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Analysis of Factors Affecting Foreign Direct Investment (FDI) Inflows in Indonesia

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Keywords:
Tax Treaty; Foreign Direct Investment; Gross Domestic Product

Abstract

This study aims to examine the factors that influence the inflow of Foreign Direct Investment (FDI) in Indonesia. The data in this study are panel data that combines time series data and cross sectional data. Time series data covers the period 1990 to 2018, while cross sectional data covers partner countries that hold tax treaty with Indonesia. The research hypothesis was tested with panel data regression. Based on the results of the analysis, it is obtained evidence that the Tax Treaty (Perjanjian Penghindaran Pajak Berganda/P3B) variable has different effects based on its age range. Tax treaty which has a short-term age range has no effect on FDI inflow, medium age range has a negative effect, and a long-term range has a positive effect. Therefore the government can maximize the flow of FDI from countries that have a long-term tax treaty life span. Openness in trade in partner countries also has a positive effect on FDI inflows in Indonesia (FDI). The higher level of trade openness with partner countries, means the lower trade barriers in the country. Whereas the ratio of GDP per capita of partner countries to Indonesia and the exchange rates of partner countries to USD negatively affect FDI inflows.

Kata-kata kunci:
Tax treaty; Foreign Direct Investment; Produk Domestik Bruto

Abstrak

Penelitian ini bertujuan menguji faktor yang mempengaruhi aliran masuk Foreign Direct Investment (FDI) di Indonesia. Data dalam penelitian ini berupa data panel yang menggabungkan data time series dan data cross sectional. Data time series mencakup periode tahun 1990 sampai dengan 2018, sedangkan data cross sectional mencakup negara-negara mitra yang mengadakan tax treaty dengan Indonesia. Hipotesis penelitian diuji dengan regresi data panel. Berdasarkan hasil analisis, diperoleh bukti bahwa variabel tax treaty (Perjanjian Penghindaran Pajak Berganda/P3B) memiliki pengaruh yang berbeda-beda berdasarkan rentang umurnya. Tax treaty yang memiliki rentang umur jangka pendek tidak berpengaruh terhadap aliran masuk FDI, rentang umur menengah memiliki pengaruh negatif, dan rentang jangka panjang berpengaruh positif. Oleh karena itu pemerintah dapat memaksimalkan aliran FDI dari negara-negara yang telah memiliki rentang umur tax treaty jangka panjang. Keterbukaan perdagangan negara mitra juga berpengaruh positif terhadap aliran masuk FDI di Indonesia (FDI). Semakin tinggi tingkat keterbukaan perdagangan dengan negara mitra, berarti semakin rendah hambatan perdagangan di negara tersebut. Sedangkan rasio PDB per kapita negara mitra terhadap Indonesia dan nilai tukar mata uang negara mitra terhadap USD berpengaruh negatif terhadap aliran masuk FDI.

1. Introduction

Tax treaty *(Perjanjian Penghindaran Pajak Berganda/P3B)* aims to create certainty in the form of tax treatment commitments to investors. Tax treaty is expected to be a guarantee for investors to get standard treatment when there is a dynamic taxation issue in a country. In addition tax treaty is also used as a guarantee that the treatment given to investors will be fair and tends to be easier (Braun & Zagler, 2014). Furthermore, the reduction in tariffs as a

form of tax incentives provided through tax treaty, is expected to also be able to spur increased investment and trade flows in countries that have an agreement (Nurhidayat, 2012).

The government should know the factors that can influence FDI inflows in Indonesia. Analysis of new tax treaty needs and evaluations of current tax treaty will be more targeted if the government knows the determinants of FDI. In the early stages of the process of establishing tax treaty, the government needs to prepare various analyzes to assess the feasibility of tax treaty. One of the most important analyzes is the analysis to find out the economic benefits that will be obtained if the government decides to conduct a Tax Treaty with potential partner countries. The analysis will be the basis for evaluating: (1) how important the tax treaty is to be realized, (2) in what direction the tax treaty will be taken, and (3) the focus of discussion in the tax treaty negotiations with potential partner countries. For the purpose of increasing investment, a tax treaty analysis from the economic aspect must be linked to the determinants of the investment. Therefore, research on the influence of economic factors on FDI inflows from tax treaty partner countries is interesting and needs to be done

Chakrabarti (2001) states that FDI does not yet have consensus on a theoretical framework so that it causes the emergence of diverse literature regarding determinants of FDI. There are differences in conclusions seen from the direction of the relationship and statistical significance in the results of previous studies regarding the influence of economic factors on FDI. The effect of GDP per capita on FDI showed positive results in Changwatchai (2010), a negative effect on Bhasin & Manocha (2016), and showed no influence on the results of Naveed & Shabbir (2006). Furthermore, research on the relationship of trade openness to FDI shows a positive influence in Chakrabarti (2001). These results are different from Vijayakumar, Sridharan, & Rao (2010) which concluded that there is no effect of trade openness on FDI. Meanwhile, based on Lily, Kogid, Mulok, Thien, & Asid (2014), the importance of currency exchange rates to attract FDI is still questionable because it gives a different effect on the country under study. In some countries such as Malaysia, Philippines and Singapore, the decline in the exchange rate shows a positive effect on FDI inflows, whereas in Thailand the decline in the exchange rate does not have an effect on FDI inflows. Similarly, the results of previous studies on the effect of population on the entry of FDI flow showed a positive influence in Aziz & Makkawi (2012), but on the other hand showed a negative effect in Ohno (2010).

Based on this description, it can be seen that the effect of tax treaty and economic conditions on FDI inflows in a country is still being debated so that no conclusions have yet been found. The aim of this study is to obtain empirical evidence of the effect of the age of effective tax treaty which is distinguished in the short term, medium term and long term, as well as economic factors such as GDP per capita, trade openness, currency exchange rates, and population growth on the flow enter FDI in Indonesia.

2. Literature Review

2.1. Eclecthict Theory

Fachrulloh & Mawardi (2018) stated that in building an eclectic model, Dunning based his thoughts on three main concepts namely Ownership, Location, and Internalization (OLI). In this study, Eclectic Theory will be used as a basis for describing the factors that can influence the flow of FDI. OLI theory is an eclectic approach because this theory explains the reasons why a company chooses FDI among various other alternative choices. In addition, this theory explains why multinational companies choose one of several countries to be the location of investment and why some countries are more successful in attracting foreign capital.

2.2. Tax Treaty

In the context of FDI, the basic concept of a tax treaty is to create a certainty or commitment regarding the tax treatment given to investors. OECD (2008) also mentions that investors seek certainty, predictability, consistency, and timeliness in the application of tax rules.

2.3. Gross Domestic Productt (GDP) Per Capita

Given that GDP per capita is a potential market indicator for foreign investors, it should have a positive influence on FDI. Previous studies show different findings about the effect of market size which is proxied by GDP per capita on FDI inflows. The results of Tosompark & Daly (2012) show that there is a positive effect of GDP per capita on FDI inflows in Thailand in the period 1998-2008. It is in line with the findings of previous studies conducted by Chakrabarti (2001) and Changwatchai (2010). Meanwhile, the research results of Stein & Daude (2007) and Bhasin & Manocha (2016) show the negative influence of GDP per capita on FDI inflows.

2.4. Currency Exchange Rates

If FDI aims to serve the host country's market, then FDI and trade are substitute. In this case, the strengthening of the exchange rate of the host country attracts FDI because domestic consumer purchasing power is higher. It is different if FDI is intended for export purposes, then FDI and trade are complementary. In this case, strengthening the exchange rate of the host country will reduce FDI inflows because the competitiveness of the host company tends to be lower.

2.5. Trade Openness

The more open a country is in conducting trade with foreign countries, the more increase the opportunities of new investment opportunities and strengthen relations between national and international markets. In general, the impact of trade openness on FDI is closely related to the type of foreign investment undertaken. Multinational companies that are market seeking or horizontal FDI will be attracted by higher trade barriers, or in this case low trade openness. The reason is, based on the tariff-jumping hypothesis, FDI can avoid

foreign investors from the difficulty of importing goods when trade barriers are high. Conversely, export-oriented multinational companies or vertical FDI are more interested in investing in relatively open economic conditions because trade barriers can increase transaction costs. In addition, trade restrictions can also be linked to other forms of policy imperfection leading to a reduction in FDI inflows.

2.6. Population Growth

Dumairy (2006) stated that the population has two roles simultaneously in the economy. First, in the market context, the role of the population can be seen from the perspective of demand and supply. From a demand perspective, the population acts as a consumer so that it can be treated as a measure of market share. From a supply perspective, the population acts as a producer. Second, in the context of development, the role of the population is divided into two. Asongu (2013) explains that there are several stages to explain the relationship between population and FDI. First, a high population tends to have a relatively high level of consumption. Second, population growth affects the composition of total consumer demand, which is important as a signal of investment opportunities. The increasing population needs leads to relatively large commodity expenditures, where large capital expenditures are needed for production. Third, the effect of population growth on commodity demand will indirectly encourage the economy to look for investment funds. Other than that, population growth will have a direct effect on labor supply. Thus population growth is an important part of the broader investment phenomenon. The research model can be seen in Figure 1.

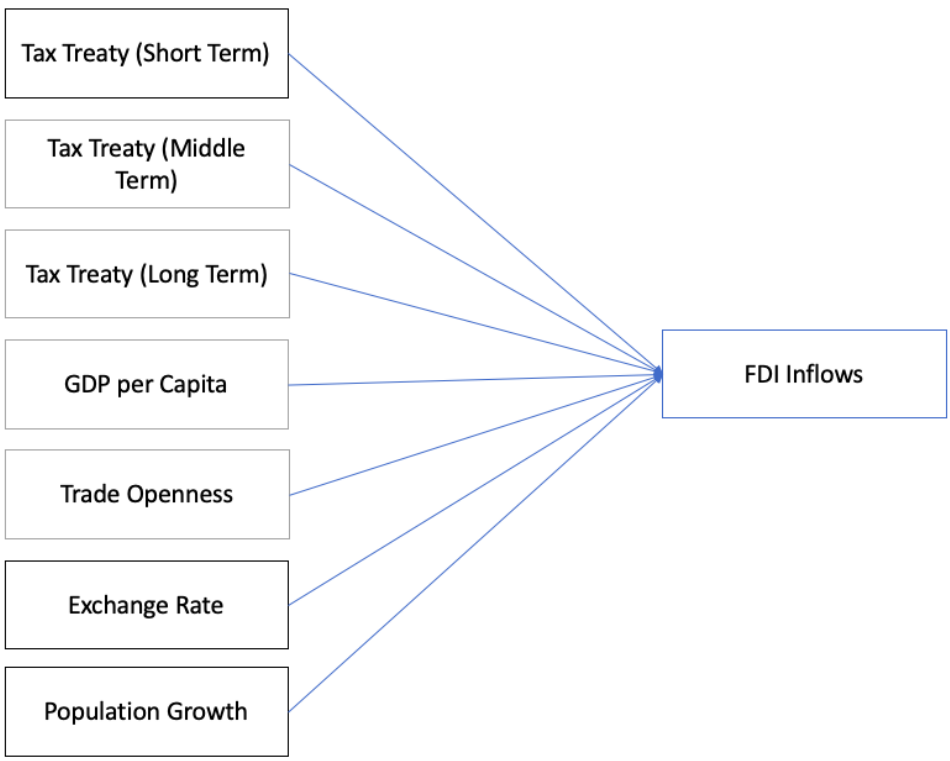

Figure 1. Research model

3. Method

3.1. Variable Measurement

1. Foreign direct investment (FDI) in Indonesia, reflecting the level of foreign direct investment in Indonesia originating from tax treaty partner countries
2. Agreement on Avoidance of Multiple Taxes (TT1, TT2, TT3): is a dummy variable used to find the effect of the time span of implementing tax treaty held by Indonesia with partner countries to increase the value of FDI inflows
3. Ratio of GDP per Capita Partner Countries to Indonesia's GDP per Capita: used to compare the level of economic prosperity between countries. This is also related to the size of the FDI market because this variable illustrates the purchasing power of a country's population.
4. Trade Openness of Partner Countries (TOPEN): quantification of trade restrictions, where the higher the level of trade openness, the lower trade barriers, and vice versa
5. Exchange Rates of Partner Country Countries (EXC): measured by their ability to exchange for United States dollars (USD).
6. Partner Country Population Growth (POPG): describes the growth in market size because the more the total population, the more the level of consumption of the population increases.

3.2. Population and Samples

The population of this study is all countries that hold tax treaty with Indonesia up to 2018. This study uses secondary data in the form of publication data available on several credible official websites and other information media. The data tested in this study were panel data combining time series data and cross sectional data. Time series data covers the period 1990 to 2018, while cross sectional data covers partner countries that hold tax treaty with Indonesia. To prove the research hypothesis, it is done through panel data regression test.

4. Result and Discussion

Based on the sample selection criteria, there are 19 countries that do not meet the data completeness requirements. Therefore 19 countries must be excluded so that the final sample of the study is 49 countries. The time span of the study was 29 years, or 1990 to 2018. Thus, the number of observations tested in the study was 1,421 observations. After going through the stages of descriptive statistical analysis of the research variables included in the test, then testing the model selection will be conducted which will be used for panel data regression analysis.

Panel data research has three regression models, namely Common Effect Model (CEM), Fixed Effect Model (FEM), and Random Effect Model (REM). From the three tests that have been done, the results of two regression model tests show that the Fixed Effect Model is more appropriate to be used in panel data regression in this study. Meanwhile, one other test shows that REM is the most appropriate model for panel data regression. FEM regression testing uses the Ordinary Least Square (OLS) approach in its estimation

technique, so there are several classical assumption tests that must be met. Based on the results of four classical assumption tests that have been carried out, it can be seen that this study experiences several problems that are not in accordance with the provisions of statistics. However, the results of the classic assumption test that do not meet the requirements of the Best Linear Unlimited Estimate (BLUE) assumption have been given certain treatments or treatments that are considered to meet the statistical rules according to experts. For this reason, research can then proceed to the panel data regression test stage.

To test the research hypothesis, the author has previously compiled a research model of the variables included in the study. After a regression analysis using the Fixed Effect Model with cross-section weights and white cross-section methods, the regression equation in this study can then be written as Eq.(1):

$$FDI_{ijt} = 9.384688 - 0.040896TT1 - 1.987326TT2 + 2.662356TT3 - 0.32371GDPPCR_{ijt} + 0.019177TOPEN_{it} - 0.004430EXC_{it} - 0.390566POPG_{it} + \varepsilon \quad (1)$$

Equation 1 shows that the regression coefficient of the long-term tax treaty variable (TT3) and the trade openness of partner countries (TOPEN) has a positive sign. This means that the functional relationship of the two independent variables is directly proportional to the coefficient of the dependent variable. In this study it can be interpreted that an increase (decrease) in long-term tax treaty variables and trade openness of partner countries will cause an increase (decrease) in FDI variables. Based on the regression equation above, it can also be seen that the tax treaty variables are short and medium term (TT1 and TT2), the ratio of GDP per capita of partner countries to Indonesia (GDPPCR), the exchange rates of partner countries (EXC), growth in partner country's population (POPG) has a negative coefficient, which means there is an inverse relationship between these variables with FDI.

The test results of the coefficient of determination generated from the selected regression model for this study are the Fixed Effect Model. The table shows that the value of R-squared and Adjusted R-squared are respectively 0.905875 and 0.902082. By using the coefficient of determination based on the Adjusted R-squared value, it can be concluded that as much as 90.20% of variations in FDI inflows in Indonesia can be explained by all the independent variables included in this study. Meanwhile, the remaining 9.80% variation in FDI inflows is explained by other factors outside the studied variables.Based on the regression results it is known that the probability value (F-statistic) is equal to 0.00 million, which is smaller than the significance level ($\alpha = 0.05$). Thus, it can be concluded that H1 is accepted, which means that all the independent variables in this research model jointly (simultaneously) affect the inflow of FDI in Indonesia.

Other regression results are known t statistic, using a significance level of 5%, it can be concluded that the independent variables in the form of tax treaty in the medium and long-term age range (TT2 and TT3), GDP ratio per capita of partner countries to Indonesia (GDPPCR), openness partner country trade (TOPEN), the exchange rate of partner country currencies against the USD (EXC), and partner country population growth (POPG) individually have a significant effect on FDI inflows in Indonesia (FDI). Meanwhile, the tax

treaty variable which has a short-term age range (TT1) has no effect on FDI inflows in Indonesia.

5. Conclusion

Indonesia's tax treaty and partner countries in the short term have no influence on FDI inflows in Indonesia. The announcement or news of the holding of a tax treaty did not affect the amount of FDI channeled by the tax treaty partner country to Indonesia in the year of the signing of the agreement. Whereas tax treaty Indonesia and its partners in the medium term have a negative influence on FDI inflows in Indonesia. Announcement or news of the holding of the tax treaty actually reduces FDI inflows into Indonesia in the period of one to four years since the signing of the agreement. Tax treaty can reduce investors 'interest to do FDI because the existence of tax treaty actually reduces investors' opportunities to avoid tax (tax avoidance). Indonesia's tax treaty and its partner countries in the long run have a positive influence on FDI inflows in Indonesia. In the long run, policy changes in the scope of taxation due to the holding of tax treaty can increase the amount of FDI that is channeled by tax treaty partner countries to Indonesia. The ratio of partner countries 'GDP per capita to Indonesia's GDP per capita, partner countries' exchange rates over the USD, and growth have a negative effect on FDI inflows in Indonesia.

The higher the GDP per capita of partner countries, the higher the purchasing power of the population. An increase in the level of purchasing power of the population, will result in increased demand for goods and services. Meanwhile, for the exchange rate to strengthen the exchange rates of partner countries against the USD, their ability to facilitate the procurement of raw materials in domestic production is greater, thereby reducing investor incentives to make FDI to Indonesia. The higher population growth rates of partner countries illustrate the growing size of the partner country's domestic market size, as well as the greater availability of labor supply needed for production in these partner countries. With these conditions, investors from partner countries will be more interested in making domestic investments rather than making FDI to Indonesia. On the other hand, trade openness of partner countries significantly influences the direction of a positive relationship to FDI inflows in Indonesia. The higher the level of trade openness of partner countries, means the lower barriers to trade in the country.

Authors' Declaration

Authors' contributions and responsibilities

The authors made substantial contributions to the conception and design of the study. The authors took responsibility for data analysis, interpretation and discussion of results. The authors read and approved the final manuscript.

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Availability of data and materials

All data are available from the authors.

Competing interests

The authors declare no competing interest.

Additional information

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