Determinant Analysis of Foreign Directed Investment in Java Island

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Abstract. The goals of Indonesia's economic development are high economic growth and low poverty rates. One of the factors that support economic progress is Foreign Directed Investment (FDI) because technology transfer can increase the productivity of domestic companies and be able to create job opportunities. Based on BPS data for 2020, Indonesia's FDI is concentrated on the island of Java. The purpose of this study is to find out what factors influence FDI in Java. The object of this research data is the Province of DKI Jakarta, West Java, Central Java, DI Yogyakarta, East Java and Banten. The data used is secondary data published by the Provincial BPS in the period 2012 to 2020 with the sampling technique used is purposive sampling. The research design used inferential statistical analysis with explanatory research methods. The data analysis technique used is the stationary test, model formulation, model suitability test, and hypothesis testing using the F test and T test. The results obtained are that the determinants of FDI in Java are income per capita, Indonesian democracy index, minimum wage and inflation with a magnitude of the effect is 77.268%.

Keywords: Determinant Analysis; FDI; per capita income; Indonesia democracy index; minimum wage; inflation

1 Introduction

The goals of Indonesia's economic development are high economic growth and low poverty rates. The government has formulated various policy strategies to achieve ideal conditions, however, in 2019 the unpredictable Covid 19 pandemic caused a drastic slowdown in economic growth and resulted in an increase in poverty rates. In order to overcome the existing problems, it is necessary to extract information related to the factors that influence economic growth (GDP) and reduce poverty.

The higher the investment, the higher the economic growth. Investment will have a dual effect on the supply side and on aggregate demand, while also providing long-term capital stock. Solow and Romer's endogenous theory states that one component of economic growth is capital accumulation, which includes all or any type of investment invested in land, physical equipment, and human capital (Todaro 2013, p 92). Given the importance of FDI as a driver of economic growth and can reduce poverty, it is necessary to look for factors that contribute to FDI.

The main motivation for investors in choosing a location is the potential market. The higher the potential market, the higher the demand for goods or services (Sodik & Nuryadin 2008,

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p.21). This indicator is measured by market size where the proxy variable used is per capita income. Alhshamsi et al (2015, p.136), per capita income affects FDI because an investor understands that high per capita income is a reflection of good economic conditions. Another way for investors to determine investment locations is to consider political stability (Muslim 2016, p.106).

This is in line with Bitar et al (1019, p.47) and Kurecic & Kokotovis (2017, p.15) which state that political stability is the main factor influencing FDI. Low democracy is positively correlated to political instability, while good democracy is negatively correlated to political instability (Xu 2011, p.18). The Central Bureau of Statistics developed the Indonesian Democracy Index as one of the variables describing the political and security situation. These indicators describe public perceptions that include civil liberties, political rights and aspects of democratic institutions (BPS 2020, p. 10).

Another view of investors to invest is that the availability of low labor costs gives the company a competitive advantage. The relationship between labor wages and FDI has a negative or opposite relationship, this is supported by Saglam & Boke (2017, p. 1) stating that work wages have an influence on FDI. Dewata & Swara (2013, p.356) suggest that investors are interested in investing due to the low wages of labor. In addition, inflation will reduce people's purchasing power, this affects the economic growth of a country and has implications for investor countries to reduce investment so that the risk of not achieving the desired profit is reduced (Hong et al 2020, p. 203).

This opinion is also in line with Anwar et al (2016, p. 191) which states that high inflation results in a greater risk of business failure and is a factor that investors are not interested in investing. Research related to inflation having a negative effect on FDI has been carried out, Anwar et al (2016, p. 190), Barorah et al (2019, p. 9), Meftah & Nassour (2019, p. 201). Meanwhile, in contrast to previous research, Supriani & Fianto (2020, p.91) found that the inflation rate did not affect FDI in member countries of the Organization of Islamic Cooperation (OIC).

Based on the previous description, several factors that influence FDI are income per capita, Indonesia's democracy index, minimum wage and inflation. However, each region has different characteristics, so that the determinants of FDI from one region can be different from other regions. Therefore, research will be analyzed the determinants of FDI in Java.

2 Literature Review

The following is a theory related to the variables used in the study:

Foreign Direted Investment

Lindert (1994, p.631) explains that FDI is a flow of lending to, or buying ownership of, foreign companies whose capital is mostly owned by residents of the investing country. Krugman (2003, p.204) defines FDI as international capital flows where companies from one country establish or expand their companies in other countries. Therefore, there is not only a transfer of resources, but also the enforcement of control over companies abroad.

Per Capita Income

Sukirno (2004, p.424) defines per capita income as the average income of the population of a country at a certain time, where the value is obtained from the value of gross domestic product in a given year divided by the total population in that year. Hasyim (2017, p.25) states that per capita income is the average income of the population of a country in a certain period, which is usually calculated within one year. In line with the opinion above.

Indonesian Democracy Index

In this research, political stability is proxied by the democracy index. In Indonesia, the democracy index released by BPS is named the Indonesian Democracy Index (IDI) which represents a picture of the political conditions in Indonesia (Syafri & Riyono 2015, p.3). IDI aims to describe the development of democracy quantitatively at the provincial level in Indonesia, even though it is called the Indonesian Democracy Index, but it is actually a collection of democracy indexes at the provincial level. In 2009, 3 aspects were used as objects of study, namely civil liberty, political rights, and institutions of democracy (Rauf et al 2009, p.16).

Minimum Wage

Wages can be based on a work agreement, as long as the wage provisions in the work agreement do not conflict with the legislation. If it turns out that the wage provisions are contradictory, then what applies is the wage provisions in the legislation (Budiono 2009, p.29). The minimum wage is expected to achieve the needs of a decent life which is carried out in stages (Rusli 2004, p.91). According to Husni (2004, p.153), the determination of the minimum wage by the government is based on the need for a decent life by taking into account productivity and economic growth.

Inflation

According to Tandelilin (2001, p.212), inflation is the tendency of an increase in the prices of goods caused by demand exceeding supply. Sukirno (2014, p.165) and Natsir (2014, p.253) define that inflation is a symptom of rising prices for goods and services in general and continuously.

3 Research Methods

The data used in this study are secondary data obtained from BPS DKI Jakarta, BPS West Java, BPS Central Java, BPS DI Yogyakarta, BPS East Java, and BPS Banten in the framework of 2012 to 2020. Data analysis techniques used in this study are inferential statistics and regression analysis. The following is a description of the tests carried out.

Stasionary Test

Stationary test using the method of Levin, Lin & Chu t, if the probability value of Levin, Lin & Chu t. < 0.05 then the data is stationary.

Model Formulation

There are three approaches in calculating the panel data model namely the Common Effect Model, Fixed Effect Model and random effect model. The model suitability test was carried out with the help of Eviews 11. The descriptions are as follows:

Chow Test

The criteria of Chow test are CEM will be picked when the probability value is more than or equal to 0,05, Meanwhile FEM will be picked.

Lagrange Multiplier Test

The Criteria of Lagrange Multiplier (LM) test are when the probability value is more than or equal to 0,05 then CEM will be picked, otherwise REM will be picked.

Hausman test

The criteria of Hausman test are REM will be picked when the probability value is more than or equal to 0,05, otherwise FEM.

Hypothesis Test

The description of the hypothesis testing carried out in this study:

Coefficient of Determination

The coefficient of determination (R^2) is used to measure the contribution of the independent variable to the dependent variable. The coefficient of determination is shown by the R adjusted square value.

F test

F-statistical test is used to determine the simultaneous effect of independent variables on the dependent variable. The Criteria are, If the value of probability less than 0,05, then all of the independent variable affect simultaneous on FDI and otherwise.

t test

The t-statistic test used to determine the independent variable partially affected the dependent variable. If the value sig<0,05, then the independent variable partially affects the independent variable.

4 Results and Discussion

4.1 Result

Stasionary test

Based on the stationary test, it was found that the variables of per capita income, Indonesian democracy index, minimum wage, inflation and FDI were stationary at level (0) with Levin, Lin and Chu values respectively 0.0000, 0.0000, 0.0001, 0.0000 and 0.00000.

Formulasi Model

Based on the Chow test, LM test and Hausman test, it was found that FEM was stated to be better in modeling the existing data, with the model formulation as follows:

$$\ln(\hat{Y}_{it}) = 23,96406 + 0,565266 \ln(X_{1it}) + 1,608103 \ln(X_{2it}) + 1,233001 \ln(X_{3it}) - 2,064719 \ln(X_{4it})$$

The interpretation of the regression equation above is:

The constant value of 23,96406 means that if all the cateris paribus variables are 0, then the FDI of Java is 23.96406.

The value of the regression coeficient $\ln(X_{1it})$ of 0.565266 means that the increase in per capita income is inelastic to FDI.

The value of the regression coeficient $\ln(X_{2it})$ of 1,608103 means that the Indonesia's Democracy Index increases towards FDI.

The value of the regression coeficient $\ln(X_{3it})$ of 1,233001 means that the increase in the minimum wage is elastic to FDI.

The value of the regression coeficient $\ln(X_{4it})$ sebesar -2,064719 means that the increase in inflation is elastic to FDI.

Hypotesis Test:

F Test

Based on F Test, The result is prob=0,0000 less than 0,05. Based on the calculation results, it can be concluded that per capita income, Indonesia's democracy index, minimum wage and inflation affect FDI in Java.

T Test

Based on T Test, the result is The prob value of per capita income is 0.029 which means that there is a significant influence between per capita income on FDI in Java. The higher the per capita income, the higher the FDI in Java. The prob value of per capita income is 0.0413 which means that there is a significant influence between the Indonesian Democracy Index on FDI in Java. The higher the Indonesian Democracy Index, the higher the FDI in Java. The prob value of per capita income is 0.0002 which means that there is a significant influence between the minimum wage on FDI in Java. The higher the minimum wage, the higher the FDI in Java. The prob value of per capita income is 0.0124 which means that there is a significant effect of inflation on FDI in Java. The higher the inflation, the higher the FDI in Java.

Coefficient of Determination

The Value of coeeficient Determination of per capita income, the Indonesian Democracy Index, the minimum wage and inflation on FDI in Java is 77,2268%.

4.2 Discussion

Significant effect of per capita income, Indonesian democracy index, minimum wage, and inflation simultaneously on FDI. The results of the calculations in the previous sub-chapter show that there is a significant effect of per capita income, Indonesia's democracy index, minimum wage and inflation on FDI in Java. The effect is 77,2268%. The results of the study are in accordance with the theory of Alan M. Rugman (1988) namely FDI foreign investment through the electric design theory which is needed if the company is engaged in foreign investment, namely strategies, behavioral motives, economic motives.

The strategy is to find a market in this study is the market size which is proxied by per capita income, political stability is proxied by the Indonesian Democracy Index. While the economic motive is represented by the amount of the minimum wage and inflation. This is in line with the results of Bui's research (2015, p.129), namely market size as proxied by per capita income affects FDI, and Septiantoro et al (2020, p.208) state that political stability affects FDI.

Significant Effect of Pe rcapita Income on FDI

Based on the t-test, it was found that there was a positive influence between per capita income and FDI in Java. The higher the income per capita in Java, the higher the FDI, this is in line with the research of Haris et al (2015). The higher the potential market, the higher the demand for goods or services (Sodik & Nuryadin 2008, p.21). This indicator is measured by market size where the proxy variable used is per capita income. According to Alhshamsi et al (2015, p.136) per capita income affects FDI because an investor understands that high per capita income is a reflection of good economic conditions.

Significant Effect of Indonesian Democracy Index on FDI

Based on the partial t test, it was found that there was a positive effect of the Indonesian Democracy Index on FDI in Java. This is in line with the research results (Muslim 2016, p.106). This is in line with Bitar et al (1019, p.47) and Kurecic & Kokotovis (2017, p.15) which state that political stability is the main factor influencing FDI. Low democracy is positively correlated to political instability, while good democracy is negatively correlated to political instability (Xu 2011, p.18).

Significant Effect of Minimum Wage on FDI

Based on the partial t test there is a negative effect between the minimum wage on FDI in Java. The availability of low labor costs gives the company a competitive advantage. The relationship between labor wages and FDI has a negative or opposite relationship, this is supported by Saglam & Boke (2017, p. 1) stating that work wages have an influence on FDI. Dewata & Swara (2013, p.356) suggest that investors are interested in investing due to the low wages of labor.

Significant effect of inflation on FDI

Based on the partial t test, it is found that there is a negative effect between inflation and FDI. The relationship between labor wages and FDI has a negative or opposite relationship, this is supported by Saglam & Boke (2017, p. 1) stating that work wages have an influence on FDI. Dewata & Swara (2013, p.356) suggest that investors are interested in investing due to the low wages of labor. High inflation has an impact on decreasing profits, in this situation, the real value of money will decrease and make high-cost investment and lower FDI (Lembong & Nugraha 2013, p. 2).

In addition, inflation will reduce people's purchasing power, this affects the economic growth of a country and has implications for investor countries to reduce investment so that the risk of not achieving the desired profit is reduced (Hong et al 2020, p. 203). This opinion is also in line with Anwar et al (2016, p. 191) which states that high inflation results in a greater risk of business failure and is a factor that investors are not interested in investing. Research related to inflation having a negative effect on FDI has been carried out, Anwar et al (2016, p. 190), Barorah et al (2019, p. 9), Meftah & Nassour (2019, p. 201). Meanwhile, in contrast to previous research, Supriani & Fianto (2020, p.91) found that the inflation rate did not affect FDI in member countries of the Organization of Islamic Cooperation (OIC).

4 Conclusion

Based on the results of the research and analysis of the discussion, the conclusions of this study are per capita income, Indonesian democracy index, minimum wage, and inflation simultaneous and partially affected FDI in Java. The contribution of all independent variables to FDI is 77,2268%.

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