

## The Influence of Foreign Investment and Domestic Investment on Inequality in Economic Development between Regions in Java Island in 2012-2021

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### ABSTRACT

Economic Development Inequality is a serious problem, and many factors influence it. This study aims to determine how the influence of Foreign Investment and Domestic Investment on Economic Development Inequality between regions in Java for the period 2012 to 2021. Economic Development Inequality is measured using an inequality measurement tool called the Williamson Index. The calculation results show that Foreign Investment has no effect and is not significant on Economic Development Inequality. Domestic investment has an effect and is significant on Economic Development Inequality.

**Keywords:** Williamson Index; Economic Development Inequality; Foreign Investment; Domestic Investment.

### 1. INTRODUCTION

Economic growth in a country is considered important because it shows the health and strength of the economy in that country. Strong economic growth can result in increased employment, per capita income, living standards, and better investment opportunities. Attempt to increase economic growth is also by increasing economic development in a country. Economic development is very important for developing countries. In Indonesia, economic development is one way to improve its people's welfare. In this case, economic development in Indonesia is expected to be evenly distributed in each region, which aims to reduce the development gap between regions in Indonesia. Economic Development indirectly affects the problem of inequality between regions (Rahman, 2018).

The beginning of the creation of inequality is due to differences in the ability to increase economic growth and encourage development in these regions. So, it is not surprising that there are relatively developed and relatively underdeveloped areas (Azim et al., 2022). One that can affect regional inequality is investment. On the other hand, investment can help to increase the economic growth of a region, create new jobs, increase income and accelerate infrastructure development. However, on the other hand, investment can also be the most significant cause of regional inequality if investment is only made in certain regions, for example, regions with more developed economies than others.

The important thing in development is capital formation because a country needs a considerable investment value to achieve high development targets. So the first step of development activities is investment. The most appropriate strategy is to invite foreign capital and industrialize to accelerate economic growth. However, increasing economic growth in a country does not mean increasing the growth of all regions together, and this is due to differences or limitations from the potential of natural resources, human resources, and also supporting institutions. This is what implements economic development often causes inequality.

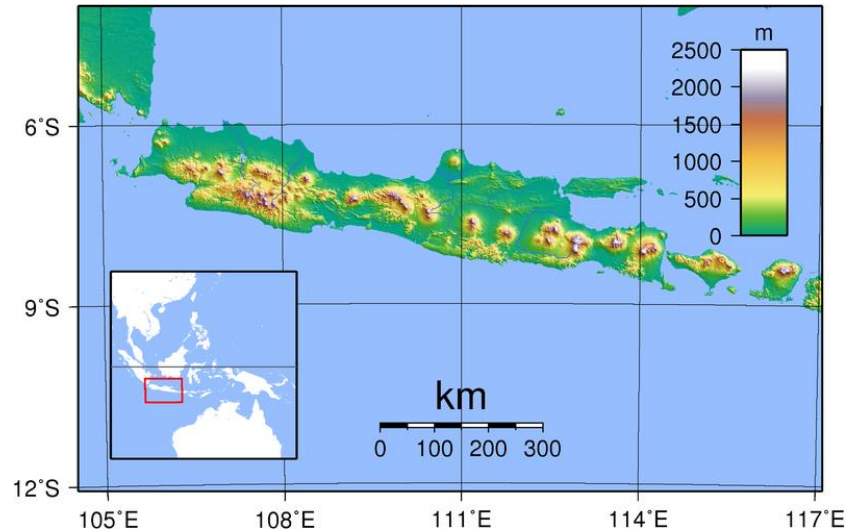
Development in an area requires capital. Investment is the main capital or source of funds for development in an area. Investment is divided into two types: Domestic Investment (DI) and Foreign Investment (FDI). DI is considered capable of encouraging a country's economy well, so if DI increases, economic growth will also increase (Rahmah et al., 2022). In addition, FDI is referred to as the flow of capital flows from abroad to be channeled to the private sector. According to Myrdal, capital or investment movements tend to increase regional inequality. This is because not all provinces are targeted for investment. This means that differences in investment allocation can increase development inequality between regions (Jhingan, 2014).

Regarding Domestic Capital Investment (DI) in Law No. 6 of 1968 and Law No. 12 of 1970, the definition of domestic capital in article 1 is part of the wealth of the Indonesian people, including rights and objects, both owned by the State and foreign private domiciled in Indonesia that are set aside or provided to run a business as long as the capital is not regulated by the provisions of article 2 of Law No. 12 of 1970 concerning foreign Investment (Ruslan et al., 2020).

While the concept of Foreign Direct Investment (FDI), namely foreign direct investment or FDI, is one form of the flow of international financial resources that large multinational companies usually carry out. This investment fund is directly realized through the establishment of factories, the procurement of production facilities, the purchase of machinery, and so on. This private foreign investment can also be in the form of portfolio investment whose

investment funds are not realized directly as means of production but are invested in various financial instruments such as stocks, bonds, certificates of deposit, investment promissory notes, and so on (Malik & Kurnia, 2017).

Java Island is one of the largest islands in Indonesia, consisting of six provinces: West Java Province, Central Java Province, East Java Province, Banten Province, DKI Jakarta Province, and Yogyakarta Special Region. Java Island is Indonesia's economic growth center and has several advantages that contribute significantly to the national economy. Some of the things that make it the center of Indonesia's economic growth are Java Island is a financial and business center, good infrastructure, availability of educated human resources, natural resource wealth, and industrial and manufacturing centers.

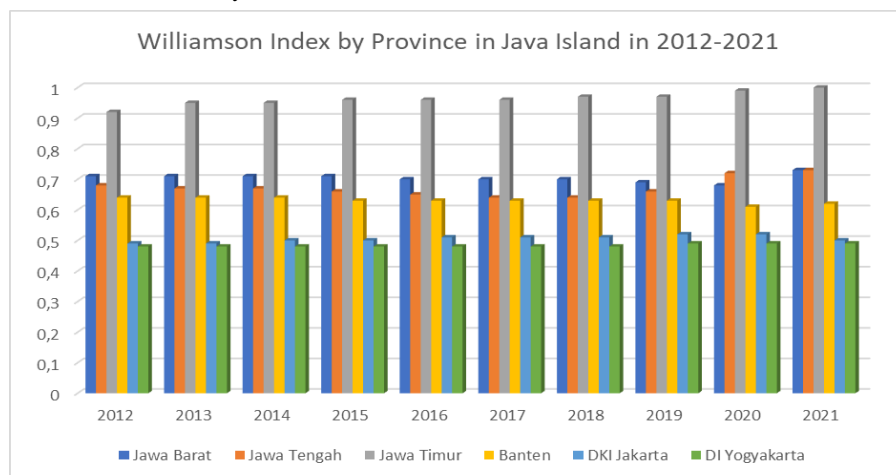


Source: Wikipedia, 2023

As the center of economic growth in Indonesia also provides benefits to other regions in Indonesia through trade flows, investment, and labor migration. However, differences in the level of development and the level of access to economic facilities and opportunities between provinces in Java create inequality. To see the magnitude of development inequality between regions, you can use a measurement tool for development inequality, namely the Williamson Index.

The Williamson Index (I.W.) was introduced by Jeffrey G Williamson in 1966. To get the value of the Williamson Index, it requires some data, namely GDP per capita and the population, which will later produce values between zero and one or ( $0 < W < 1$ ). Suppose the Williamson Index number is getting closer to zero. In that case, it shows a smaller inequality, while if the Williamson Index number is getting further away from zero, it shows high inequality.

Graph 1.1 Williamson Index by Province in Java Island in 2012-2021



Source: BPS (processed), 2023

From the description and data of the Williamson Index above, it can be seen that this study aims to determine the effect of Foreign Investment (FDI) and Domestic Investment (DI) on Development Inequality in the Java Island Region in 2012-2021. Azim et al. said in their research entitled "Determinants of Inequality of Economic Development Between Provinces in Indonesia" that domestic investment showed negative signs but did not affect

economic development inequality between regions in 33 provinces in Indonesia. Foreign investment showed positive signs and had a significant effect on the inequality of economic development inequality between regions in 33 provinces in Indonesia. Indonesia (Azim et al., 2022). Meanwhile, Janah et al.'s research entitled "Analysis of the Effect of GDP Level Percapita, Human Development Index, and Foreign Investment on Income Inequality in Indonesia for the 2019-2021 period" argues that Foreign Direct Investment (FDI) has a negative relationship with income inequality (Gini) (Janah et al., 2022) and in the research of Wibowo et al. entitled "Regional Development Inequality and Investment in Banjarnegara District," said that the variable of domestic Investment (DI) has a significant influence on development inequality with a probability of 0.000 (Banjarnegara, n.d.)

## **2. LITERATURE REVIEW**

### **2.1 Inequality of Economic Development**

Todaro (1987) explained that development inequality could occur if a country's national income and expenditure are not balanced while capital or investment factors experience a decline. One measure used so that economic growth achieved can be evenly distributed among regions within a country or province can be measured by the Williamson Index. Williamson examines the relationship between regional disparities and levels of economic development using economic data from developed and developing countries. It was found that during the early stages of development, regional disparities became greater, and development was concentrated in certain areas. (Kuncoro, Mudrajad 2004). Equity can be seen if the Williamson Index value is close to 1, then development is more uneven, and vice versa. If it is close to 0, development is more evenly distributed. (Umiyati, 2014)

According to Ernawati (2021) in the Regional Economic Module, the factors that cause inequality in economic development are:

a. The concentration of Economic Activities in the region

A large concentration of economic activity in certain regions is one aspect that causes the formation of development inequality between regions. The economies of regions with large concentrations tend to grow rapidly compared to areas with low economic concentrations.

b. Investment Allocation

Based on the principle of Economic Growth, Harrod Domar explained that there is a relationship between the level of capital and the rate of economic change. This means that low capital in a sector builds economic change, and the level of public rewards of individual bulbs in the written sector is low because there is no productive economic program.

c. Low level of mobility of factors of production between regions

The lack of smooth mobility of cultivation constituents as a strength of employment and capital between zones is the reason for the birth of regional economic disparities. The relationship between the stretching of the cultivation constituents and the lameness of the update or change between zones can be explained using an approximation of market mechanisms. Differences in the rate of economic change will invite compensatory conflicts between human arc lamps between zones using the assumption that the market mechanism of output or input is free.

d. Differences in Demographic Conditions Between Regions

The lack of smooth mobility of creation constituents such as employment styles and assets between places makes the birth variable of regional economic imbalance. The interlocutory relationship between the constituents of creation and the lameness of renewal or development between places can be explained by the approximation of market mechanisms. Differences in the pace of economic growth will give rise to the antipathy of individual incandescent guard money between places, adding to the guess that the market mechanism of output or input is free. (Banjarnegara, n.d.)

### **2.2 Foreign Direct Investment (FDI) and Foreign Investment (DI)**

In Law no. 6 of 1968 and Law no. 12 of 1970 concerning Domestic Investment (DI), the definition of domestic capital is mentioned first in article 1, which is as follows: a. This law explains that "domestic capital" is: part of the wealth of Indonesian society including rights and objects, both owned by the State and foreign private domiciled in Indonesia that is set aside or provided to run a business as long as the capital is not regulated by the provisions of article 2 of Law No. 12 of 1970 concerning foreign investment. In paragraph 1 of this article, private parties with domestic capital may consist of individuals and legal entities established under applicable law in Indonesia. Then in Article 2, it is stated that What is meant in this law by "Domestic Investment" is the use of wealth, as mentioned in article 1, either directly or indirectly to carry out business according to or under the provisions of this law.

According to Law No. 1 of 1967 and Law No. 11 of 1970 concerning FDI, what is meant by Foreign Direct Investment (FDI) is foreign direct investment carried out according to or under the provisions of this law and which is used to run the Company in Indonesia in the sense that the capital owner directly bears the risk of the investment. While the definition of Foreign Capital includes:

1. With government approval, foreign instruments that are not part of Indonesia's foreign exchange wealth are used for corporate financing in Indonesia.
2. Tools for companies, including new inventions owned by foreigners and materials imported from abroad into Indonesian territory, as long as the tools are not financed from Indonesian wealth. A portion of the company's proceeds under this law can be transferred but is used to finance companies in Indonesia. (Ruslan et al., 2020)

### 3. RESEARCH METHODS

This regression test uses quantitative methods by taking secondary data based on BPS West Java Province, East Java Province, Central Java Province, Banten Province, DKI Jakarta Province, and Yogyakarta Special Region in the form of Foreign Direct Investment (FDI) and Domestic Investment (DI) data as well as Population and GDP data on a Constant Price Basis to calculate the Williamson Index with the period 2012-2021.

This study used research data in the form of panel data. Panel data contains cross-section data in a certain period (time series). In other words, panel funds combine cross-section data with time series. The data used in this study is from 6 provinces located on Java Island from 2012-2021.

### 4. RESEARCH RESULTS AND DISCUSSION

The panel data regression model is a regression model that collects time-series data observations and cross-section data by determining the estimation model through the Common Effect, Fixed Effect, and Random Effect approach. The test is carried out with the Chow Test and the Hausman Test.

#### 4.1 Model Conformity Test

##### 4.1.1 Chow Test

Redundant Fixed Effects Tests

Equation: Untitled

Test cross-section fixed effects

Effects Test	Statistic	d.f.	Prob.
Cross-section F	719.200324	(5,52)	0.0000
Cross-section Chi-square	255.041465	5	0.0000

The results of the Chow Test state that if the probability value is smaller than the alpha value (0.1), then the temporary model is the Fixed Effect Model.

##### 4.1.2 Hausman Test

Correlated Random Effects - Hausman Test

Equation: Untitled

Test cross-section random effects

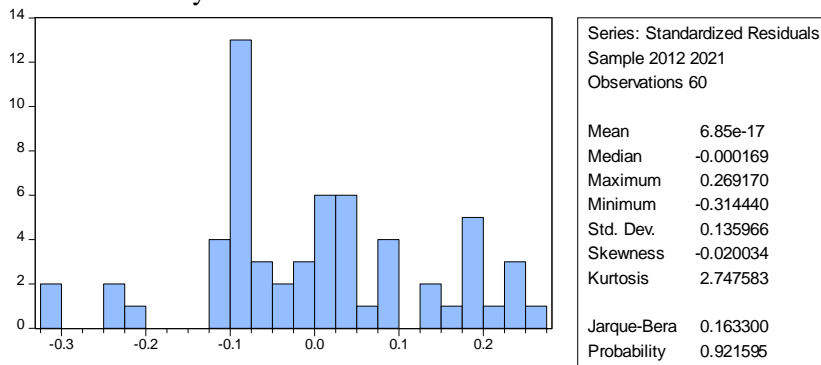
Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	5.650134	2	0.0593

The results of the Hausman Test state that the probability value is smaller than the alpha value (0.1), so the model is a Fixed Effect Model.

#### 4.2 Classical Assumption Test

Next is the classical assumption test, which aims to test hypotheses based on unbiased analysis models, and the results are close to accurate. The Classical Assumption Test consists of Normality Test, Autocorrelation Test, Multicollinearity Test, and Heteroskedasticity Test.

##### 4.2.1 Normality Test



The results of the Normality Test above use the Jarque-Bera Test (J.B. test) and show a JarqueBera value of 0.921595 or greater than 0.1. This means that the data is usually distributed.

#### 4.2.2 Multicollinearity Test

	FDI	DI
FDI	1.000000	0.428577
DI	0.428577	1.000000

The results of the Multicollinearity Test above show 1.000000 greater than 0.8. This means that FDI and DI variables occur in Multicollinearity.

#### 4.2.3 Heteroskedasticity Test

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.065412	0.018034	3.627044	0.0006
FDI	-3.80E-06	5.62E-06	-0.676854	0.5012
DI	2.17E-06	5.93E-07	3.663224	0.0005

The Heteroskedasticity Test results show that one variable's probability value is greater than 0.1 and one of the variables is less than 0.1.

#### 4.2.4 Autocorrelation Test

##### Effects Specification

Cross-section fixed (dummy variables)				
R-squared	0.989759	Mean dependent var		0.659500
Adjusted R-squared	0.988380	S.D. dependent var		0.160407
S.E. of regression	0.017291	Akaike info criterion		-5.153662
Sum squared resid	0.015547	Schwarz criterion		-4.874416
Log-likelihood	162.6099	Hannan-Quinn criteria.		-5.044434
F-statistic	717.9144	Durbin-Watson stat		0.724968
Prob(F-statistic)	0.000000			

One measure in determining autocorrelation's presence or absence is the Durbin Watson (D.W.) test. D.W. values derived between dU and 4-dU values indicate a model free from autocorrelation problems. The autocorrelation test results above show D.W. of 0.724968 with dL = 1.5144 and dU = 1.6518 (See table dL dU). It can be explained that the results of  $D.W. \leq dL \leq dU \leq (4-dL) \leq (4-dU)$  or  $0.724968 < 1.5144 < 1.6518 < 2.3484 < 2.4856$ . This means that the results of autocorrelation testing can be stated that the model is autocorrelation.

#### 4.3 t-Test

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.658610	0.010131	65.00873	0.0000
DI	3.18E-07	1.80E-07	1.769881	0.0826
FDI	-2.63E-06	3.45E-06	-0.760858	0.4502

Then continued with the t-test, which aims to show how much influence between variables individually in explaining the dependent variable.

##### 4.3.1 Foreign Direct Investment (FDI) on Economic Development Inequality

The Foreign Direct Investment variable produces t-statistics (-0.760858) > t-table (-1.67203). The probability value of the Foreign Direct Investment (FDI) variable is 0.4502 > 0.1, so the data is not significant. This means there is no influence or insignificance between FDI variables and Economic Development Inequality.

##### 4.3.2 Domestic Investment (DI) on Economic Development Inequality

The Domestic Investment variable produces t-statistics (1.769881) > t-table (1.67203). The probability value of the Domestic Investment (DI) variable is 0.0826 < 0.1, then the data is significant. This means there is an influence and significance between DI variables and Economic Development Inequality.

#### 4.4 F-Test

Next is Test F, which aims to show whether all independent variables influence the dependent variable together.

Based on the probability  $(0.0000) < \alpha (0.1)$  results,  $H_0$  is rejected, and  $H_1$  is accepted. This means that Foreign Direct Investment (FDI) and Domestic Investment (DI) variables simultaneously affect the Inequality of Economic Development in Java Island from 2012-2021.

## 4.5 Discussion

### 4.5.1 Foreign Direct Investment (FDI) on Economic Development Inequality

This study obtained the results that the FDI variable negatively affects the variable of Economic Development Inequality in Provinces in Java Island, meaning that when FDI decreases, it will increase Economic Development Inequality in Provinces in Java Island. The increase in FDI which causes a decrease in inequality in economic development can mean that the distribution of FDI has begun to experience equity (Aurelia Andaresta & Riani, S.E., M.Sy, 2023)

The results of this study are not in accordance with Myrdal's theory in Jhingan (Jhingan, 2014) with his theory that capital movement tends to have an effect on increasing regional inequality or economic inequality between regions. This study is in accordance with research (Janah et al., 2022) there is no influence and no significant between FDI variables and Income Inequality.

### 4.5.2 Domestic Investment (DI) on Economic Development Inequality

This study obtained the results that the DI variable has a positive effect on the variable of Economic Development Inequality in Provinces in Java Island, meaning that when PMDN increases, it will increase Economic Development Inequality in Provinces in Java Island. This is because DI investment usually tends to be concentrated in regions or sectors that already have comparative advantages or good infrastructure. As a result, inequality between regions may further increase, with less developed regions lagging behind compared to more developed regions.

The results of this study are in accordance with Myrdal's theory in Jhingan (Jhingan, 2014) with his theory that capital movement tends to have an effect on increasing regional inequality or economic inequality between regions. This research is in accordance with the research of Wibowo et al (Banjarmegara, n.d.) that the variable of domestic investment (DI) has a significant influence on development inequality.

## 5. CONCLUSION

Based on the results of the analysis and discussion above regarding Foreign Direct Investment (FDI) and Domestic Monetary Investment (DI) on Economic Development Inequality in Java Island in 2012-2021, it can be concluded that FDI does not have a significant effect on Economic Development Inequality and DI has a significant impact on Economic Development Inequality. However, FDI and DI variables simultaneously significantly affect Economic Development Inequality.

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