendekatan Partial Adjustment Model (PAM) digunakan dalam penelitian ini untuk menganalisis Negara Amerika dan India dengan data time series tahun 1983-2022 sehingga diketahui pengaruh jangka pendek dan jangka panjang variabel bebas terhadap variabel terikat. Hasil penelitian mengungkapkan bahwa di Amerika, variabel Foreign Direct Investment dan tingkat inflasi memiliki pengaruh terhadap pertumbuhan ekonomi. Sedangkan variabel ekspor tidak memiliki pengaruh terhadap pertumbuhan ekonomi Amerika. Selanjutnya, untuk India didapatkan hasil bahwa hanya variabel Foreign Direct Investment yang memiliki pengaruh terhadap pertumbuhan ekonomi.

Sedangkan variabel ekspor dan tingkat inflasi tidak memiliki pengaruh terhadap pertumbuhan ekonomi India.
Kata kunci: GDP, FDI, Ekspor, Inflasi, Partial Adjustment Model

INTRODUCTION

Indicators that reflect a country is said to be advanced or developing its economy can be seen from economic growth. Economic growth is an increase in activities in the economic sector that results in increased welfare and prosperity in society. The economic growth achieved by a country from period to period can be used as an indicator of a country's success in controlling its economic activities.[1] Economic growth is very important for a country. A good level of economic growth has an impact on improving the standard of living and welfare of its people. Increasing economic growth is needed to catch up on the economic backlog for a country. The success of all elements in a country is reflected in the rapid economic growth of the country. An important thing that needs to be highlighted besides the high economic growth in a country is the equitable distribution of development for the entire community.[2]

The globalization trend in the world economy is in the spotlight. Globalization makes the economy more open and has an impact on the openness of market mechanisms through international business that is not influenced by physical boundaries.[3] Globalization of economic policy making is one of the positive impacts of globalization. In addition, globalization also provides opportunities for all countries to develop an international economy.[4] The increase in trade and capital flows between countries is a benefit of economic relations between countries. These economic relations can be created if each country carries out international economic relations.[5]

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[1] Sukirno, S. (2015). *Makroekonomi: teori pengantar*. RajaGrafindo Persada.

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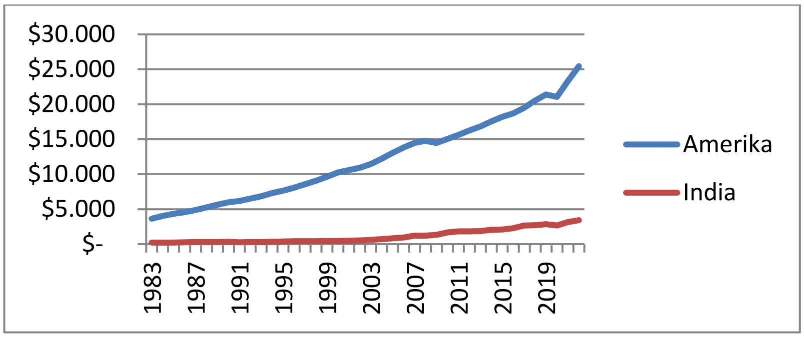
[4] Bagaskara, J. N., & Setyowati, E. (2017). Analysis Of The Influence Of Foreign Direct Investment (Fdi), Inflation And Interest Rates On Economic Growth In Indonesia. *Midyear International Conference*, *1*, 1–10. http://jp.feb.unsoed.ac.id/index.php/myc/article/view/3716

[5] Triyawan, A., & Izaty, S. S. (2022). Pengaruh Kurs, Inflasi, Ekspor dan Impor terhadap Pertumbuhan Ekonomi di Negara Austria Tahun 2000 – 2020. *Jurnal Ecodemica : Jurnal Ekonomi Manajemen Dan Bisnis*, *6*(2), 216–222. https://doi.org/10.31294/eco.v6i2.13009

According to the International Monetary Fund, America is the country with the highest economic growth as reflected in the Gross Domestic Product (GDP) value of more than USD 25 trillion. This high GDP value makes America the largest contributor to global output in the world, which is 24%. The fifth country with the highest GDP in the world in 2022 is India. India has a GDP of USD 3.4 trillion. Although India is one of the countries with the largest economy in the world, there are still many gaps in the country. The amount of GDP for some countries is used as a tool to describe the economy of a country as a whole. Based on the amount of GDP, it is used as a determinant of policies that will be formulated according to the economic conditions of the country.[6]

Graph 1

GDP Value (USD Trillions) of America and India 1983-2022



Source: World Bank, processed

According to data from the World Bank in Chart 1, the GDP value in America has continued to increase from 1983 to 2022. GDP for India has generally increased, but in some years it has decreased significantly, then moved up again. The highest GDP for America and India was in 2022, which was USD 25 trillion for America, while in India it was USD 3.4 trillion. In 2009, America experienced a decline in GDP value from USD 14.8 trillion in 2008 to USD 14.5 trillion. Although it experienced a decline in a not too large amount, it can be seen that at that time America was also affected by the financial crisis that occurred globally in 2008.[7]

Equitable development, economic stability, and public welfare are not easy to achieve. The role of investment is needed to help equitable economic development and improve the country's economy. Government policies aimed at increasing investment include foreign investment.[8] Increasing economic growth is needed so that a country does not lag behind in the

[6] Andriani, V., Muljaningsih, S., & Asmara, K. (2021). Analisis Pengaruh Penanaman Modal Asing, Ekspor, Utang Luar Negeri, dan Tingkat Inflasi terhadap Produk Domestik Bruto Indonesia. *10*(2), 95–104. https://journal.stiem.ac.id/index.php/jureq/article/view/777/0

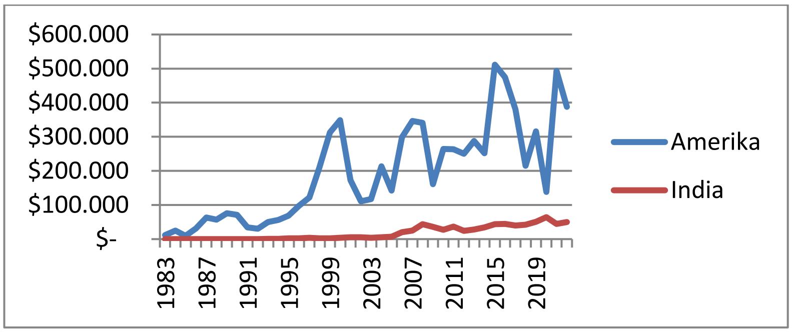
[7] Bagaskara, JN, & Setyowati, E. (2017). Analysis Of The Influence Of Foreign Direct Investment (FDI), Inflation And Interest Rates On Economic Growth In Indonesia. Midyear International Conference, 1, 1–10. http://jp.feb.unsoed.ac.id/index.php/myc/article/view/3716

[8] Sari, WNI, Setyowati, E., Putri, SM, & Faridatussalam, SR (2022). Analysis of the Effect of Interest Rates, Exchange Rate Inflation and Foreign Investment (PMA) on Economic Growth in Indonesia

economic sector. In connection with increasing economic growth, capital is needed, one of which is from investment to support the economic growth process. However, relying on domestic investment alone is still not able to meet all the capital needed. Therefore, foreign capital flows are needed to meet the lack of funds.[9]

According to a study, foreign investment is seen as having higher benefits in supporting long-term development financing than using debt. Foreign investment can be done in several ways, namely direct investment and indirect investment. Investment through direct foreign investment is considered to have more benefits because the influence felt is more pronounced.[10] Foreign Direct Investment (FDI) is a long-term investment that is not easily fluctuated due to changes in economic conditions so it is considered more profitable for the country's economic growth. FDI is considered to be more beneficial because the incoming FDI will be accompanied by technological developments, human resource developments, industrial developments, and the opening of job opportunities.[11]

Graph 2
Total FDI (USD Million) of America and India 1983-2022



Source: World Bank, processed

Based on Chart 2 sourced from the World Bank, it can be seen that the FDI flow received by America is much higher than that received by India. Although the FDI received by India is less, it does not experience large fluctuations between years compared to America. Economic openness provides great opportunities for foreign investment, especially foreign direct investment.

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[10] Anindita, F., Marbun Agus, S., & Marbun, J. (2019). *Program Studi Keuangan dan Perbankan Terapan Politeknik Negeri Jakarta (Vol. 8, Issue 1)*. *8*(1), 1455–1462.

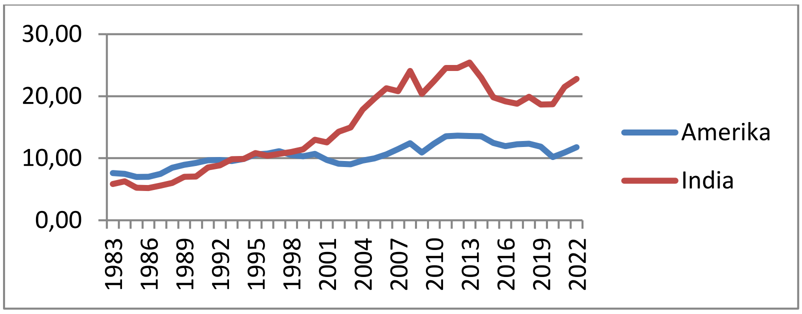
[11] Wardhani, D. P. (Ditasari), & Suharyono, S. (Suharyono). (2017). Pengaruh Nilai Total Ekspor Dan Variabel Makroekonomi Lainnya Terhadap Foreign Direct Investment (Fdi) Di Indonesia. *Jurnal Administrasi Bisnis S1 Universitas Brawijaya*, *50*(5), 171–180. https://www.neliti.com/publications/188845/

A company must have capital from foreign investors of at least 10% of the total value of the company to be said to be making foreign direct investment.[12]

According to research, a continuously growing economy is a dream for all countries. Activities in sending domestically produced goods abroad or exports can be another tool to improve the economy. Increasing exports cannot be separated from increasing labor absorption. Labor absorption can affect per capita income so that it can increase economic growth.[13] Economic openness also results in a country having a high export value so that it can increase economic growth. Other benefits of export activities for a country are increasing foreign exchange, reducing dependence on foreign countries, reducing external impacts if economic instability occurs, and advancing domestic business. In addition, exports can also increase the competitiveness of domestic products in the international arena and support the country's participation in the international economy.[14]

Graph 3

Exports (% of GDP) of America and India 1983-2022



Source: World Bank, processed

According to World Bank data in Graph 3, exports made by India in recent years have been greater than those of the United States.. The highest export volume of India occurred in 2013 at 25.43% of GDP and the lowest in 1986 at 5.20% of GDP. A year earlier, the amount of American exports was very small, at 7%. Compared to India, America's export activities did not experiencechangewhich is too significant every year. The high value of exports will increase the

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[12] Amalia, R. F., & Hasmarini, M. I. (2022). Analisis Pengaruh Keterbukaan Ekonomi terhadap Pertumbuhan Ekonomi di 6 Negara ASEAN Periode 2018-2022. *Fakultas Ekonomi dan Bisnis, Universitas Muhammadiyah Surakarta Maulidyah Indira Hasmarini Fakultas Ekonomi dan Bisnis , Universit*. *18*(2), 1318–1329.

[13] Andriani, V., Muljaningsih, S., & Asmara, K. (2021). Analisis Pengaruh Penanaman Modal Asing, Ekspor, Utang Luar Negeri, dan Tingkat Inflasi terhadap Produk Domestik Bruto Indonesia. *10*(2), 95–104. https://journal.stiem.ac.id/index.php/jureq/article/view/777/0

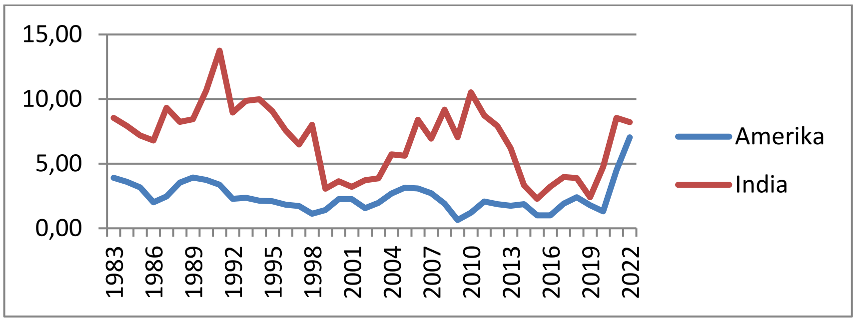
[14] Helmiyanti, M., & Khoirudin, R. (2024). Analisis Efektivitas Pengeluaran Pemerintah, Ekspor, Investasi Asing Langsung, Tenaga Kerja dan Inflasi terhadap Pertumbuhan Ekonomi Tahun 2008 – 2021 (Studi Kasus : 8 Negara ASEAN). *Jurnal Simki Economic*, *7*(1), 72–82. https://doi.org/10.29407/jse.v7i1.483

surplustradingso that GDP also increases in the country. High export value can also be one of the factors in high national income.[15]

According to research, a country's economy is closely related to the inflation rate. Inflation is an event when there is a general and continuous increase in the price of goods.[16] High inflation rates can be a sign of a financial crisis in the region. Rising prices of goods can result in reduced investor confidence in the country.[17]

Chart 4

Inflation Rate (%) AmerFish and India 1983-2022



Source: World Bank, processed

Based on World Bank data presented in Chart 4, the inflation rate in both countries is unstable. However, when compared to India, inflation in America is lower and has not experienced a significant spike. However, in 2022, inflation in America experienced a spike for the first time in the last 40 years. Previously, in 2021 the inflation rate in America was 4.50% to 7.04% in 2022. India experienced the highest inflation in 1991, which was 13.75% and the lowest in 2019 at 2.4%. An unstable inflation rate can create uncertainty in decision-making for economic actors. This situation can result in a decline in economic growth for a region.[18]

The results of the study revealed that FDI has a positive and significant influence on economic growth. The study was conducted with multiple time series regression using E-Views 9. The study is in line with the theory of Harrod and Domar, the role of investment is very important

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[15] Pangestin, Y. Y., Soelistyo, A., & Suliswanto, M. S. W. (2023). Analisis Pengaruh Investasi, Net Ekspor dan Pengeluaran Pemerintah terhadap Pertumbuhan Ekonomi Indonesia. *Jurnal Ilmu Ekonomi Terapan*, *1*(2), 88–104.

[16] Wardhani, D. P. (Ditasari), & Suharyono, S. (Suharyono). (2017). Pengaruh Nilai Total Ekspor Dan Variabel Makroekonomi Lainnya Terhadap Foreign Direct Investment (Fdi) Di Indonesia. *Jurnal Administrasi Bisnis S1 Universitas Brawijaya*, *50*(5), 171–180. https://www.neliti.com/publications/188845/

[17] Durguti, E., Tmava, Q., Demiri-Kunoviku, F., & Krasniqi, E. (2021). Panel estimating effects of macroeconomic determinants on inflation: Evidence from Western Balkans. Cogent Economics and Finance, 9(1). https://doi.org/10.1080/23322039.2021.1942601

[18] Bagaskara, J. N., & Setyowati, E. (2017). Analysis Of The Influence Of Foreign Direct Investment (Fdi), Inflation And Interest Rates On Economic Growth In Indonesia. *Midyear International Conference*, *1*, 1–10. http://jp.feb.unsoed.ac.id/index.php/myc/article/view/3716

to increase economic growth. The availability of capital will encourage the production process of goods in larger quantities.[19]

Other studies show that export value has a negative and insignificant effect on economic growth. The study used multiple regression analysis with time series data and the E-Views 9 analysis tool.[20] But other studies reveal that exports have a positive and significant effect on economic growth in the short term.[21]

Bagaskara and Setyowati in their research found that the inflation rate in a study conducted using Ordinary Least Square analysis had no effect on economic growth.[22] In contrast, other studies have identified that the inflation rate has an impact on economic growth.[23] Based on the background explanation, it can be seen that there is a relationship between FDI, exports, and inflation rates on GDP value. In addition, there are differences in results between previous studies so that a re-examination is needed regarding the influence of FDI, exports, and inflation rates on economic growth reflected in the value of GDP.

RESEARCH METHODS

This research was conducted using the United States and India in the last 40 years. The United States and India were chosen considering that according to the International Monetary Fund, both countries are included in the top ten countries with the highest economic growth.

The data used in this study uses secondary data. This secondary data was obtained from the World Bank. This data is time series data, which is data consisting of many times from an object. The data used is annual data over a period of 40 years, namely 1983 to 2022. To collect data, a documentation technique is used, which is a method carried out by collecting data from related agencies, namely the World Bank.

The dependent variable used in this study is Gross Domestic Product in the United States and India. The definition of economic growth reflected in Gross Domestic Product according to Sukirno is the development of a country's economy which causes the amount of production to

[19] Pangestin, Y. Y., Soelistyo, A., & Suliswanto, M. S. W. (2023). Analisis Pengaruh Investasi, Net Ekspor dan Pengeluaran Pemerintah terhadap Pertumbuhan Ekonomi Indonesia. *Jurnal Ilmu Ekonomi Terapan*, *1*(2), 88–104.

[20] Safitri, D. (2022). Pengaruh Ekspor, Pengeluaran Pemerintah Dan Inflasi Terhadap Pertumbuhan Ekonomi Di Kalimantan Tengah. *JEPP : Jurnal Ekonomi Pembangunan Dan Pariwisata*, *2*(1), 35–45. https://doi.org/10.52300/jepp.v2i1.4432

[21] Mu'arif, R. F., & Soebagyo, D. (2023). Analisis Determinan Pertumbuhan Ekonomi di Indonesia Tahun 2005-2020. *Ekonomis: Journal of Economics and Business*, *7*(2), 796. https://doi.org/10.33087/ekonomis.v7i2.915

[22] Bagaskara, JN, & Setyowati, E. (2017). Analysis Of The Influence Of Foreign Direct Investment (FDI), Inflation And Interest Rates On Economic Growth In Indonesia. Midyear International Conference, 1, 1–10. http://jp.feb.unsoed.ac.id/index.php/myc/article/view/3716

[23] Safitri, D. (2022). Pengaruh Ekspor, Pengeluaran Pemerintah Dan Inflasi Terhadap Pertumbuhan Ekonomi Di Kalimantan Tengah. *JEPP : Jurnal Ekonomi Pembangunan Dan Pariwisata*, *2*(1), 35–45. https://doi.org/10.52300/jepp.v2i1.4432

increase. The GDP used is the GDP of the United States and India over a period of 40 years, from 1983 to 2022 in USD units.[24]

The independent variables used are the level of Foreign Direct Investment (FDI), export volume, and inflation rate. The definition of Foreign Direct Investment according to Krugman in International Investment Law is the international capital flow carried out by establishing or expanding companies in other countries.[25] The FDI variable has a unit of USD. The second independent variable is Export. Export is the delivery or sale of domestic products to other countries. The unit used for the export variable is the percentage of GDP (% of GDP). The next independent variable is the inflation rate. The definition of the inflation rate is the percentage increase in the price of goods in that year compared to the previous year. The inflation rate has a unit of percent (%).[26] The independent variables used are data from the United States and India over a period of 40 years from 1983 to 2022.

Data processing in this study uses the EViews analysis tool. The analysis method used is the Partial Adjustment Model (PAM) with a time series from 1983 to 2022. PAM will be used to explain the decline in the partial adjustment model and calculate the long-term coefficient.[27] In addition to using PAM, to see the results in this study also uses the classical assumption test. The classical assumption test consists of normality test, multicollinearity test, autocorrelation test, and heteroscedasticity test.

In this study, each country will be analyzed using the Partial Adjustment Model (PAM), so that in this study there are two PAM models. The long-term PAM model in this study is as follows:

$$Log(GDP)_t = \beta_0 + \beta_1 Log(FDI)_t + \beta_2 EKS_t + \beta_3 INF_t + \mu_t$$

The model will be used to calculate the long-term effects of the variables Foreign Direct Investment (USD), exports (% of GDP), and inflation rate (%) on Gross Domestic Product (USD) for the United States and India. While the short-term PAM model used to estimate in both countries is as follows:

$$Log(GDP)_t = \beta_0 + \beta_1 Log(FDI)_t + \beta_2 EKS_t + \beta_3 INF_t + (1-\delta) Log(GDP)_{t-1} + \mu_t$$

From this equation, the PAM conditions can be found, namely the adjustment coefficient δ has a value of $0 < \delta \leq 1$ and the probability value of the LogGDP t-statistic$_{t-1}$ < α.

There are several tests conducted on the Partial Adjustment Model (PAM), the first is the coefficient of determination used to determine the proportion of variation in the dependent

[24] Sukirno, S. (2015). *Makroekonomi: teori pengantar*. RajaGrafindo Persada.
[25] Kusnowibowo. (2019). *Hukum Investasi Internasional*. 1–209.
[26] Sukirno, S. (2015). *Makroekonomi: teori pengantar*. RajaGrafindo Persada.
[27] Basuki, A. T. (2014). *Regresi Model PAM, ECM dan Data Panel dengan EVIEWS 7. Yogyakarta: Katalog Dalam Terbitan (KDT).* 75. https://ekonometrikblog.wordpress.com/wp-content/uploads/2015/10/regresi-pam-ecm-dan-data-panel.pdf

variable explained by the independent variables. The second test is the partial test (t-test), used to determine the effect of the independent variables individually on the dependent variable. The third test is the F test, used to see whether the independent variables have a simultaneous effect on the dependent variable. The classical assumption test is also used, consisting of the multicollinearity test, autocorrelation test, heteroscedasticity test, and residual normality test. R^2.

RESULTS AND DISCUSSION

Estimation Results

Partial Adjustment Model (PAM) analysis was conducted to determine the effect of Foreign Direct Investment, exports, and inflation on economic growth in America and India. PAM is an analysis model used to analyze the influence and relationship between independent variables and dependent variables. In addition, this analysis is also used to explain how the influence of independent variables in the previous year with independent variables in the future. Based on the PAM analysis, the following results were obtained:

Table 1

Results of Econometric Model Estimation for the United States

$$LogGDP_t = 0{,}7624 + 0{,}0139 LogFDI_t + 0{,}0005 EKS_t + 0{,}0138 INF_t$$

(0,0156)** (0.8356) (0,0000)*

$$+0{,}9630 LogGDP_{t-1} + \delta e_t$$

(0,0000)*

R2 = 0.9992; DW-Stat = 1.5701; F-Stat = 10638.62 Prob. F-Stat = 0.0000

Diagnostic Test

(1) Multicollinearity Test (Klein)
LogFDI= 0.7665 ; EKS= 0.6962; INF= 0.0760

(2) Residual Normality Test (Jarque Bera)
JB(2) = 1.4404; Prob. JB(2) = 0.4867

(3) Autocorrelation Test (Breusch Godfrey)
$\chi2$ (3)=2.1110; Prob. $\chi2$(3) = 0.5497

(4) Heteroscedasticity Test (Glejser)
$\chi2$ (4)=5.7131; Prob. $\chi2$ (4) = 0.2216

(5) Model Specification Test (Ramsey Reset)
F(2,32) = 0.9633; Prob. F(2,32) = 0.3924

Source: World Bank, processed. Note: *significant at α = 0.01; **significant at α = 0.05; ***significant at α = 0.10. The numbers in brackets are the empirical probability values (p value) of the t statistic.

From table 1 it can be seen that the regression coefficient of LogGDPt-1 is 0.9630, meaning the adjustment coefficient value of the model is 0.037. The adjustment coefficient value comes from:

$$1 - \delta = 0{,}9630$$

$$\delta = 0{,}0370$$

The data used is annual data, so the adjustment time is:

$$AT = \frac{1}{\delta}$$

$$AT = \frac{1}{0{,}037} = 27{,}0270\text{year}$$

It can be interpreted that the adjustment of Gross Domestic Product is 3.7%, so that to achieve the desired level of Gross Domestic Product it will take 27 years.

The value indicates that the model meets the requirement of 0 < < 1. Furthermore, the probability value of the t-statistic LogGDPt-1 is 0.0000, meaning that it meets the probability requirement of the t-statistic < α (0.1). These two conditions indicate that the estimated model is truly a short-term Partial Adjustment Model model. These conditions indicate that the estimated model is truly a short-term PAM model and can present the long-term theoretical relationship between variables specified as a long-term PAM model.δ

The calculation parameters of the long-term estimated PAM model are as follows:

$$\beta_0 = \frac{\delta\beta_0}{\delta} = \frac{0{,}7624}{0{,}037} = 20{,}6054$$

$$\beta_1 = \frac{\delta\beta_1}{\delta} = \frac{0{,}0139}{0{,}037} = 0{,}3757$$

$$\beta_2 = \frac{\delta\beta_2}{\delta} = \frac{0{,}0005}{0{,}037} = 0{,}0135$$

$$\beta_3 = \frac{\delta\beta_3}{\delta} = \frac{0{,}0138}{0{,}037} = 0{,}3730$$

The following long-term estimated PAM model is obtained:

$$\widehat{LogGDP}_t = 20{,}6054 + 0{,}3757Log(FDI_t) + 0{,}0135EKS_t + 0{,}3730INF_t$$

The multicollinearity test used in this study is the Klein test. In the Klein test, multicollinearity occurs if the value <R2. The results of the multicollinearity test with Klein in the United States with a value of R2 = 0.9992 are as follows:R_i^2

$$R^2_{Log(FDI)} = 1 - \frac{1}{VIF_{Log(FDI)}} = 1 - \frac{1}{4{,}2825} = 0{,}7665$$

$$R^2_{EKS} = 1 - \frac{1}{VIF_{EKS}} = 1 - \frac{1}{3{,}2919} = 0{,}6962$$

$$R^2_{INF} = 1 - \frac{1}{VIF_{INF}} = 1 - \frac{1}{1{,}0832} = 0{,}0760$$

The value of all independent variables < R2 = 0.9992, then the variables Foreign Direct Investment (FDI), exports (EKS), and inflation rate (INF) do not cause multicollinearity problems in the estimated model.R_i^2

The Jarque Bera test is used to test the normality of residuals instudythis. The residual distribution is said to be normal if the Jarque Bera probability value is more than α (> 0.10). Based on Table 1, the Jarque Bera probability for the analysis of the United States is more than α (> 0.10), which is 0.4867. It can be concluded that the residual distribution of the estimated model is normal.

Autocorrelation test in this study uses the Breusch Godfrey test. The estimated model is said to have no autocorrelation problem if the probability value of χ2 is greater than α. Table 1 shows that there is no autocorrelation problem in the PAM model for the analysis of the United States because the probability value of χ2 is greater than α (> 0.10), which is 0.5497.

This study uses the Glejser test to test heteroscedasticity. The estimated model is said to have no heteroscedasticity problem if the probability value of χ2 is greater than α. The probability value of χ2 in the analysis of the United States is 0.2216, shown in Table 1. Since the probability value of χ2 is greater than α (> 0.10), it can be concluded that there is no heteroscedasticity problem in the estimated model.

The Ramsey Reset test is used to test the specification problem in this study. It is said that the estimated specification is right or the estimated model is linear if the probability value of F is greater than α. Testing in the United States gives the result that the estimated model specification is right because the probability value of F is greater than α (> 0.10), which is 0.3924 as seen in Table 1.

Table 2

Estimation Results of Econometric Models for India

$$LogGDP_t = 1{,}5111 + 0{,}0311LogFDI_t + 0{,}0023EKS_t - 0{,}0002INF_t$$

(0,0768)*** (0.6789) (0.9706)

$$+0{,}9207LogGDP_{t-1} + \delta e_t$$

(0,0000)*

R2 = 0.9940; DW-Stat = 2.2257; F-Stat = 1398.931 Prob. F-Stat = 0.0000

Diagnostic Test

(1) Multicollinearity Test (Klein)

LogFDI=0.9062; EKS=0.8884; INF=0.3452

(2) Residual Normality Test (Jarque Bera)

JB(2) = 0.5156; Prob. JB(2) = 0.7728

(3) Autocorrelation Test (Breusch Godfrey)

$\chi 2$ (3)=1.3323; Prob. $\chi 2$(3) = 0.7215

(4) Heteroscedasticity Test (Glejser)

$\chi 2$ (4)=6.5476; Prob. $\chi 2$ (4) = 0.1618

(5) Model Specification Test (Ramsey Reset)

F(2,32) = 1.1368; Prob. F(2,32) = 0.3335

Source: World Bank, processed. Note: *significant at α = 0.01; **significant at α = 0.05; ***significant at α = 0.10. The numbers in brackets are the empirical probability values (p value) of the t statistic.

As seen from table 2, the regression coefficient of LogGDPt-1 is 0.9207 with the adjustment coefficient value of the model being 0.0793. The adjustment coefficient value comes from:

$$1 - \delta = 1 - 0{,}9207$$

$$\delta = 0{,}0793$$

*Adjustment time*or the adjustment time is obtained:

$$AT = \frac{1}{\delta}$$

$$AT = \frac{1}{0{,}0793} = 12{,}6103\text{year}$$

It can be concluded that the adjustment of Gross Domestic Product is 37.93%, so that to achieve the desired level of Gross Domestic Product it will take 13 years.

Based on the value, it shows that the model meets the requirement 0 < < 1. Then, it can be seen that the probability value of the t-statistic LogGDPt-1 is 0.0000, the value meets the probability requirement of the t-statistic < α (0.1). This shows that the estimated model is truly a short-term PAM model and can present the long-term theoretical relationship between variables specified as a long-term PAM model. The calculation parameters of the estimated long-term PAM model are:δ

$$\beta_0 = \frac{\delta\beta_0}{\delta} = \frac{1{,}5111}{0{,}0793} = 19{,}0555$$

$$\beta_1 = \frac{\delta\beta_1}{\delta} = \frac{0{,}0311}{0{,}0793} = 0{,}3922$$

$$\beta_2 = \frac{\delta\beta_2}{\delta} = \frac{0{,}0023}{0{,}0793} = 0{,}0290$$

$$\beta_3 = \frac{\delta\beta_3}{\delta} = \frac{-0{,}0002}{0{,}0793} = -0{,}0025$$

From these calculations, the long-term estimated PAM model is obtained:

$$Lo\widehat{gGD}P_t = 19{,}0555 + 0{,}3922 Log(FDI_t) + 0{,}0290 EKS_t - 0{,}0025 INF_t$$

The results of the multicollinearity test in India with an R2 value of 0.9940 are as follows:

$$R^2_{Log(FDI)} = 1 - \frac{1}{VIF_{Log(FDI)}} = 1 - \frac{1}{10{,}7364} = 0{,}9069$$

$$R^2_{EKS} = 1 - \frac{1}{VIF_{EKS}} = 1 - \frac{1}{8{,}9572} = 0{,}8884$$

$$R^2_{INF} = 1 - \frac{1}{VIF_{INF}} = 1 - \frac{1}{1{,}5273} = 0{,}3452$$

From these results, it can be concluded that the variables Foreign Direct Investment (FDI), exports (EKS), and inflation rate (INF) do not cause multicollinearity problems in the estimated model because all values are <R2 = 0.9940.R_i^2

The Jarque Bera probability in the analysis of India based on Table 2 is 0.7728. It can be concluded that the residual distribution of the estimated PAM model is normal because the Jarque Bera probability is more than α (> 0.10). The probability value of χ2 for India is 0.7215, as seen in Table 2. It can be concluded that there is no autocorrelation problem in the estimated PAM model because the probability of χ2 is greater than α (> 0.10). The estimated PAM model for India does not have a heteroscedasticity problem. This is because the probability value of χ2 is greater than α (> 0.10), which is 0.1618. As seen from Table 2, the F probability of the Ramsey Reset test for India is 0.3335. It can be concluded that the specifications of the estimated PAM model are appropriate or the estimated model is linear.

Discussion

Based on the results of the American estimation, the probability value of the F-statistic is 0.0000 (< 0.10), soH0 is rejected. So, the estimated model exists. The coefficient of determination (R2) has a value of 0.9990, so it can be interpreted that the variables of Foreign Direct Investment

(FDI), exports (EKS), and inflation rate (INF) together can explain the variation of the Gross Domestic Product (GDP) variable by 99.90%. The remaining 0.10% is influenced by other unobserved factors.

Partial testing (t-test) conducted on the United States shows that the Foreign Direct Investment variable has a probability of 0.0156 (<0.10). It can be concluded that FDI has a positive effect on Gross Domestic Product. This result is in line with Sukirno (2015), that investment can increase the amount of production from year to year, thereby increasing the economic growth of a country.[28]

The International Monetary Fund reports that the United States is the world's leading destination for FDI. The increase in FDI in the United States was driven by the passage of the US Tax Cuts and Jobs Act. This law reduced taxes on capital holdings in low-tax areas, resulting in a large return of income in the form of assets from foreign companies in the United States.

Testing for the influence of independent variables in the short term, the FDI variable for America has a coefficient value of 0.0139. It can be interpreted that if FDI increases by 1% then GDP increases by 0.0139% in the short term. The results of the long-term test, the FDI variable has a coefficient of 0.3757. This means that if Foreign Direct Investment increases by 1% then Gross Domestic Product increases by 0.3757% in the long term.

The results of the partial test on the export variable in America, produced a probability of 0.8351 (> 0.10). It can be concluded that exports have no effect on GDP. These results are in accordance with research conducted by Safitri on Central Kalimantan, Indonesia from 2015Q1 to 2019Q5 that the export variable has no effect on economic growth.[29] America is one of the largest exporting countries in the world. However, exports only contribute about 10% of GDP. America's highest exports from 1983 to 2022 occurred in 2012, only 13.64% of GDP.

The results of the partial test on the inflation variable in America, produced a probability of 0.0000 (<0.10). So it can be concluded that inflation has an effect on GDP. This result is in accordance with research conducted by Amalia & Hasmarini that inflation has a positive effect on economic growth.[30] In this study, inflation has a positive effect on America's economic growth because from 1983 to 2022 the inflation rate in America can still be controlled so that it can have a positive effect on economic growth.

[28] Sukirno, S. (2015). *Makroekonomi: teori pengantar*. RajaGrafindo Persada.

[29] Safitri, D. (2022). Pengaruh Ekspor, Pengeluaran Pemerintah Dan Inflasi Terhadap Pertumbuhan Ekonomi Di Kalimantan Tengah. *JEPP : Jurnal Ekonomi Pembangunan Dan Pariwisata*, *2*(1), 35–45. https://doi.org/10.52300/jepp.v2i1.4432

[30] Amalia, R. F., & Hasmarini, M. I. (2022). Analisis Pengaruh Keterbukaan Ekonomi terhadap Pertumbuhan Ekonomi di 6 Negara ASEAN Periode 2018–2022. *Fakultas Ekonomi dan Bisnis, Universitas Muhammadiyah Surakarta Maulidyah Indira Hasmarini Fakultas Ekonomi dan Bisnis, Universit*. *18*(2), 1318–1329.

The short-term effect of independent variables in America, the inflation variable has a coefficient of 0.0138. So, if inflation rises by 1% then Gross Domestic Product rises by 1.38% in the short term. In the long term, the inflation variable has a coefficient of 0.0135. So, if inflation rises by 1% then Gross Domestic Product rises by 1.35% in the long term.

In the estimation results of India, the probability value of F-statistic is 0.0000 (<0.10), then H0 is rejected and the estimated model exists. The coefficient of determination (R2) is 0.9940. It can be interpreted that the variables of Foreign Direct Investment (FDI), exports (EKS), and inflation rate (INF) together can explain the variation of the Gross Domestic Product (GDP) variable by 99.40%. The remaining 0.60% is influenced by other unobserved factors.

The results of the t-test in India, the FDI variable has a probability of 0.0768 (<0.10). So it can be concluded that FDI has a positive effect on GDP. This is in line with research conducted by Helmiyanti & Khoirudin (2024) that FDI has an effect on economic growth.[31]

FDI in India continues to grow because India has a skilled and efficient workforce and abundant natural resources that attract many investors. Since 1990, India has opened its doors to foreign investment. Strengthened by the "Make in India" policy starting in 2014 which allows FDI of up to one hundred percent from foreign investors without requiring approval from any party.

The FDI variable for India has a coefficient value of 0.0311, meaning that if FDI increases by 1%, GDP increases by 0.0311% in the short term. While in the long term, the FDI variable has a coefficient of 0.3922. It can be interpreted that if Foreign Direct Investment increases by 1%, Gross Domestic Product increases by 0.3922% in the long term.

The export variable in India has a probability of 0.6789 (> 0.10). Therefore, exports also have no effect on GDP in India. Research conducted by Wulandari & Zuhri shows that exports have no effect on economic growth.[32] India focuses only on rice exports because of its huge population, so India must maintain supplies in the country. Although it focuses only on food exports, the Indian government also limits these exports.

The inflation variable in India has a probability of 0.9709 (> 0.10), so inflation has no effect on GDP. This result is in line with research conducted by Agathon et al. that inflation has

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[31] Helmiyanti, M., & Khoirudin, R. (2024). Analisis Efektivitas Pengeluaran Pemerintah, Ekspor, Investasi Asing Langsung, Tenaga Kerja dan Inflasi terhadap Pertumbuhan Ekonomi Tahun 2008 – 2021 (Studi Kasus : 8 Negara ASEAN). *Jurnal Simki Economic, 7*(1), 72–82. https://doi.org/10.29407/jse.v7i1.483

[32] Wulandari, L. M., & Zuhri, S. (2019). The Effect of International Trade and Invesment on Indonesian. *Jurnal REP (Riset Ekonomi Pembangunan), 4*(2), 119–127. http://dx.doi.org/10.31002/rep.v4i2.781

no effect on economic growth.[33] Research conducted by Bagaskara & Setyowati also shows that inflation has no effect on economic growth.[34] The Indian government has restricted export and import activities because inflation in the prices of goods in India is largely due to international trade in agricultural commodities. Thus, the inflation rate does not affect economic growth in India.

CONCLUSION

This study uses the Partial Adjustment Model (PAM) which observes the influence of FDI, exports, and inflation variables on GDP with a significance of 0.10 over a period of 40 years, namely from 1983 to 2022. The results of the analysis in America, namely the variables Foreign Direct Investment (FDI) and inflation have a positive effect on economic growth. In the short term, a 1% increase in FDI can increase GDP by 0.0139%. While in the long term, a 1% increase in FDI can increase GDP by 0.3757%. For the inflation variable, in the short term a 1% increase in inflation can increase GDP by 1.38%. Furthermore, a 1% increase in inflation can increase GDP by 1.35% in the long term.

Results of analysis on Indiashowthat the Foreign Direct Investment variable has a positive effect ongrowtheconomy. A 1% increase in FDI can increase GDP by 0.0311% in the short term. In the long term, a 1% increase in FDI can increase GDP by 0.3922%.

SUGGESTION

Based on the results of the analysis, the advice given to America is to strengthen the implementation of regulations set regarding FDI in America in order to attract more foreign investors and thus encourage faster economic growth. Control of inflation rates in America continues to be maintained so that there is no decline in economic growth.

For India, the suggestion that can be given is that the “Make in India” policy that makes it easier for foreign investors to invest foreign direct capital needs to be monitored for its implementation. Because, if there is an industrial swelling that is run through FDI, it is feared that there will be environmental damage, exploitation of natural resources, and a reduction in productive land. If this happens, there is a possibility of a decline in economic growth in India because the agricultural sector is the main sector in the Indian economy.

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[33] Agathon, F. A., Setyowati, E., Purnomo, D., & Hasmarini, M. I. (2024). Pengaruh Inflasi, Nilai Tukar, Ekspor dan Impor Terhadap PDB di Negara BELGIA. *Economics and Digital Business Review*, *5*(1), 384–399.

[34] Bagaskara, JN, & Setyowati, E. (2017). Analysis Of The Influence Of Foreign Direct Investment (FDI), Inflation And Interest Rates On Economic Growth In Indonesia. Midyear International Conference, 1, 1–10. http://jp.feb.unsoed.ac.id/index.php/myc/article/view/3716

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