Determinants of foreign direct investment and its implications on tax revenue in Indonesia

Suparna Wijaya*, Ayu Kusuma Dewi
STAN Polytechnic of State Finance, Indonesia

ABSTRACT
This study aims to examine the effect of market size, trade openness, inflation rate, political stability, corruption, population, and status of human capital on tax revenue with Foreign Direct Investment (FDI) as an intervening variable. This research is quantitative research with a multiplier linear regression model. The sample used in this study includes the provinces in Indonesia. The sample was carried out from 2014 to 2019 using a purposive sampling method, resulting in 180 observations. The research model was tested using two-panel data regression models, namely FEM – GLS Heteros and Autoregressive and Random Effect models (REM). The results show that: 1) market size, trade openness, and the level of human capital have a positive effect on FDI inflows; 2) market size, trade openness, inflation rate, corruption level, population, human capital level, and Foreign Direct Investment (FDI) have a positive effect on tax revenue; and 3) market size, trade openness, and the level of human resources (human capital) have an indirect effect on tax revenue through Foreign Direct Investment (FDI).

Keyword:
Foreign direct investment, Trade (openness), Tax revenue, Population, Political stability, Inflation rate, Level of corruption, Level of human resources, Market size (market size).

© 2022 The Authors. Published by IICET. This is an open access article under the CC BY-NC-SA license (https://creativecommons.org/licenses/by-nc-sa/4.0)

Introduction
Taxes are people's contributions to the state treasury that can be forced (based on the law) without getting direct returns that it can use to finance general expenditures (Ismail et al., 2014). As a function of budget air, the composition of tax revenues always reaches more than 70% of the APBN portion. It is a milestone for state revenues to finance the APBN. The economic conditions significantly affect the amount of contribution and tax revenue realization. Wibowo (2018) determine the central factors of tax capacity depending on the level of development, trade, education, inflation, income distribution, corruption, and the ease of tax collection. In addition, Arifin (2021) mentions that structural factors such as GDP per capita, the share of agriculture in GDP, and trade openness are statistically significant and are strong determinants of income performance. GDP can measure a country's economic health, growth, and productivity and compare which countries are experiencing economic progress. The Official Statistics News (2020) explains that the Indonesian economy in 2020 experienced a growth contraction of 2.07% compared to 2019 (c-to-c). This figure is lower than in previous years due to the extraordinary APBN handling the COVID-19 pandemic in health, social, and national economic recovery.

The contraction of global economic growth in 2020 prompted countries to carry out various policies in their financial recovery. One of the stimuli that drive a country's economy, especially for developing countries, is Foreign Direct Investment (FDI). FDI is an investment made by an individual or company into a business
interest, thereby reducing technology gaps. In addition, FDI can also contribute to the GDP of the host country, increase per capita income, increase employment opportunities, and increase research and development (R&D). Therefore, many developing countries, including countries in Asia, are taking steps to increase FDI inflows.

Research conducted by Andrejovská & Pulíková (2018) measures the impact of macroeconomic indicators represented in GDP, employment level, public debt, FDI, effective tax rates, and tax rates on the total tax revenue, taking into account the tax competitiveness of 28 member countries. The analysis of this study confirms that the strongest correlation is between tax revenues and employment levels, followed by foreign direct investment and gross domestic product. Meanwhile, Castro & Camarillo (2014) analyzed the impact of economic, structural, institutional, and social factors on tax revenues in 34 countries. The study results indicate that per capita gross domestic product, industrial sector, and civil liberties positively affect the dependent variable, while the agricultural sector and the share of foreign direct investment in gross fixed capital formation have a negative impact. Various studies were conducted to examine the effect of FDI on tax revenues. IN HIS RESEARCH, Aslam AL (2015) concluded that FDI contributed 77% to tax revenue in Sri Lanka. In addition, Mahmood & Chaudhary (2019) found a long-term and short-term relationship between FDI and tax revenue.

Hoang's research (2012) shows that market size, the openness of the economy, quality of infrastructure, human resources, and labor productivity are the main factors that positively impact FDI inflows. In addition, exchange rate policies, actual interest rates, political risks, and institutional quality also affect FDI flows. However, cheap labor does not help attract FDI to the region, as foreign investors are very interested in labor productivity. In addition, Kumari & Sharma (2017) identify the main determinants of FDI inflows from 1990 to 2012 in twenty developing countries across South, East, and Southeast Asia. His research shows that market size, trade openness, interest rates, and human capital produce significant coefficients about FDI inflows. The findings also show that market size is the most important determinant of FDI inflows.

The difference between this study and previous research is that FDI is used as an intervening variable on tax revenue. Given the importance of FDI for development and current economic growth and the need to increase the realization of tax revenues, it is necessary to review FDI in Indonesia. Therefore, this study empirically proved the direct relationship between market size, trade openness, inflation rate, political stability, corruption level, population, human capital, and FDI level. The object of this study uses secondary data from the provinces in Indonesia in the period 2014 to 2019.

Tax Collection Theory: Purchasing Power Theory
Tax is one of the levies from the people for the state that it can force. In collecting taxes, there are several underlying theories. These theories are built as a justification for tax collection. Purchasing power theory describes people's ability when buying and selling. The sale and purchase transactions made will be subject to tax. Purchasing power theory explains that what is given to the state will eventually return to the community through other channels. So, the state only takes purchasing power from the district and then returns it to the community to improve welfare. In essence, taxes do not harm the community.

Classification of Determinants of Tax Revenue
Research conducted in taxation to determine the determinants of tax revenue is significant to see which variables influence and identify strategies to increase tax revenue or change its composition (Rodríguez, 2018). In addition, this is also an evaluation tool to collect taxes according to their tax capacity and make optimal tax efforts (Piancastelli & Thirlwall, 2019).

Gupta (2007) classifies tax determination into three classifications: structural, institutional, and taxation. Structurally it consists of GDP per capita, agriculture, imports, foreign aid, and foreign debt. Institutionally consists of political stability, economic stability, corruption, law and order, and government stability. Meanwhile, taxation consists of tax revenues from goods and services, income and capital gains, trade, exports, and the highest marginal tax rate. Meanwhile, Rodriguez (2018) divides the initial classification of tax determination into four classifications, namely structural determinants, political motivation, tax morale, and administrative constraints, as explained below:

Structural Factors
There is much literature that examines the structural factors of tax revenue. Taxation often depends on several variables, primarily historical and institutional issues (Castañeda-Rodriguez (2012) in Rodríguez (2018)), so countries with the same history will have similar characteristics. On the other hand, countries with different histories, institutional, and social characteristics will have different tax characteristics. The structural factors of tax revenue, according to Rodriguez (2018), consist of GDP growth, agriculture, the share of agriculture, total debt payments, financial intermediation, total trade, inflation, aid distribution, natural resources, population,

Journal homepage: https://jurnal.iicet.org/index.php/jppi
and democracy. Concerning this research, market size, trade openness, inflation rate, and population are included in the classification of structural factors.

**Political Motivation**
Swank & Steinmo (2002) explain that taxation's political economy can be characterized as an environment where policymakers face three obstacles: internationalization, domestic economic pressures, and budgetary requirements. Swank & Steinmo (2002) add that policymakers in contemporary political economies must face increasing pressure to reform tax policies for economic efficiency. According to Rodriguez (2018), political motivation consists of political ideology, executive elections, natural resources, and democracy. Government effectiveness and the strength and impartiality of the legal system affect taxpayers' perceptions of the fairness of the taxation system (Rodríguez, 2018). Concerning this research, political stability is included in the classification of structural factors.

**Tax Morale**
Tax morale measures taxpayers' perceptions and attitudes towards tax payments and avoidance (OECD, www.oecd.org, 2019). One of the biggest problems for policymakers in developing and transition economies is encouraging high levels of compliance (Cummings, Vazquez, McKee, & Torgler, 2009). Improving tax compliance and reducing tax evasion is not solely a matter of taking taxes out of overall GDP and is not simply a matter of imposing higher penalties. Designing effective policies to reduce tax avoidance requires understanding the behavioral aspects of tax compliance decisions (Cummings, Vazquez, McKee, & Torgler, 2009). According to Rodriguez (2018), tax morale consists of a population of 65 years, education, female workforce, government effectiveness, political stability, the rule of law, corruption, and democracy. Concerning this research, market size, trade openness, inflation rate, and population are included in the moral tax classification.

**Tax Administration Obstacles**
Administrative constraints can significantly weaken the structure of tax revenues with and pay attention to stabilization, efficiency, and equity objectives (Mansfield, 1988). Mansfield (1988) defines tax administration broadly as law, public administration, sociology, psychology, and economics. Administrators' relentless efforts to maximize tax revenue will be short-term but undermine voluntary compliance. The strategy that tax managers prefer is to support effective changes to the tax structure. The obstacles to tax administration, according to Rodriguez (2018), consisting of density, urban population, law, colonial heritage, corruption, and democracy. Concerning this research, the level of corruption and population are included in the classification of tax administration constraints.

**Internalization/Transaction Cost Theory**
Stephen Hymer is known as an international business expert for his contributions to foreign direct investment and theories of multinational corporations. Previously, all investments were only considered as cross-national movements of capital determined by inter-nation interest rates. Hymer determined that there were differences which were then concluded with Foreign Direct Investment: the latter gives the firm control over the business activities in other countries whereas portfolio investment does not. Hymer (1960) in Hennart (2009) explains that the internalization theory assumes that the market is imperfect. Hymer (1960) concluded that foreign direct investment could only be successful as long as market imperfections can create profit and conflict: firms can reduce their competition by adopting foreign direct investment.

**OLI Paradigm**
Hymer's theory (1960) has encouraged other economists to conduct research related to international business. Dunning (1980) introduced a new theory, namely the electric paradigm, or what is known as the OLI (framework Ownership, Location, and Internalization), which is the development of the internalization theory.

Ownership advantages, or ownership advantages, refer to competitive advantages. This advantage is a reason for multinational companies to make a foreign investment. These advantages include advantages in technology, economies of scale, and monopolistic advantages. Location advantages, or location, refer to the country's location where the multinational company will carry out the company's value-added activities. Location advantage can also be interpreted as the reason a multinational company chooses a country to carry out its activities by taking into account the country's economic, social/cultural, and political advantages. Internalization advantages, or internalization advantages, means that companies can regulate the creation and exploitation of their competencies. The greater the profit possible from internalization, the more likely the company is to make foreign production. Internalization advantages explain how firms enter international markets. With internalization, multinational companies fill imperfect or unavailable market conditions through vertical integration, horizontal integration, or conglomeration integration.
Market Size
The size of the market (market size) of the host country reflects economic conditions and the potential demand, an essential factor influencing the decision of foreign investors (Hoang, 2012). To measure this condition of economic growth, some researchers measure with indicators such as total GDP (e.g., Hoang (2012) or GDP per capita (e.g., Gupta (2007), Fenochietto & Pessino (2013), and Ghura (1998)). They are used together with GDP to measure the prosperity of a country through its economic growth. Besides being used to assess a country's prosperity, GDP per capita is also the primary measure of economic productivity. Economists also use GDP per capita to measure economic health. In addition, legislators also take advantage of GDP per capita to make economic policy. In this study, the market size is represented by the GDP per capita.

Disclosure of trade (trade Openness)
The economic level of national trade can be seen in comparing exports and imports as a percentage of Gross Domestic Product (GDP). The ratio of trading non-domestic to GDP is often used to measure international transactions to domestic transactions by looking at the extent to which non-domestic transactions (imports and exports) affect the size and growth of the national economy. Open trade provides many economic benefits, including technology transfer, increased workforce, increased productivity, and economic development. Trade liberalization countries experienced an average annual economic growth rate of about 1.5 percent higher than before liberalization, an increase in investment levels of 1.5 to two percent, and an increase in the average trade-to-GDP ratio of about five percent (Wacziarg & Welch, 2008).

Inflation Rate
Inflation is a decline in the value of money due to too much and a fast money supply causing an increase in the price of goods. The inflation rate reflects economic instability (Hoang, 2012). The literature on the impact of inflation on economic growth presents a different opinion. Several studies have shown that the inflation rate hurts economic growth (e.g., Kumari & Sharma (2017), Ghura (1998), and Fenochietto & Pessino (2013)). However, inflation negatively impacts growth only if it exceeds a certain threshold. Otherwise, inflation does not hurt growth but accelerates economic growth (Omankhanlen, 2011).

Political Stability
Political stability is an essential aspect of economic growth. Stable politics will encourage stable economic growth as well. The uncertainty of the political environment can reduce investment and the pace of economic development. Vice versa, economic stability also encourages the creation of political stability. Poor economic conditions can lead to political unrest and the collapse of the government. Dutt & Mitra (2008) created an alternative measure of political instability through the transition from dictatorship to democracy. His research shows that the democratic process is positively correlated with political instability. In addition, a range of trade and fiscal policies increased at the democratic level.

Level of Corruption
Corruption is generally defined as the misuse of state money for personal gain or others. By examining 46 countries in Asia-Pacific, Canare (2017) shows that corruption can generally reduce FDI inflows. Countries with low levels of corruption and countries implementing reforms and reducing corruption levels will receive more significant FDI inflows. Corruption tends to reduce FDI inflows for economic and ethical reasons because it will be an additional cost to investors, increase risk, and be challenging to manage.

Population
Malthus Malthus (1798) theory explains that humans will continue to grow until they are stopped by disaster, disease, war, famine, etc. In his theory, Malthus (1798) stated that the population would increase following a geometric progression (geometry), and the growth in food availability would follow an arithmetic progression (arithmetic). Furthermore, various supporting and disproving theories have emerged in the study of populations. Multinational companies can consider the large population of the destination country to make direct investments (Aziz & Makkawi, 2012). India and China are examples of countries that benefit from large populations. High populations in India and China spur large markets for multinational companies' products and services, large workforces, and high skills. Zhang & Markusen (1999) mention a need for local skilled workers, ranging from managers, technicians, engineers, accountants, and multinational companies. This could explain why there has been a significant investment boom in China compared to smaller countries with similar per capita income levels.

Level Human Resources (Human Capital)
To improve the environment for private sector development and sustainable economic growth, the government needs to play a supporting role by investing in human resources (human capital) (Ghura, 1998). There is a close relationship between human resources and economic growth. Human resources can be classified from work experience and skills, including the level of education, training, intelligence, skills, health, and so on, that
provide value and are valued by employers. The higher levels of human resources (education, skills, etc.) encourage increased productivity and profitability. The bigger the company invests in human resources (education, training, etc.), the more productive and profitable.

Previous Research
Several studies have been conducted to analyze tax revenue and FDI determinants. Gupta (2007) research contributes to the literature on the main determinants of tax revenue performance with 105 developing countries within 25 years. In this study, Gupta (2007) investigates the main factors of central government revenue (excluding grants). In addition, research conducted by Rodriguez (2018) also classifies the determinants of tax revenue into several classifications, namely structurally, politically motivated, tax morals, and tax administration constraints. Research on other determinants of tax revenue was conducted by Castro & Camarillo (2014). This study analyzes the impact of economic, structural, institutional, and social factors on tax revenues in 34 OECD countries from 2001 to 2011. A similar study was also conducted by Fenochietto & Pessino (2013). This study was conducted on 113 countries by researching GDP per capita, trade openness, The agricultural sector, public spending on education, income distribution, consumer price index, and corruption perception index. As Gupta (2007), Castro & Camarillo (2014), and Rodriguez (2018) did, this study examines the determinants of tax revenue from several different classifications adapted to the object of research, namely structural factors consisting of market size, trade (openness), and inflation; institutional factors consisting of political stability and the level of corruption; and social factors consisting of population and level of human resources (human capital).

Several studies use FDI and several other variables to examine tax revenue factors. Andrejovská & Pulíková (2018) measure the impact of GDP, employment levels, public debt, FDI, and tax rates on tax revenues from 28 European Union countries. In addition, a similar study was also conducted by Mahmood & Chaudhary (2019). This study was conducted to find the impact of FDI and GDP per capita on tax revenue in Pakistan. The research was also conducted by Aslam AL (2015) which examined the relationship between tax revenue and FDI in Sri Lanka from 1990 to 2013. The difference with research conducted by Andrejovská & Pulíková (2018), Mahmood & Chaudhary (2019), and Aslam AL (2015), namely in this study tested several factors that were selected together with FDI as an intervening variable on tax revenue. Therefore, it is necessary to know what factors can affect FDI inflows in advance.

Several main factors influence the inflow of FDI into a country. Research conducted by Hoang (2012) analyzed the factors that influence FDI inflows to countries in Southeast Asia from 1991 to 2009 using market size, openness, labor costs, human resources, productivity variables. Labor force, political stability, inflation rate, interest rate, financial development, infrastructure development, and exchange rate. Research to analyze the determinants of FDI was also carried out by Kumari & Sharma (2017) using a panel data collection in 20 developing countries in Asia from 1990 to 2012 by examining several factors such as market size, trade openness, infrastructure, inflation, interest rates, research and development, and human capital.

Research Framework and Hypotheses
Based on the theoretical basis and the results of previous studies, the proposed hypotheses are as follows:

$H_{1}, 2, 4, 6, 7$: MARSIZE, OPEN, POL, POP, HUMCAP have a positive effect on FDI inflows

$H_{3}, 5$: INF, KOR hurts FDI inflows

$H_{9}$: MARSIZE, OPEN, INF, POL, KOR, POP, HUMCAP simultaneously have a significant effect on FDI inflows

$H_{9, 10, 12, 14, 15}$: MARSIZE, OPEN, INF, POL, KOR, POP, HUMCAP positive effect on tax revenue

$H_{11, 13}$: INF, KOR negatively affects tax receipts

$H_{16}$: FDI inflows positive effect on tax revenues

$H_{17}$: MARSIZE, OPEN, INF, POL, KOR, POP, HUMCAP in Simultaneous significant effect on tax revenue

$H_{18}$: MARSIZE, OPEN, POP, HUMCAP indirect effect on tax revenue through FDI
Method

In this study, the research object takes the form of secondary data obtained from several data providers. The year of observation was from 2014 to 2019. The population of this study is 34 provinces in Indonesia. The sample used was purposive sampling, resulting in as many as 30 samples with 180 observations.

Dependent Variable (Bound)

\( \text{TAX}_t = \text{Natural logarithm (Ln) of revenue tax}_t \)

Independent Variable (Free)

\( \text{MARSIZE}_t = \text{Natural logarithm (Ln) GRDP per capita} \)

\( \text{OPEN}_t = \frac{\text{export}_t + \text{import}_t}{\text{GRDP}_t} \)

\( \text{INF}_t = \text{price index consumer}_t \)

\( \text{POL}_t = \text{democracy index Indonesian}_t \)

\( \text{KOR}_t = \text{number of crimes corruption}_t \)

\( \text{POP}_t = \text{Natural logarithm (Ln) of projected population}_t \)

\( \text{HUMCAP}_t = \text{development index human}_t \)

Intervening Variable (Mediation)

\( \text{FDI}_t = \text{Natural logarithm (Ln) of FDI realization} \)

To answer the entire purpose and scope of the research, it is done by regressing the two models. The research model can be described in the following equation:

\[
\begin{align*}
\text{FDI}_t &= \alpha + \beta_1 \text{MARSIZE}_t + \beta_2 \text{OPEN}_t + \beta_3 \text{INF}_t + \beta_4 \text{POL}_t + \beta_5 \text{KOR}_t + \beta_6 \text{POP}_t + \beta_7 \text{HUMCAP}_t + \varepsilon_t \\
\text{TAX}_t &= \beta_{15} \text{FDI}_t + \beta_{16} \text{MARSIZE}_t + \beta_{17} \text{OPEN}_t + \beta_{18} \text{INF}_t + \beta_{19} \text{POL}_t + \beta_{20} \text{KOR}_t + \beta_{21} \text{POP}_t + \beta_{22} \text{HUMCAP}_t + \varepsilon_t
\end{align*}
\]

Result and Discussion

Selection of Regression Model Estimation Panel Data

Regression Model 1

The test results Chow show the Prob > F value of 0.0000, and the test results Hausman show that the value Prob in the Chi-Square cross-section is 0.7268. Meanwhile, the test results Breusch-Pagan Lagrange Multiplier show the value of Prob > chibar2 of 0.0000. Thus, this study's better panel data regression model is the Random Effect Model (REM) or Generalized Least Square (GLS). Based on the test results, there are no multicollinearity problems, meet the expectations of non-autocorrelation, and usually have distributed data. Meanwhile, the non-heteroscedasticity test does not need to be carried out because it has used the REM regression model. Based on...
the classical assumption test results, the regression model assumptions obtained have met the BLUE (Best Linear Unbiased Estimate). Thus, regression model 1 in this study uses the REM model.

**Regression Model 2**

The test results Chow show the value of \( \text{Prob} > F \) of 0.0000. Meanwhile, the test results Hausman show that the value of \( \text{Prob} > \text{chi}^2 \) is 0.0160. Because the value of \( \text{Prob} > \text{chi}^2 \) is less than (0.05), the recommended model is Fixed Effect Model (FEM) or Least Square Dummy Variable (LSDV). From the test results, there is no multicollinearity problem. The results of the non-heteroscedasticity test show that the value of \( \text{Prob} > \text{chi}^2 \) is 0.0000, so it can be concluded that there is a heteroscedasticity problem in this study, or the variance of the residuals is not constant. So, to overcome the problem of violating these assumptions, an estimation of the model is carried out FEM using the GLS Weight or by weighing the residuals so that the variance will be constant. In addition, the \( \text{Prob} > F \) value in the non-autocorrelation test is 0.0000. This means an autocorrelation problem or a relationship between error and time. To overcome the problem of violating these assumptions, an estimation of the model is carried out FEM using GLS Weight and Autoregressive. Meanwhile, in the results in the normality test, the value of \( \text{Prob} > \text{chi}^2 \) is 0.0003, so that the assumption of normality is not met. However, because \( N \) has a large number (>30), according to the Central Limit Theorem (CLT), a large sample will follow a normal distribution (Ghozali, Multivariate Analysis with SPSS Program, 2005). This is also in line with Box (2012), which states that for large samples (> 20), the equation criteria tend to follow the normal theoretical distribution under non-normality conditions.

The four classical assumption tests were obtained, which stated that this research model had heteroscedasticity and autocorrelation problems. In order to fulfill the BLUE assumption, these problems must be treated. To handle the problem of heteroscedasticity and autocorrelation using the primary model regression with GLS. Thus, the research model can be homoscedastic, with no autocorrelation. Handling the fulfillment of this assumption is done by using the regression command of the fixed-effect model – generalized least square heteros and autoregressive in the STATA 14 application.

**The results of the Regression Panel Data Regression Test**

**Model 1**

<table>
<thead>
<tr>
<th>Variabel</th>
<th>Dugaan</th>
<th>Koefisien</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>MARSIZE</td>
<td>+</td>
<td>1.558541</td>
<td>4.09</td>
<td>0.0000 ***</td>
</tr>
<tr>
<td>OPEN</td>
<td>+</td>
<td>0.255106</td>
<td>0.64</td>
<td>0.2610</td>
</tr>
<tr>
<td>INF</td>
<td>-</td>
<td>0.008709</td>
<td>0.95</td>
<td>0.1715</td>
</tr>
<tr>
<td>POL</td>
<td>+</td>
<td>0.010538</td>
<td>0.74</td>
<td>0.2310</td>
</tr>
<tr>
<td>KOR</td>
<td>-</td>
<td>0.000978</td>
<td>-0.08</td>
<td>0.4665</td>
</tr>
<tr>
<td>POP</td>
<td>+</td>
<td>0.977088</td>
<td>5.54</td>
<td>0.0000 ***</td>
</tr>
<tr>
<td>HUMCAP</td>
<td>+</td>
<td>0.100460</td>
<td>-2.13</td>
<td>0.0165 **</td>
</tr>
<tr>
<td>C</td>
<td></td>
<td>0.2565736</td>
<td>0.07</td>
<td>0.4720</td>
</tr>
</tbody>
</table>

| R-Squared | 0.6732 |
| Adjusted R-Squared | 0.5810 |
| F-Statistic | 58.76 |
| Prob(F-Statistic) | 0.0000 |

Source: Processed from the STATA 14 application output

Based on table 1, the value of Adjusted R-Squared in this study is 0.5810. This means that the independent variable used in this research model can explain the variation of the FDI variable with a proportion of 58.10%. While other factors outside the research model explain the remaining 41.90%.
Regression Model 2

Table 2. Regression Test Results Model 2

<table>
<thead>
<tr>
<th>Variabel</th>
<th>Dugaan</th>
<th>Koefisien</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>FDI</td>
<td>+</td>
<td>0.049655</td>
<td>4.99</td>
<td>0.0000 ***</td>
</tr>
<tr>
<td>MARSIZE</td>
<td>+</td>
<td>0.832983</td>
<td>12.81</td>
<td>0.0000 ***</td>
</tr>
<tr>
<td>OPEN</td>
<td>+</td>
<td>0.132721</td>
<td>2.47</td>
<td>0.0655 **</td>
</tr>
<tr>
<td>INF</td>
<td>-</td>
<td>0.004414</td>
<td>3.03</td>
<td>0.0010 ***</td>
</tr>
<tr>
<td>POL</td>
<td>+</td>
<td>0.001082</td>
<td>-0.76</td>
<td>0.2245</td>
</tr>
<tr>
<td>KOR</td>
<td>-</td>
<td>0.004596</td>
<td>3.93</td>
<td>0.0000 ***</td>
</tr>
<tr>
<td>POP</td>
<td>+</td>
<td>1.011481</td>
<td>56.33</td>
<td>0.0000 ***</td>
</tr>
<tr>
<td>HUMCAP</td>
<td>+</td>
<td>0.012100</td>
<td>1.52</td>
<td>0.0645 *</td>
</tr>
<tr>
<td>C</td>
<td></td>
<td>9.910457</td>
<td>15.6</td>
<td>0.0000</td>
</tr>
</tbody>
</table>

R-Squared 0.92867
Adjusted R-Squared 0.92489
Prob(F-Statistic) 0.0000

Source: Processed from the output of the STATA application 14

Based on Table 2, the Adjusted R-Squared value is 0.92489. This means that the FDI variable and the independent variables used in this research model can explain the variation of the tax revenue variable with a proportion of 92.49%. While other factors outside the research model explain the remaining 7.51%.

Test Sobel Test

Test Sobel test was performed to test the significance of the mediating effect by looking at the indirect influence of the independent variables on the dependent variable. The results of these tests are presented in Table 3 below:

Table 3. Test Results Sobel Test

<table>
<thead>
<tr>
<th>Variabel</th>
<th><strong>a</strong></th>
<th><strong>b</strong></th>
<th>Sobel Test</th>
<th>Prob Sobel</th>
</tr>
</thead>
<tbody>
<tr>
<td>MARSIZE</td>
<td>4.09</td>
<td></td>
<td>3.163225</td>
<td>0.0016 ***</td>
</tr>
<tr>
<td>OPEN</td>
<td>0.64</td>
<td>4.99</td>
<td>0.634800</td>
<td>0.5256</td>
</tr>
<tr>
<td>INF</td>
<td>0.95</td>
<td></td>
<td>0.933238</td>
<td>0.3507</td>
</tr>
<tr>
<td>POL</td>
<td>0.74</td>
<td></td>
<td>0.731995</td>
<td>0.4642</td>
</tr>
<tr>
<td>KOR</td>
<td>-0.08</td>
<td></td>
<td>0.079990</td>
<td>0.9362</td>
</tr>
<tr>
<td>POP</td>
<td>5.54</td>
<td></td>
<td>3.707706</td>
<td>0.0002 ***</td>
</tr>
<tr>
<td>HUMCAP</td>
<td>-2.13</td>
<td></td>
<td>1.958995</td>
<td>0.0501 *</td>
</tr>
</tbody>
</table>

Source: Adapted by the author's

Market size is a strong indicator for assessing the region's economic performance. From the research results, MARSIZE, which is proxied by GRDP per capita, has a coefficient of 1.558541. Meanwhile, the p-value is 0.0000, which has a very significant effect. This phenomenon follows research conducted by Hoang (2012), Zaman, Donghui, Yasin, Zaman, & Imran (2018); Chakrabarti (2001), Kumari & Sharma (2017). In these studies, the most substantial economic factor is market size. Jessica Talenta (2018) explain that a large market is needed to utilize and exploit economies of scale efficiently.

Meanwhile, efficiency and economic exploitation are the main essences of multinational companies to conduct FDI. Mardia et al. (2021) identified four types of multinational activities, namely natural resource seekers, market seekers, efficiency seekers, and strategic asset or capability access. Market-seeking investments can be made to maintain an existing market or exploit or promote a new market. On the other hand, efficiency-seeking investments are motivated to rationalize the structure of resource-based investments or markets so that investment firms can benefit from the general governance of geographically dispersed activities.

Trade openness describes the magnitude of the influence of international trade (export-import) in the economic growth of a region. Hoang (2012) explains that trade openness refers to the economic relationship in the host country with the world economy. In general, greater openness in trade provides new investment opportunities. It strengthens domestic and international markets (Tintin, 2013 in Kumari & Sharma (2017)). Previous studies such as those conducted by Hoang (2012) and Zaman, Donghui, Yasin, Zaman, & Imran (2018) showed a significant effect on the level of trade (openness) on Foreign Direct Investment (FDI). In this study, OPEN has a coefficient of 0.2551059 and a p-value of 0.261, so that trade openness (openness) did not affect...
FDI. This finding is in line with the research conducted by Kumari & Sharma (2017). In his research, Kumari (2017) found a positive relationship between trade openness and FDI inflows, but not significant.

Nevertheless, the findings still support the theory of FDI that the level of trade openness (openness) represents the ease of the host country to be accessible to the world market for investment purposes. Meanwhile, research on the level of trade openness on FDI inflows in Indonesia has been carried out by Grace (2019). In her research, Grace (2019) examines the ASEAN-9 and ASEAN-7 data groups from 2009 to 2017. As a result, the level of openness has a significant positive effect on FDI in ASEAN-9. However, it has an insignificant positive effect on FDI in ASEAN-7. The results in this study, although not significant, are consistent with other studies which show a positive relationship between trade openness and FDI inflows (Hoang, 2012), (Kumari & Sharma, 2017), (Belloumi, 2014), (Grace, 2019).

A low inflation rate represents good economic growth and a strong economy. Research conducted by Kumari & Sharma (2017), Valli & Masih (2014), Anwar, Kuswantoro, & Dewi (2016), and Schneider & Frey (1985) reveal that the inflation rate can reduce FDI inflows. The p-value of INF is 0.1715 with a coefficient of 0.0087091, so the inflation rate does not affect FDI. The results of this study are in line with the research of Alshamsi, Hussin, & Azam (2015), where the research results indicate that the inflation rate does not affect FDI inflows in the economy of the United Arab Emirates. Another study that explains the insignificant relationship between the two variables is Oman Khan Len (2011). In addition, Egbo, Onwumere, & Okpara (2011) stated in their research that there is no relationship between the inflation rate and FDI inflows. Omankhanlen (2011) states that inflation hurts growth only if it exceeds a certain threshold. Otherwise, inflation does not adversely affect growth or accelerate growth. Thus, Alshamsi, Hussin, & Azam (2015) explain that inflation can positively impact FDI if it does not exceed a certain threshold. In this context, Khan & Senhadji (2001) conducted a study and stated that the inflation threshold level at which inflation slows growth significantly is estimated at 1-3% for industrialized countries and 11-12% for developing countries. Looking at the inflation rate in this study, the average ranged from 3.2% to 4.8% and did not fluctuate disturbingly. This may be why the inflation rate does not hurt FDI in this study.

The level of democracy describes political stability in this study with the Indonesian Democracy Index (IDI) as a proxy. The IDI has three aspects: civil liberties, political rights, and democratic institutions. Research conducted by Busse (2003) shows that investment by multinational companies is significantly higher in democratic countries. In addition, Uddin, Chowdhury, Zafar, Shafique, & Liu (2019) say that democracy positively influences FDI inflows in the short term. The POL coefficient value is 0.01058 with a p-value of 0.231, so it can be concluded that political stability does not affect FDI. This result is in line with the research conducted by Septiantoro, Hasanah, Alexandi, & Nugraheni (2020), which explains that the indicators of democracy and the quality of institutions on FDI do not have a significant effect due to the effect crowding out of democratic institutions.

Meanwhile, in a study conducted by Matthias (2003), the results of panel data analysis in four-time intervals showed that the variables of democracy described through political rights and civil liberties showed a negative and insignificant direction. However, the analysis results in three-four time intervals show a significant effect. In this study, the reason for the insignificant effect of political stability on FDI has several possibilities, including multinational companies, which are indifferent to civil liberties, political rights, and democratic institutions in Indonesia in the period 2014 to 2009 (Matthias, 2003). In addition, although political and democratic rights influence the investment decisions of multinational companies positively in the short term (three to four periods), then negatively in the long term (from period four to the end of the observation period) (Uddin, Chowdhury, Zafar, Shafique, & Liu, 2019) so that different time intervals in the study will give different research results. The proxy for political stability also has various variants in previous studies. For example, although it is the same as a proxy for the democracy index, the research conducted by Uddin, Chowdhury, Zafar, Shafique, & Liu (2019) breaks down between the variables of rights. Politics has a significant negative effect, civil liberties have no significant effect, and democratic government has a significant effect. Meanwhile, in this study, the proxy used is the Indonesian democracy index, which has all three aspects, producing different research results. Although the results of the study show that there is no influence between political stability on FDI inflows, political stability has a positive relationship, as stated by several previous studies (Haksoon, 2010; Busse (2003); and Uddin, Chowdhury, Zafar, Shafique, & Liu (2019)).

This study's corruption level uses a proxy for the number of corruption crimes in each province handled by the KPK. In general, corruption reduces FDI inflows. Countries with low levels of corruption generally receive more FDI inflows (Canare, 2017). value of One-tailed Prob. (p-value) the variable level of corruption is 0.4665 with a coefficient of 0.0009776. The resulting probability shows an insignificant result. The resulting coefficient shows a positive relationship in contrast to the proposed hypothesis. The positive relationship between corruption and FDI inflows is in line with research conducted by Hoang (2012). While it is generally accepted
that corruption limits growth, there is an argument that corruption can help promote development by addressing inefficiencies in the bureaucracy (Huntington, 1968; Leff, 1964; Leys, 1965 in Canare (2017)). In other words, a certain amount of corruption can increase FDI inflows. To explain the results of this study, Canare (2017) said that although, in general, corruption can reduce FDI inflows, when he separates it from "countries the countries. low- and middle-income," results show that there is no significant relationship between the two that variable. This may be why the level of corruption does not affect FDI inflows in Indonesia, a developing country. In addition, the data obtained from only one source, namely the KPK, allows for lack of representation of the level of corruption in this study.

A large population will encourage a larger market offered by multinational companies. Multinational companies may consider a country's population to invest in (Aziz & Makkawi, 2012). The results of this study indicate that there is a very significant positive influence between the population on FDI inflows. The results of this study are in line with previous studies (Aziz & Makkawi (2012); Mitra & Abedin (2020); and Akin (2009)). The high population will spur a large market for goods and services that multinational companies can offer and the availability of a large number of workers and skills. This follows the theory presented by Dunning & Lundan (2008) regarding market-seeking investment and efficiency-seeking investment in determining the location factor for foreign direct investment.

The level of human capital in the host country can influence the geographic distribution of FDI and be a significant and most important determinant of FDI, increasing in importance over time (Noorbakhsh, Paloni, & Youssef, 2001). The value of the variable coefficient of the level of human resources (human capital) is 0.1004601, and the value of one-tailed Prob. (p-value) is 0.0165, so the level of human resources (human capital) has a significant effect. The results of this study are in line with research conducted by Noorbakhsh, Paloni, & Youssef (2001) and Karimi, Yusop, Hook, & Chin (2013). A good level of human capital will encourage a qualified workforce to increase company efficiency. Dunning (1998) in Noorbakhsh, Paloni, & Youssef (2001) states that the skills and education level of the workforce can affect both the volume of FDI inflows and the activities of multinational companies to be carried out.

The market size is the main indicator of a region's economic growth. The gross domestic income per capita is a strong and significant factor in revenue performance (Gupta, 2007). Variable size of the market has a coefficient of 0.8329827 and one-tailed Prob. (p-value) of 0.0000, so it can be concluded that market size significantly affects tax revenue. The results of this study are in line with previous studies, which generally state that market size, which GRDP per capita measures, affects tax revenue. The studies that are in line with the results of this study include the research conducted by Fenochietto & Pessino (2013); Gupta (2007); Ghura (1998); Castro & Camarillo (2014); Andrejovska & Puliková (2018); Rodriguez (2018); and Imam & Jacobs (2007). This study indicates that when the market gets bigger, the income will increase so that tax revenue will also increase. High levels of economic growth support the capacity of the state to collect taxes and are associated with a large tax base (Besley and Persson (2009) and Muibi and Sinbo (2013) in Rodriguez (2018)).

The openness of trade has a significant effect on tax revenue (Fenochietto & Pessino (2013); Ghura (1998); Castro & Camarillo (2014) variable of trade (openness) has a coefficient of 0.1327213 and a value of one-tailed Prob. (p-value) of 0.0065 so that trade openness has a very significant effect on tax revenue. The results of this study are in line with research conducted by (Castro & Camarillo (2014); Piancastelli & Thirlwall (2019); Fenochietto & Pessino (2013); Gupta, (2007), and Ghura (1998). Trade (trade openness) describes the level of ease of a region to conduct international addition, trade (openness) implies the need to replace external taxes (e.g., tariffs taxes) against internal taxes and easy to collect, especially VAT, due to the relatively low administrative costs (Muibi and Sinbo (2013) and Ghura (20 02) in Rodriguez (2018). The effect of trade openness on tax revenue indicates that import and export activities will increase tax revenue.

Inflation is a decrease in a currency that triggers an increase in the price of goods and services. Fenochietto & Pessino (2013), in their research, shows that there is a negative relationship between inflation and tax revenue. Namely, countries with low inflation rates have a more optimal tax capacity. In addition, Simiyu, Ruto, Byaruhanga, & Nalyanya (2020) explain that the inflation rate hurts tax revenue. From the results of this study, information was obtained that the probability of the inflation rate variable has a very significant value on tax revenue. However, the coefficient shown shows a positive direction, so that in this study rejects the initial hypothesis. The results of this study indicate that inflation has a positive effect on tax revenue. The results of this study are in line with (Imam & Jacobs, 2007), which states:

"That real tax proceeds are eroded during periods of higher inflation (the Tanzi effect) is in most cases not apparent; on most taxes collected, any inflation impact is likely to be positive. This could be because the countries in our sample have relatively stable economies."

Journal homepage: https://jurnal.iicet.org/index.php/jppi
The results of this study are also in line with research conducted by Baum, Gupta, Kimani, & Jules (2017), which presents that inflation, if not anticipated, increases tax revenues to have a positive impact tax-to-GDP ratio. This result is also in line with the research in Indonesia conducted by Wahyudi, Sanim, Siregar, & Nuryartono (2009), which presents the results of the effect of inflation as one of the constituents of the Tax Early Warning System (TEWS) on tax revenues depicting a significant positive value. Omankhanlen (2011) explained that inflation hurts economic growth only if it exceeds a certain threshold. Otherwise, inflation does not adversely affect growth or accelerate growth. Khan & Senhadji (2001) stated that the inflation threshold level at which inflation slows growth significantly is estimated at 11-12 percent for developing countries. From the results of descriptive statistics in this study, the inflation rate ranged from 3.24 to 4.31, which means it is still within the threshold stated by Khan and Senhadji (2001). Inflation value below this threshold is possible that the inflation rate variable positively affects tax revenue. When the price of goods or services rises but is still within a controllable threshold, it will increase the gross amount and tax revenue.

Democracy has a positive relationship to tax revenue in developed countries, supporting the compatibility perspective that democracy produces growth produces economic growth (Rashid, Warsame, & Khan, 2020). Meanwhile, democracy is needed in developing countries. The owned natural resources can contribute to tax revenues and not become a barrier to a sustainable tax system (Ehrhart, 2011). The coefficient value of the political stability variable as proxied by the Indonesian democracy index is 0.0010818 while the one-tailed Prob value (p-value) is 0.2245, so political stability does not affect tax revenue in this study. Mutascu, Tiwari, & Estrada (2011) stated that political stability is not the key to tax policy. Political stability has a weak effect on income for low- and middle-income countries (Gupta, 2007). In addition, Profeta, Puglisi, & Scabrosetti (2013) research shows the lack of a significant and strong relationship between the level of protection of civil and political rights with the level and structure of taxation. Profeta, Puglisi, & Scabrosetti (2013) stated that this is probably due to the lack of variation in the observed variables due to the shorter period than the previous literature. The lack of a significant correlation between democracy and taxes is also conveyed by Mulligan, Gil, & Salai Martin (2014). Although it has no effect, the results of the coefficients in this study indicate that there is a positive relationship between political stability and tax revenue as described in previous literature such as (Shabbir, Anwar, & Adil (2016); Ehrhart (2011); and Rashid, Warsame, & Khan (2020)).

Corruption has a bad impact on tax revenue (Ajaz & Ahmad, 2010). The level of corruption is important for the ratio of tax revenues because it will reduce the ratio (Ghura, 1998). In general, the level of corruption shows a significant negative result on tax revenue (e.g., Gupta (2007) and Fenochietto & Pessino (2013)). Value of One-tailed probe. (p-value) is 0.0000 with a coefficient value of 0.0045964. The probability results in this study show a very significant value. However, they have the opposite direction to the initial hypothesis, so that the initial hypothesis is rejected. The results in this study indicate that corruption has a positive effect on tax revenue. In this study, the level of corruption is measured by the corruption crimes encountered by the Corruption Eradication Commission (KPK). Whereas, in previous research (Ghura, 1998), the effect of corruption, which is usually defined as the abuse of public power for private gain, is captured by an index that measures the extent to which bribes are generally expected by government officials concerning, among other things, tax assessments, trade permits.

Meanwhile, this study does not present the corruption index in each province. Different proxies or corruption data other than the KPK might lead to different results in this study. In addition, the results of this study are in line with the research of Imam & Jacobs (2007), which states:

"Corruption does not have a statistically significant impact on total tax revenues in the Middle East. This is not surprising (see Section II). There are several determinants of corruption, which might affect the collection of diverse taxes differently. We did not necessarily expect that by lumping all tax revenues together we would find a positive relation between corruption and tax revenues. The real effect of corruption should be looked at by analyzing individual taxes instead.

In addition to these reasons, the possible reason that corruption increases the economic capacity of the perpetrators as described in the definition of income in the Income Tax Law, then the economic capacity will contribute and increase tax revenues.

Population demographics are related to economic growth and changes in state income. Total tax revenues will increase as the overall population grows in most countries (Goudswaard & van de Kar, 1994). The value of the population variable coefficient on tax revenue is 1.011481 with a one-tailed Prob value (p-value) of 0.0000, so that it has a very significant positive effect on tax revenue. The results of this study are in line with research conducted by Goudswaard & van de Kar (1994); Calahorrano, Rebeccigan, Stöwhase, & Teuber (2019), Felix & Watkins (2013). Felix & Watkins (2013) explained that total tax revenue is likely to increase with total population growth, assuming all other factors are constant. In addition, tax revenues will increase along with

Journal homepage: https://jurnal.iicet.org/index.php/jppi
population growth and the relatively older workforce (Goudswaard & van de Kar, 1994). This research is also in line with Effendi, Hidayat, & Nurwanda (2019) research in Indonesia, which examined the correlation between demography and the state budget, particularly tax revenue. His research states that the demographic bonus will be beneficial because the proportion of working-age supports GDP growth per capita. However, demographic problems will drag the economy down after the bonus era. Calahorrano, Rebeggiani, Stöwhase, & Teuber (2019) also stated that population aging increases the impact on income decline.

An increase in the level of human resources is a measure of the level of public services provided by the government—is associated with an increase in tax revenues (Ghura, 1998). The coefficient value of the variable level of human resources (human capital) on tax revenue is 0.0121, while the value of One-tailed Prob. (p-value) is 0.0645, so it has a significant positive effect on tax revenue. This research is in line with the research conducted by Ghura (1998). When taxpayers see the benefits of paying taxes they make in providing government public services, as measured by increasing human resources, their willingness to pay taxes is expected to increase (Ghura, 1998). In terms of education level, which is one aspect of the human development index, more educated people can understand how and why it is necessary to pay taxes (Fenochietto & Pessino, 2013). In addition, education level can affect tax revenue because the cross-sectoral relationship between education level is positively related to tax morale were highly educated people more easily recognize the importance of government intervention, or because they usually get higher wages which can affect tax revenue, for example from income or property taxes (Rodríguez, 2018).

Foreign Direct Investment (FDI) is a source of financing (capital). It is an important part of international trade and its global economy. FDI is suspected of providing economic growth both in origin and the host country. Several previous studies have stated that FDI has a significant effect on tax revenue (Mahmood & Chaudhary, 2019); Aslam AL (2015); Andrejovská & Puliková (2018); and Pay (2018). One-tailed Prob. value (p-value) on the variable Foreign Direct Investment (FDI) on tax revenue has a value of 0.0000 with a coefficient value of 0.0496554. This probability value indicates that the Foreign Direct Investment (FDI) variable has a very significant effect on the tax revenue variable and is positive. The results of this study are in line with research conducted by Aslam AL (2015) in Sri Lanka and Mahmood & Chaudhary (2019) in Pakistan. These two studies explain that FDI has a significant relationship to tax revenues and provides a welfare effect. The results of this study are also in line with previous research conducted in Indonesia by Pratomo (2020), where FDI has a positive effect on total tax revenue.

From the results of the Sobel test, it can be concluded that market size, population, and human capital have an indirect effect on tax revenue through FDI. Meanwhile, the variables of trade (openness), inflation rate, political stability, and corruption have no indirect effect on tax revenue through FDI. In general, economic growth positively affects the FDI and income levels, so more significant economic activity will help the government generate more indirect taxes (Mahmood & Chaudhary, 2019). The market (market size), population, and the level of human resources (human capital) generally positively influence FDI inflows. In this case, FDI inflows can positively affect the total tax by encouraging influencing factors Grop and Costial (2000) in Bayar (2018). FDI inflows can affect tax revenues by optimizing market size, population and the level of (human capital) presence of foreign direct investment will affect the existence of employees, development, payment of services, payments abroad, sales, and other transactions. The domino effect of various types of potential taxes in these transactions (e.g., PPh article 21, final PPh, PPh article 23, PPh article 26, and VAT) will have an indirect effect.

**Conclusion**

The market size (market size) positively impacted FDI inflows. Regions with larger market sizes or per capita incomes have a more significant potential for inflows. This study's trade openness (openness) did not affect Foreign Direct Investment (FDI). Although not significant, the results are consistent with other studies which show a positive relationship between trade openness and FDI inflows, representing the ease with which world markets can access the host country for investment purposes. The inflation rate does not affect Foreign Direct Investment (FDI). This is probably because the inflation rate does not exceed a certain threshold. Political stability does not affect Foreign Direct Investment (FDI). Possibly, multinational companies are indifferent to civil liberties, political rights, and democratic institutions in Indonesia from 2014 to 2009. In addition, the proxy for political stability also has various variants in previous studies. Although the study results show no effect of political stability on FDI inflows, it has a positive relationship, as stated by several previous studies. The level of corruption does not affect FDI inflows. Possibly, the level of corruption does not affect FDI inflows in Indonesia, which is a developing country. In addition, the data obtained from only one source, namely the KPK, allows for lack of representation of the level of corruption in this study. The population has a positive effect on FDI inflows. The high population will spur a large market for goods and services that multinational companies

Journal homepage: https://jurnal.iicet.org/index.php/jppi
can offer and the availability of a large number of workers and skills. The level of human capital has a positive effect on FDI inflows. A good level of human capital will encourage a qualified workforce to increase company efficiency. Market size, trade (openness), inflation rate, political stability, level of corruption, population, and level of human resources (human capital) simultaneously affect Foreign Direct Investment (FDI). Market size has a positive effect on tax revenue. The income will increase when the market gets bigger, so the tax revenue will also increase. The inflation rate has a very significant value on tax revenue. However, the coefficient shown shows a positive direction opposite to the initial hypothesis, so the initial hypothesis is rejected and gives new results. Inflation value below the threshold and is stable is one possibility that has a positive relationship to tax revenue. When the price of goods or services rises but is still within a controllable threshold, it will increase the gross amount and tax revenue. Political stability does not affect tax revenue. This is probably due to the lack of observed variables over a shorter period than the previous literature. Although it has no effect, the results of the coefficients in this study indicate a positive relationship between political stability and tax revenue as described in previous literature. The level of corruption has a positive effect on tax revenue. The probability results in this study do show a very significant value. However, they have the opposite direction to the initial hypothesis. The initial hypothesis is rejected and produces new results. In this study, the level of corruption is measured by the corruption crimes encountered by the Corruption Eradication Commission (KPK). Different proxies or corruption data other than the KPK may result in different results in this study from the previous literature.

References


Journal homepage: https://jurnal.iicet.org/index.php/jppi


Determinants of foreign direct investment and its implications on …


Journal homepage: https://jurnal.iicet.org/index.php/jppi