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DETERMINANTS OF FOREIGN DIRECT INVESTMENT (FDI) AND ITS IMPACT ON GNP AND EMPLOYMENT IN JAVA ISLAND

Sutrisno[1*], Sumaryoto[2], Sutrisno[3]
[1,3]Universitas Borobudur, Indonesia
[2]Universitas Indraprasta PGRI, Indonesia
Corresponden Email: *sutrisno3831@gmail.com*[1]

Abstract

The research was conducted in Java Island by analyzing data from provincial districts/cities in Java Island on inflation, interest rates, rupiah exchange rates, total export-import, labor wage values, transportation infrastructure, and foreign portfolios on foreign direct investment (FDI) in Java Island, as well as GRDP and employment opportunities in the period 2013 to 2022. The population of this study is all provinces in Indonesia (38 provinces) as cross section data. While the time series data is 56 years (since the new order). While the sample of this study is panel data of 6 provinces in Java Island within 10 years. Where time series data will be taken from 2013-2022 and cross section data for 6 provinces which are the largest industrial estate locations in each province. This research method uses a descriptive verification method. The variables used are divided into two (2), namely the dependent variable and the independent variable. The dependent variable in this study is FDI (in the structure of research model 1) and GRDP and employment opportunities (in the structure of research model 2) while the independent variables in this study are logistics performance index, rupiah exchange rate, labor wages, inflation and infrastructure (in the structure of research model 1) and FDI (in the structure of research model Foreign direct investment (FDI) has a significant and positive effect on gross regional domestic product (GRDP t-1) on the island of Java by 83.68%. Meanwhile, foreign direct investment (FDI) has an insignificant and positive effect on employment opportunities on the island of Java.

Keywords: Foreign Direct Investment, Gross Regional Domestic Product, Java Island.

INTRODUCTION

Foreign direct investment (FDI) flows to emerging Asian countries have increased rapidly since the early 1990s. Although it declined during the Asian crisis, the flow of FDI into these countries has increased rapidly after the crisis. The figure below shows the fluctuation of FDI in ASEAN countries during 2007-2016. The occurrence of the global economic crisis in 2008 had the effect of decreasing FDI in ASEAN until 2009 including Indonesia. The increase began to occur in 2010, as the country's post-crisis economic recovery began to take place. The importance of the role of foreign investment in Indonesia's economic development is also reflected in the objectives set out in Law No. 25 of 2007 concerning investment (Investment Law) as a positive legal basis for investment activities in Indonesia (Devi Sintha Ria, 2019) . As a developing country, Indonesia requires considerable funds to carry out national development. The need for large funds occurs because of efforts to catch up with the development of developed countries, both in the region and the global region (Tibubiu et al., 2014).

Investment flows on the island of Java account for 50% of the total investment in Indonesia. As much as 56.3% in 2017 and 56.2% in 2018. Investment centered on the island of Java will look

reasonable when looking at data on the population of Indonesia on the island of Java reaching more than 149 million people which is 56.2% of the total population of Indonesia in 2018 of more than 265 million people based on the projection data of the central statistics agency (BPS).

Indonesia still relies heavily on FDI to drive economic development. The homework for Indonesia is how to improve itself in order to attract foreign countries to come and invest in Indonesia. One of the decisions of foreign investors to invest in an investment destination country is generally influenced by the conditions of the investment destination country (pull factor) and also the conditions and strategies of the foreign investor country (push factor). This is in line with Reinhart, et al (in Okafor, 2012) said there are driving factors that are considered by investors in investing in a region which are divided into two parts, namely pull factors (domestic) and push factors (global) (Mutholifa, 2019) . Data on the distribution of realization of domestic investment (PMDN) and foreign investment (PMA) in 2019 according to the BKPM data release on January 29, 2020 shows that PMA with destiny to Java Island still dominates more than 50% of the total PMA investment in Indonesia.

LITERATURE REVIEW

Investment, which in English is defined as investment (Hartana, 2017) has the main objective of being able to obtain future profits. Investment is one of the important and main factors in economic development. Investment can be said to be the beginning of economic development activities that can be carried out by the private sector, government or cooperation between the government and the private sector (Sulaksono, 2015). However, the private sector is certainly more interested in the type of investment aimed at making a profit. The investment problem is a problem that is directly related to the amount of expectation of income that will be obtained from capital goods in the future (Jubir et al., 2023).

In Classical theory, the investment made is intended to be able to increase the ability of society to produce. By increasing the amount of community production, the accumulated capital will increase investment. According to classical investment theory, each firm can have an investment demand curve that has a negative slope (Saragih, 2022). The classical view states that the level of investment is fully determined by the interest rate and that changes in the interest rate will make the savings created at full employment always equal to the investment of each firm (Rosul, 2024). Meanwhile, in Keynes' theory, investment activities are investment decisions taken by comparing the Marginal Efficiency of Capital or MEC (Hasbullah, Sabir, 2023).

According to the accelerator theory, investment is also influenced by interest rates. If the interest rate is higher than the rate of return on capital, the planned investment will not be profitable. Therefore, the company's plan to invest will be canceled. Accelerator theory states that if aggregate output increases, then net investment will turn positive (Mutia & Nasution, Rifka, 2021). Neoclassical theory, investment is

the optimal accumulation of capital. While the neoclassical theory is based on a thought regarding the determination of the balance of factors of production by producers or companies (Putri, 2019).

Foreign Direct Investment can be defined as the flow of capital originating from abroad that moves to all private sectors either through foreign direct investment or indirect / portfolio investment (Baskara, 2018) . Foreign direct investment (FDI) has become one of the crucial elements in leading the economic development of developing countries towards a higher level of welfare (Marthen et al., 2024). This is in line with the results of research conducted by (Ahmad et al., 2019) which confirmed the positive and highly significant relationship between net FDI inflows and poverty reduction in Asia.

GRDP in general is the overall added value obtained from all business units in a particular region, or which describes the overall value of final goods and services obtained by all aspects of the regional economy (Hasibuan et al., 2022). Significant changes in GRDP in a region can be used as a measure of the region's success in regional economic growth (Romhadhoni et al., 2019).

Labor is the population who are of working age (Syairozi & Susanti, 2018). Employment is all matters relating to labor at the time before, during, and after the working period. Employment issues are regulated in Law Number: 13 of 2003 concerning Manpower. An important element of employment is labor. Every worker has the right and has the same opportunity to be able to obtain a decent job and livelihood without distinguishing gender, ethnicity, race, religion, and political flow in accordance with the interests and abilities of the workforce concerned, including equal treatment of persons with disabilities so that juridically needs to be given protection and every employer is obliged to provide rights and obligations to workers without distinguishing gender, ethnicity, race, religion skin color and political flow (Damanik, 2021).

Employment opportunities are opportunities created as a result of certain economic developments, in the sense that employment opportunities may have been filled or not filled by available human resources (Awandari & Indrajaya, 2016). The problem that actually occurs is that there is no balance between human resources looking for work and available jobs. This imbalance makes labor absorption uneven in certain regions or cities so that it can hamper the rate of economic growth in an area (Ginting, 2020).

METHOD

The research was conducted on the island of Java by analyzing provincial data located on the island of Java on the logistics of the index norm, rupiah exchange rate, labor wages, inflation and infrastructure on foreign direct investment (FDI) in Java, as well as GRDP and employment opportunities in the period 2013 to 2022. The population of this study is all provinces in Indonesia (38 provinces) as cross section data. While the time series data is 56 years (since the new order). While the sample of this study is panel

data of 6 provinces in Java within 10 years. Where time series data will be taken from 2013-2022 and cross section data for 6 provinces which are the largest industrial estate locations in each province.

This research method uses descriptive verification methods. Descriptive verification method is a method that aims to describe whether or not the facts are true, and explain the relationship between the variables being studied by collecting data, processing, analyzing and interpreting data in testing statistical hypotheses (Novianti & Hakim, 2019). The variables used can be divided into two (2), namely the dependent variable and the independent variable. The dependent variables in this study are FDI (in the structure of research model 1) and GRDP and employment opportunities (in the structure of research model 2) while the independent variables in this study are logistic performance index, rupiah exchange rate, labor wages, inflation and infrastructure (in the structure of research model 1) and FDI (in the structure of research model 2).

1. Research Design

In conducting this research, the researcher developed the following research model/design:

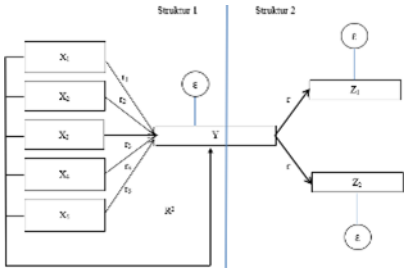

Figure 1. Research Multiple Regression Model Structure

Based on the regression model in Figure 1 above, in conducting statistical data analysis, researchers divide into three substructures of the research model as follows:

a. Structure 1 (Model 1)

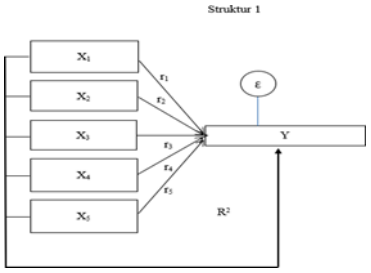

Figure 2 Structure 1 (Model 1)

Based on the substructure of model one above, the following equation can be formulated:

$$lnY = f(X_1 + X_2 + X_3 + X_4 + X_5 + \varepsilon)$$

$$lnY = \alpha + \beta_1 ln X_1 + \beta_2 ln X_2 + \beta_3 ln X_3 + \beta_4 ln X_4 + \beta_5 ln X_5 + \varepsilon$$

b. Structure 2

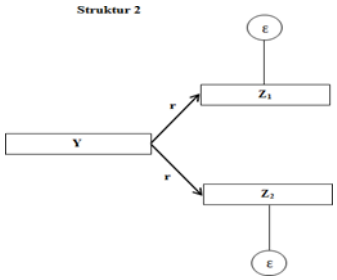

Figure 3 Structure 2

Based on the two structures above, there are two models that can be formulated as follows:

1) Model 2

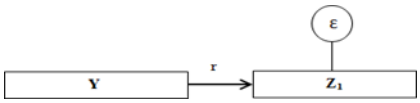

Figure 4 Model 2

$$Z\_1=f(\hat{Y})$$

$$\ln Z\_1=\alpha+\beta\,\hat{Y}+\varepsilon$$

2) Model 3

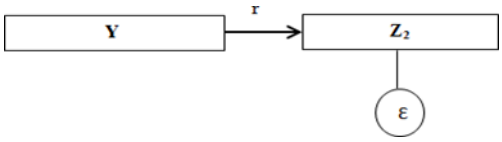

Figure 5 Model 3

$$\boldsymbol{Z_2 = f\,(\hat{Y})}$$

$$\boldsymbol{ln\,Z_2 = \alpha + \beta\,\hat{Y} + \varepsilon)}$$

2. Classical Assumption Test

a. Normalization Test

The normality test relates to whether the data is normal or not. The normality test uses the Jarque-Bera test (JB Test) with the following decision making:

1) If the probability value> 0.05 then Ho is rejected and Ha is accepted.
2) If the probability value <0.05 then Ho is accepted and Ha is rejected.

b. Multicollinearity Test

To determine the presence or absence of multicollinearity, the Matrix correlation test is used.

1) If the correlation matrix value> 0.8 then Ho is accepted and Ha is rejected.
2) If the correlation matrix value< is 0.8, then Ho is rejected and Ha is accepted.

c. Heteroscedasticity Test

Heteroscedasticity occurs when the variance of each error element is not constant.

1) Autocorrelation Test

The method used to detect the presence or absence of autocorrelation is the Langrange Multiplier (LM) method or the BG (Breusch Godfrey) test.

1) If the Probability Chi-Squared value> 0.05 then Ho is rejected and Ha is accepted.
2) If the Probability Chi-Squared value< 0.05 then Ho is accepted and Ha is rejected.

3. Best Model Selection Test

To select the best model, a test comparison is carried out between the Common effect, Fixed Effect, and Random Effect models in each model through the Chow-Test and Hausman-Test.

4. Multiple Linear Regression Analysis

According to Sugiyono (2017) multiple linear regression analysis is used by researchers to predict how the dependent variable will rise and fall if two or more independent variables are predictor factors.

5. Statistical Hypothesis

a. Simultaneous Parameter Significance Test (F Test)

The F test is carried out to analyze jointly all independent variables in influencing the dependent variable.

1) If F (count) >F table, then HO is rejected and Ha is accepted.
2) If F(count) <F(table), then HO is accepted and Ha is rejected.

b. Individual Parameter Significance Test (t test)

The t statistical value test is conducted to analyze the influence of the independent variable on the dependent variable individually.

1) If t-count> t(table), then HO is rejected.
2) If t-count< t(table), then HO is accepted.
3) Test Coefficient of Determination (R^2)

The coefficient of determination essentially measures the ability of the model to explain the variation in the dependent variable. The magnitude of the coefficient of determination is between zero and one ($0 < R^2 < 1$).

6. Model Feasibility Testing

To test the feasibility of the research model, it is carried out by testing the Theoretical Plusibility, Accuracy of the Estimates of the Parameters, Explanatory Ability and Forecasting Ability.

RESULTS AND DISCUSSION

1. Descriptive Statistical Analysis Results

A description of the results of descriptive analysis using eviews 10, shown in the table below:

Table 1. Descriptive Statistical Analysis Results

	KK	PDRB (t+1)	FDI	LPI	KURS	WAGE	INFLATION	INFRA
Mean	93.45733	5.001667	7.169167	3.081000	9.527167	38.59050	4.151000	8.367000
Median	93.70000	5.260000	7.805000	3.115000	9.530000	14.31500	3.285000	8.350000
Maximum	97.28000	6.590000	8.870000	3.150000	9.660000	1471.000	10.20000	15.55000
Minimum	89.05000	2.330000	2.270000	2.940000	9.410000	13.63000	1.400000	4.040000
Std. Dev.	2.330551	0.997484	1.759990	0.080732	0.069796	188.0581	2.408692	2.198867
Skewness	-0.102463	-1.374349	-1.518962	-0.627831	-0.019433	7.550894	0.974655	0.398594
Kurtosis	1.698816	4.144970	4.051110	1.744871	2.658907	58.01633	2.743076	3.311325
Jarque-Bera	4.337685	22.16573	25.83454	7.880097	0.294637	8137.151	9.664558	1.831084
Probability	0.114310	0.000015	0.000002	0.019447	0.863019	0.000000	0.007968	0.400300
Sum	5607.440	300.1000	430.1500	184.8600	571.6300	2315.430	249.0600	502.0200
Sum Sq. Dev.	320.4566	58.70343	182.7563	0.384540	0.287418	2086584.	342.3061	285.2659
Observations	60	60	60	60	60	60	60	60

Source: research data processed

The table above shows that the Employment Opportunity Variable has a minimum value of 89.05000 and a maximum value of 97.28000 with an average value of 93.45733, and its standard deviation (the level of data distribution) is 2.330551. The GRDP (t + 1) variable has a minimum value of 2.330000 and a maximum value of 6.590000 with an average value of 5.001667, and its standard deviation (the level of data distribution) is 0.997484. The FDI variable has a minimum value of 2.270000 and a maximum value of 8.870000 with an average value of 7.169167, and its standard deviation (the level of data distribution) is 1.759990. The LPI variable has a minimum value of 2.940000 and a maximum value of 3.150000 with an average value of 3.081000, and its standard deviation (the level of data distribution) is 0.080732. The exchange rate variable has a minimum value of 9.410000 and a maximum value of 9.660000 with an average value of 9.527167, and its standard deviation (the level of data distribution) is 0.069796. The labor wage variable has a minimum value of 13.63000 and a maximum value of 1471,000 with an average value of 38.59050, and its standard deviation (the level of data distribution) is 188.0581. The inflation variable has a minimum value of 1.400000 and a maximum value of 10.20000 with an average value of 4.151000, and its standard deviation (the level of data distribution) is 2.408692. The infrastructure variable has a minimum value of 4.040000 and a maximum value of 15.55000 with an average value of 8.367000, and its standard deviation (the level of data distribution) is 2.198867.

2. Data Analysis Technique and Hypothesis Test
   a. Panel Data Regression Model 1 Results

To get the best model, Chow test and Hausman test are conducted in each model. As seen in the table below:

Table 2. Chow Test and Hausman Test Results Model 1

Effects Test	Statistic	d.f.	Prob.
Cross-section F	85.997461	(5,49)	0.0000
Cross-section Chi-square	136.791228	5	0.0000
Correlated Random Effects - Hausman Test			
Pool: PROVINFI			
Test cross-section random effects			
Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	237.921056	5	0.0000

Source: Data processed 2024

The chow test results can be seen that the cross section F probability value is equal to 0.0000 <0.05, which means that the best model based on the chow test is the fixed effect model, then the Hausman test is carried out. The results of the haustman test show that the cross section random probability value is equal to 0.0000 <0.05, which means that the best model based on the haussman test is the fixed effect model.

Table 3. Panel Data Multiple Regression Model 1

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	29.80707	9.908392	4.008265	0.0041
LPI	0.523673	0.129812	2.223903	0.0268
COURSE	-0.337827	0.141760	-3.639849	0.0007
UPAHTK	-0.006502	0.000400	-3.253289	0.0160
INFLATION	-0.075062	0.031560	-2.378423	0.0213
INFRA	1.108972	0.286192	3.264293	0.0121
Fixed Effects (Cross)				
_DKI--C	1.364692			
_BANTEN--C	0.506841			
_JABAR--C	1.654623			
_GEN--C	-0.011487			
_DIY--C	-3.860026			
_JATIM--C	0.345356			
Effects Specification				
Cross-section fixed (dummy variables)				
R-squared		0.749072	Mean dependent var	7.169167
Adjusted R-squared		0.738678	S.D. dependent var	1.759990
S.E. of regression		0.435831	Akaike info criterion	1.341017
Sum squared resid		9.307478	Schwarz criterion	1.724980
Log likelihood		-29.23052	Hannan-Quinn criterion	1.491206
F-statistic		91.31357	Durbin-Watson stat	2.036385
Prob(F-statistic)		0.000000		

Source: Data processed 2024

Model Equation 1

$$\mathbf{Ln\ Y = \alpha + \beta_1 ln\ X_1 + \beta_2 ln\ X_2 + \beta_3 ln\ X_3 + \beta_4 ln\ X_4 + \beta_5 ln\ X_5 + \varepsilon + \beta_5 ln\ X_5 + \varepsilon}$$

$$\mathbf{Ln\ Y = 29.80707 + 0.523673\ ln\ X_1 - 0.337827\ ln X_2 - -0.337827\ ln X_2 - 0.006502)\ ln X_3 - 0.075062)\ ln X_4 + 1.108972\ ln X_5 + \varepsilon}$$

Table 4. Cross Section Fixed Effect

Province	***Effect***
DKI Jakarta	1.364692
Banten	0.506841
West Java	1.654623
Central Java	-0.011487
Special Region of Yogyakarta	-3.860026
East Java	0.345356

Table 5. F Test Model 1

Influence	*R-Squared*	*Adjusted R-Squared*	F Count	*P-Value*	Decision
Simultaneous	0.749072	0.738678	91.31357	0.000000	Significantly influenced ($H_{a1}$is accepted)

Table 6. Model 1 t test

Partial Effect	β	t-statistic/ t-count	*P-value*	Decision
Logistic Performance Index	0.523673	2.223903	0.0268	Significantly affected (H_{a2}accepted)
Rupiah Exchange Rate	-0.337827	-3.639849	0.0007	Significantly affected (H_{a3}accepted)
Labor Wage	-0.006502	-3.253289	0.0160	Significantly affected (H_{a4}accepted)
Inflation	-0.075062	-2.378423	0.0213	Significantly affected (H_{a5}accepted)
Infrastructure	1.108972	3.264293	0.0121	Significantly influenced (H_{a6}accepted)

Table 7. Tabulation of Dominant Variables

Variable	Beta Coefficient *Fixed Effect* Model	Dominant Factor
Infrastructure	1.108972	1
Logistic Performance Index	0.523673	2
Rupiah Exchange Rate	-0.337827	3
Inflation	-0.075062	4
Labor Wage	-0.006502	5

Based on some of the tables above, it can be concluded that the probability value (Prob.) of the logistic performance index of 0.0268 is smaller than the significance value of 0.05, then H a2is

accepted so it can be concluded that the logistic performance index significantly has a positive effect on foreign direct investment (FDI) in the province of Java.

The probability value (Prob.) of the rupiah exchange rate of 0.0007 is smaller than the significance value of 0.05, then H(a) (3) is accepted so it can be concluded that the rupiah exchange rate significantly negatively affects foreign direct investment (FDI) in the province of Java.

The probability value (Prob.) of labor wages of 0.0160 is smaller than the significance value of 0.05, then H(a) (4)is accepted so it can be concluded that labor wages significantly negatively affect foreign direct investment (FDI) in the province of Java.

The probability value (Prob.) of inflation of 0.0213 is smaller than the significance value of 0.05, then H(a) (5)is accepted so it can be concluded that inflation significantly negatively affects foreign direct investment (FDI) in the province of Java.

The probability value (Prob.) of infrastructure is 0.0121 smaller than the significance value of 0.05, then H(a) (6)is accepted so it can be concluded that infrastructure significantly positively influences foreign direct investment (FDI) in the province of Java.

The results of the analysis of panel data for a period of 10 years, namely 2013 - 2022, where the magnitude of the logistical influence of index performance, rupiah exchange rate, labor wages, inflation and infrastructure on foreign direct investment (FDI) in the province of Java is 73.86%, and the remaining 26.14% is influenced by other variables outside the research variables.

Thus, the simultaneous influence of the independent variables, namely logistics performance index, rupiah exchange rate, labor wages, inflation and infrastructure on foreign direct investment (FDI) in the province of Java has a significant influence. This can be understood, considering that the five variables that affect foreign direct investment (FDI) in the Province of Java Island are the dominant variables that can affect foreign direct investment (FDI).

However, the total influence of other variables outside the research model is still quite large, amounting to 26.14%.

b. Model 2 Panel Data Regression Results

Table 8. *Chow* Test Model 2

Effects Test	Statistic	d.f.	Prob.
Cross-section F	154.403292	(5.47)	0.0000
Cross-section Chi-square	154.329655	5	0.0000

Source: Data processed 2024

Table 9. *Haussman* Test Model2

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	48.828522	1	0.0000
Source: Data processed 2024			

Source: Data processed 2024

The chow test results in table 8. can be seen that the cross section F probability value is equal to 0.0000 <0.05, which means that the best model based on the chow test is the fixed effect model. The cross section random probability value is equal to 0.0000 <0.05, which means that the best model based on the Haussman test is the fixed effect model.

Table 10. Panel Data Regression Model 2

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	16.58944	9.495975	2.746997	0.0372
FDI?	2.491158	0.995346	2.502806	0.0159
Fixed Effects (Cross)				
_DKI-C	1.096037			
_BANTEN--C	0.643814			
_JABAR--C	1.454925			
_GEN--C	0.102703			
_DIY-C	-3.580183			
_JATIM-C	0.282703			
Effects Specification				
Cross-section fixed (dummy variables)				
R-squared	0.844020	Mean dependent var	7.176667	
Adjusted R-squared	0.836874	S.D. dependent var	1.748392	
S.E. of regression	0.439282	Akaike info criterion	1.313074	
Sum squared resid	9.069546	Schwarz criterion	1.570906	
Log likelihood	-28.45301	Hannan-Quinn criterion	1.412510	
F-statistic	132.0979	Durbin-Watson stat	1.258686	
Prob(F-statistic)	0.000000			

Source: Data processed 2024

Model Equation 2

$$Ln\ Z_1 = \alpha + \beta\ ln\ \hat{Y} + \varepsilon$$

$$Ln\ Z_1 = 16.58944 + 2.491158\ ln\ \hat{Y} + \varepsilon$$

Tabel 11. *Cross Section Fixed Effect*

Provinsi	***Effect***
DKI Jakarta	1.096037
Banten	0.643814
Jawa Barat	1.454925
Jawa Tengah	0.102703
Daerah Istimewa Yogyakarta	-3.580183
Jawa Timur	0.282703

Source: Data processed 2024

Based on table 11, the statistical t value of foreign direct investment (FDI) is 2.502806 with a probability value (p-value) of 0.0159. The t-statistic value of foreign direct investment (FDI) of 2.502806 and positive value indicates that foreign direct investment (FDI) has a positive effect on

gross regional domestic product (GRDP) (t+1). The probability value (p-value) of 0.0159 is less than the significance value of 0.05, it can be concluded that H(0) (7)is rejected, and H(a) (7)is accepted, which means that foreign direct investment (FDI) has a positive and significant effect on gross regional domestic product (GRDP) (t+1) in Java.

The magnitude of the effect of foreign direct investment (FDI) on gross regional domestic product (GRDP) (t+1) is indicated by the Adjusted R-squared value of 0.836874, which means that foreign direct investment (FDI) affects gross regional domestic (GRDP) (t+1) by 83.68% and the remaining 16.32% is influenced by other factors outside the model studied.

c. Model 3 Panel Data Regression Results

Table 12. *Chow* Test Model 3

Effects Test	Statistic	d.f.	Prob.
Cross-section F	29.800153	(5.53)	0.0000
Cross-section Chi-square	80.278775	5	0.0000

Source: Data processed 2024

Table 13. *Haussman* Test Model 3

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	6.020258	1	0.0141

Source: Data processed 2024

The chow test results can be seen that the cross section F probability value is equal to 0.0000 <0.05. The haussman test results can be seen that the cross section random probability value is equal to 0.0141 <0.05, which means that the best model based on the uni Chow test and haussman test is the fixed effect model

Table 14. Panel Data Regression Model 3

Variable		Coefficient	Std. Error	t-Statistic	Prob.
C		91.78554	1.922646	47.73917	0.0000
FDI?		0.233192	0.267652	0.871249	0.3875
Fixed Effects (Cross)					
_DKI-C		-1.579110			
_BANTEN-C		-2.684596			
_JABAR-C		-2.634983			
_GEN-C		1.263472			
_DIY-C		3.773927			
_JATIM-C		1.861290			
Effects Specification					
Cross-section fixed (dummy variables)					
R-squared	0.855081	Mean dependent var			93.45733
Adjusted R-squared	0.838675	S.D. dependent var			2.330551
S.E. of regression	0.936072	Akaike info criterion			2.815031
Sum squared resid	46.44020	Schwarz criterion			3.059371
Log likelihood	-77.45094	Hannan-Quinn criterion			2.910606

F-statistic	52.12032	Durbin-Watson stat			1.612458
Prob(F-statistic)	0.000000				

Source: Data processed, 2024

Model Equation 3

$$Ln\ Z_2 = \alpha + \beta\ ln\ \hat{Y} + \varepsilon$$

$$Ln\ Z_2 = 91.78554 + 0.233192\ ln\ \hat{Y} + \varepsilon$$

Tabel 15. Cross Section Fixed Effect

Provinsi	***Effect***
DKI Jakarta	-1.579110
Banten	-2.684596
Jawa Barat	-2.634983
Jawa Tengah	1.263472
Daerah Istimewa Yogyakarta	3.773927
Jawa Timur	1.861290

Source: Data processed 2024

Based on Table 15, the t-statistic value for foreign direct investment (FDI) is 0.871249 with a probability value (p-value) of 0.3875. The t-statistic value for foreign direct investment (FDI) of 0.871249 is positive, indicating that foreign direct investment (FDI) has a positive effect on the employment rate. The probability value (p-value) of 0.3875 is greater than the significance level of 0.05, leading to the conclusion that Ha8 is rejected and H08 is accepted, meaning that foreign direct investment (FDI) does not have a positive and significant effect on the employment rate in the province of Java.

3. Model Feasibility Testing

a. Theoretical Plausibility

Table 16. *Theoretical Plausibility*

Relationship between Variables	Pre-Estimation	Post Estimation	Suitability
Simultaneously (X_1, X (2,) X (3,) X (4,) X (5) → Y)	Positive	Positive	According to
Logistic Performance Index (X_1→ Y)	Positive	Positive	Solution
Rupiah Exchange Rate (X_2→ Y)	Negative	Negative	Solution
Labor Wage (X_3→ Y)	Negative	Negative	Solution
Inflation (X_4→ Y)	Negative	Negative	Solution
Infrastructure (X_5→ Y)	Positive	Positive	Solution
Foreign Direct Investment (FDI) (Y → Z_1) GRDP	Positive	Positive	Solution
Foreign Direct Investment (FDI) (Y → Z_2) Employment Opportunity	Positive	Positive	Fit

In table 16, it can be explained that the theoretical plausibility test shows that the model before estimation and after estimation is in accordance with expectations.

b. Accuracy of the Estimates of the Parameters

Table 17. *Accuracy of the Estimates of the Parameters*

Relationship between *Independent* Variables	*P-Value*	Description
Model 1		
Logistic Performance Index ($X_1 \rightarrow Y$)	0.0268	Accurate
Rupiah Exchange Rate ($X_2 \rightarrow Y$)	0.0007	Accurate
Labor Wage ($X_3 \rightarrow Y$)	0.0160	Accurate
Inflation ($X_4 \rightarrow Y$)	0.0213	Accurate
Infrastructure ($X_5 \rightarrow Y$)	0.0121	Accurate
Model 2		
Foreign Direct Investment (FDI) ($Y \rightarrow Z_1$) GRDP	0.0159	Accurate
Model 3		
Foreign Direct Investment (FDI) ($Y \rightarrow Z_2$) Employment Opportunity	0.3875	Not Accurate

In table 17, it can be explained that the Accuracy of the Estimates of the Parameters test shows that model 1 and model 2 show accurate feasibility tests for future estimation purposes because each variable has a p-value < $\alpha = 0.05$. While model 3 shows that the feasibility test is not accurate for future estimation purposes because the variable has a p-value of> $\alpha = 0.05$.

c. Explanatory Ability

Table 18. *Explanatory Ability*

Partial Effect	Regression Coefficient	Standard Error (SE)	1/2 Beta	Test Result
Model 1				
Logistic Performance Index ($X_1 \rightarrow Y$)	0.523673	0.129812	0.2618365	SE < ½ Regression Coefficient
Rupiah Exchange Rate ($X_2 \rightarrow Y$)	-0.337827	0.141760	0.1689135	SE < ½ Regression Coefficient
Labor Wage ($X_3 \rightarrow Y$)	-0.006502	0.000400	0.003251	SE < ½ Regression Coefficient
Inflation ($X_4 \rightarrow Y$)	-0.075062	0.031560	0.037531	SE < ½ Regression Coefficient
Infrastructure ($X_5 \rightarrow Y$)	1.108972	0.286192	0.554486	SE < ½ Regression Coefficient
Model 2				
Foreign Direct Investment (FDI) ($Y \rightarrow Z_1$) PDRB	2.491158	0.995346	1.235579	SE < ½ Regression Coefficient
Model 3				
Foreign Direct Investment (FDI) ($Y \rightarrow Z_2$) Employment	0.233192	0.267652	0.116596	SE > ½ Regression Coefficient

Opportunity				

The recapitulation of the calculations in table 18. above explains that the explanatory ability test shows model 1 and model 2 show a standard error smaller than ½ β. This means that each variable has a high capacity to explain the relationship between the variables studied. While model 3 shows a standard error greater than ½ β. This means that the foreign direct investment (FDI) variable does not have a high capacity to explain the relationship with the employment opportunity level variable.

d. Forecasting Ability

Table 19. *Forecasting Ability*

Variable	Coefficient of Determination *Adjusted R-Squared*	Description
Model 1		
Logistic influence of performance index, rupiah exchange rate, labor force, inflation, and infrastructure on foreign direct investment (FDI) (X1, X(2,) X(3,) X(4,) X(5)→ Y)	73.8678% > 50%	Fit
Model 2		
Effect of foreign direct investment (FDI) on GRDP (Y → Z1)	83.6874% > 50%	Corresponding
Model 3		
Effect of foreign direct investment (FDI) on employment opportunity (Y → Z2)	83.8675% > 50%	Suitable

In table 19, it can be explained that the forecasting ability test on all models shows the Adjusted R-Squared value above 50 percent so that it has a high predictive ability for the behavior of the dependent variable. Thus, from all model feasibility tests, all models from this study have met the research feasibility standards.

Based on the results of the Model Feasibility Test, model 1 and model 2 of the research produce research models that have met the goodness of an econometric model or characteristics that can be expected according to the reference. However, model 3 does not meet the goodness of an econometric model because it does not pass the Accuracy of the Estimates of the Parameters and Explanatory Ability.

CONCLUSION

From the results of testing the eight hypotheses in this study, panel data regression analysis was made to test the effect of independent variables on the dependent variable both simultaneously and partially. It was found that rupiah infrastructure is the most dominant variable that significantly and positively affects foreign direct investment (FDI). While logistics performance index becomes the second dominant variable that significantly and positively affects foreign direct investment (FDI). The variables of rupiah exchange rate, labor wage and inflation are supporting variables that significantly and negatively affect foreign direct investment (FDI).

Foreign direct investment (FDI) has a significant and positive effect on gross regional domestic product (GRDP t-1) on the island of Java by 83.68%. Meanwhile, foreign direct investment (FDI) has an insignificant and positive effect on employment opportunities on the island of Java.

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