

Analysis of The Influence of Per Capita Income, Agriculture, Industry, Foreign Direct Investment, Human Development Index, and Corruption on Tax Revenue in Indonesia: A Case Study at The Regional Office of The Directorate General of Taxes With Working Area of One Province

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Abstract. Tax revenue is the main source of state revenue in Indonesia. Indonesia's tax revenue in terms of tax ratio is still not optimal when compared to Southeast Asian countries and other countries in general. This study aims to examine the effect of per capita income, agriculture, industry, foreign direct investment, human development index, and corruption on tax revenue at the Regional Office of the Directorate General of Taxes. The selection of research objects was carried out using purposive sampling technique and 100 observations were obtained. This study uses quantitative methods with panel data regression with the Correlated Panels Corrected Standard Errors regression model. The results showed that per capita income, industry, foreign direct investment, human development index has a positive effect on tax revenue. Agriculture and corruption has no effect on tax revenue.

Keywords: per capita income, agriculture, industry, foreign direct investment, human development index, corruption, tax revenue

1. Introduction

Background

Tax revenue is one source of funds used by the government to carry out government activities and meet public needs. During 2018 to 2022, taxation consistently supported more than three-quarters of total state revenue. So tax revenues become very important in running the government. Even though tax revenue is the backbone of state revenue, tax revenue in Indonesia is still not optimal. One of them is if tax revenue in Indonesia is compared with other countries when viewed from the tax ratio or tax revenue ratio. The tax revenue ratio is a comparison of tax revenue with gross domestic product. Based on World Bank data (2023), the average tax

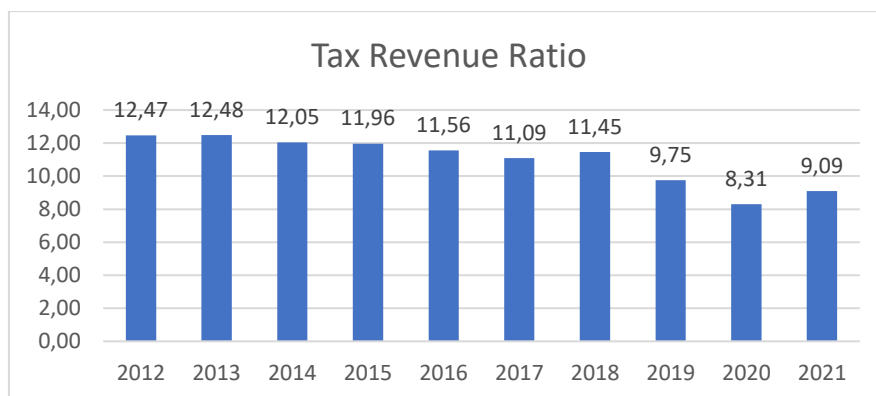
revenue ratio for countries in the world in 2021 is 14.4%. In the Southeast Asia region, the average tax revenue ratio in 2021 is 13.05% as attached in Table 1.

Table 1: Average Tax Revenue Ratio in ASEAN Countries (in%)

Year	Indonesi a	Cambodi a	Malaysi a	Philippine s	Singapor e	Thailan d	Averag e
2017	9.88	15.79	12.95	13.59	13.99	14.78	13.50
2018	10.23	17.05	12.02	14.05	13.01	14.91	13.55
2019	9.75	19.73	11.94	14.49	13.15	14.66	13.95
2020	8.31	17.89	10.89	13.95	12.77	14.46	13.04
2021	9.09	16.36	11.24	14.13	13.12	14.32	13.05

Notes: World Bank Source, processed by the Author

Based on tax revenue ratio data in ASEAN countries available in World Bank data in Table 1, Indonesia is the country that has the lowest tax revenue ratio. This low tax revenue ratio indicates that Indonesia is still not optimal in terms of tax revenue compared to other ASEAN countries. In terms of trends in the tax revenue ratio, Indonesia is experiencing a relatively downward trend based on World Bank tax ratio data (2023) in Figure 1. Indonesia's tax revenue ratio is still far from the optimal tax revenue ratio according to Junquera-Varela & Haven (2018), which is at least 15%. So Indonesia still needs to increase the tax revenue ratio to increase the value of Indonesian tax revenue in general.



Notes: World Bank Source, processed by the Author

Figure 1. Indonesian Tax Revenue Ratio 2012-2021

To determine the right steps to increase Indonesian state revenues, it is necessary to know the factors that influence tax revenues in Indonesia. On the other hand, there is still limited research on tax revenues in Indonesia that uses economic and non-economic factors simultaneously. Apart from that, there is still limited research examining non-economic factors such as HDI and corruption in Indonesia. Apart from that, there was emotion from the data used in the research. So this research can provide interesting and useful new insights, especially regarding its application in Indonesia. Based on the background explained previously, the author is interested in further research with the title "Analysis of the Influence of Per Capita Income, Agriculture,

Industry, Foreign Direct Investment, Human Development Index, and Corruption on Tax Revenue in Indonesia: Case Study at the Regional Office of the Directorate General of Taxes with One Province Working Area”.

Research purposes

Based on the description of the background and scope of the problem, the formulation of the problem discussed in this research is:

1. Does per capita income have an effect on tax revenue?
2. Does agriculture have an effect on tax revenues?
3. Does industry influence tax revenues?
4. Does FDI affect tax revenues?
5. Does HDI have an effect on tax revenues?
6. Does corruption affect tax revenues?

Based on the problem formulation, the objectives of this research can be described as follows:

1. Analyzing the effect of per capita income on tax revenue?
2. Analyze the influence of agriculture on tax revenues?
3. Analyzing the influence of industry on tax revenues?
4. Analyzing the effect of FDI on tax revenue?
5. Analyzing the effect of HDI on tax revenues?
6. Analyze the effect of corruption on tax revenues?
7. Analyze the influence of per capita income, agriculture, industry, FDI, HDI and corruption simultaneously on tax revenues?

2. Literature Review

According to Caroko et al., (2015), taxes are contributions made by the people to the state without any direct reward, and the government can force tax collection for state needs. The function of tax collection can be divided into budgetary and regular functions. The budgetary function explains that taxes act as a means of collecting funds from the public for state expenditure purposes. In writing Adiasa (2013), taxes are the main source of state income used to fund government spending and development. Meanwhile, the regular function refers to the role of taxes in regulating wealth between economic actors and people's income. Apart from that, taxes also play a role in the redistribution of people's income. According to Biswan (2022), taxes are also used by the government to improve the income gap between rich groups and groups of people who are considered less well off.

Gupta (2007), in his research grouped the factors that influence tax revenues into structural, institutional and policy variables. Structural variables can be income per capita, the share of the agricultural sector in Gross Domestic Product (GDP), and the ratio of imports in GDP; institutional variables can be government stability, corruption, political stability and economic stability; and policy variables can be tax rates and the percentage of each tax in total tax revenue. Whereas Rodriguez (2018), divides the factors that influence tax revenues into structural factors, political motivation, tax morale and tax administration constraints. Structural factors consist of economic growth, agriculture share, total debt service, financial intermediation, total trade, inflation, aid share, natural resources, and population. Other factors that influence tax revenues according to Ha et al. (2022), are foreign direct investment (FDI),

debt to GDP ratio, share of the industrial sector in GDP and official development assistance. Next according to Ghura (1998), factors that influence tax revenues can be: per capita income, share of the agricultural sector in GDP, trade openness, availability of oil and non-oil extraction sectors, structural reform, HDI, inflation and corruption.

Per capita income can be interpreted as the total income of a country divided by the population. Per capita income can describe the income earned by each resident in a particular country or region in general. The agricultural sector is one of the important sectors in the economy of some countries. One of the reasons is that the agricultural sector can provide many jobs and as a source of food as the world population increases (Ha et al., 2022). Industry plays an important role in a country's economy. In the theory of economic structural change by Arthur Lewis in Todaro & Smith (2009), explains that the transformation of economic structure will ultimately result in the contribution of the economic sector being outweighed by the contribution of the industrial sector. Lewis explains further in the Lewis two-sector model, if there is excess labor in the traditional agricultural sector, there will be a shift of labor to the modern industrial sector and ultimately this will drive sustainable development and expansion of output from the industrial sector towards GDP.

FDI or Foreign Direct Investment is an important source of capital in many developing countries. FDI contributes to job creation, technology transfer, economic growth, and sustainable development (Ha et al., 2022). According to Todaro & Smith (2009). FDI can also be interpreted as capital investment made abroad by private multinational companies. The HDI explains the ways in which the population can benefit from development progress, including in the aspects of education, health, and income, so on (Central Statistics Agency, 2023). HDI can also be interpreted as an index to measure the socio-economic development performance of a country and is measured based on a combination of education, adjusted real income per capita, and health (Todaro & Smith 2009). One of the main benefits of HDI is that it shows that high levels of human development are possible even in low-income countries, and vice versa. According to Gruber (2012) Corruption is an abuse of power carried out by government officials with the aim of maximizing personal or group wealth. Corruption can also be defined as the taking over of public resources for personal gain or other personal interests by means of the use and abuse of official power or influence. (M. P. Todaro & Smith, 2009).

Previous Research

The following are the results of previous research that are relevant to this research. As explained in the background, in the research Gupta (2007), which examines the determinants of tax revenue in 105 developing countries over 25 years. The research results show that per capita income has a positive effect on central tax revenues. Meanwhile, the added value of agriculture to GDP and corruption have a negative effect on central tax revenues.

The next research is research written by Rodriguez (2018), which discusses the determinants of tax revenue again by analyzing unbalanced panel data. The object of this research is 138 countries from 1976 to 2015. This research explains that capita income has no influence on tax revenue, while the agricultural sector has a negative effect on tax revenue.

Ha et al. (2022), in his research which focuses on the determinants of tax revenue in Southeast Asian countries, also discusses the impact of FDI and the industrial sector on tax revenue. This research uses 8 Southeast Asian countries from 2000 to 2016 as research objects. From the research results, it was found that FDI and industrial added value in GDP had a positive effect on tax revenues.

The next relevant research is research Ghura (1998), which discusses tax revenues in Sub-Saharan African countries regarding the effects of economic policies and corruption. The objects of this research were 39 countries in Sub-Saharan Africa from 1985 to 1996. The research results found that the added value of the agricultural sector in GDP and corruption had a negative effect on tax revenues, while HDI had a positive effect on tax revenues.

The next research is research Syadullah & Wibowo (2015), which focuses on the influence of government on tax revenues. The research object used 7 countries in Southeast Asia in the period 2003 to 2012. The research results showed that the higher the level of corruption, the lower the level of tax revenue.

Fenochietto & Pessino (2013), conducted research entitled Understanding Countries' Tax Effort. The research was conducted using data from 113 countries from 1991 to 2012 as research objects. The research results show that per capita income has a positive influence on tax revenues, while agricultural value added to GDP and corruption have a negative influence on tax revenues.

Anwar & Wijaya (2023), examined the influence of the agricultural sector and FDI on tax revenues using 10 ASEAN member countries from 2012 to 2019 as research objects. The research results show that FDI has a positive effect on tax revenues, but the agricultural sector does not have a significant effect on tax revenues before moderating the regulatory quality variable. In Research Eltony (2002), by focusing on knowing the determinants of tax revenue in Arab countries. This research uses 16 Arab countries as research objects from 1994 to 2000. In oil-producing countries, per capita income has a positive effect on tax revenues, while the agricultural and industrial sectors have no effect. In countries that are not oil producers, per capita income has a positive influence on tax revenue, industry has no influence on tax revenue and agriculture has a negative influence on tax revenue.

The next research is writing Maryantika & Wijaya (2022), which focuses on the determinants of tax revenue in Indonesia by adding mediation methods. The research object uses panel data from 10 provinces from 2013 to 2019. The research results explain that HDI has a positive effect on tax revenue, while corruption has no effect on tax revenue before being mediated by economic growth.

Castro & Camarillo (2014), in his research discussing the determinants of tax revenue in OECD countries. The research object consisted of 34 OECD member countries from 2001 to 2011. From the regression results it was found that income per capita and the industrial sector had a positive effect on tax revenue, while the agricultural sector and FDI (in gross fixed capital formation) had a negative effect on tax revenue.

One of the studies that focuses on regional tax revenues in Indonesia is research Ering et al. (2016), which discusses the potential for district and city taxes in order to improve the economy in North Sulawesi Province. This research found that per capita income and the agricultural sector influence regional tax revenues. The results of the regression using the random effect model show that per capita income has a positive effect on regional tax revenues, while the agricultural sector has a negative effect on regional tax revenues.

3. Research Methodology

This research uses a quantitative approach, which generally uses statistical methods to test the hypotheses made in the research (Sihombing, 2021). The sample selection in this study used provincial level data which had been adjusted using the purposive sampling method. This selection aims to produce a type of panel data, which is a data set consisting of observations of various subject units over a certain time span (Sihombing, 2021). This research uses secondary data sourced from various institutions such as the Ministry of Finance, Bank Indonesia (BI), Central Statistics Agency (BPS), and others. This research uses data that includes various variables such as tax revenues, per capita income, agricultural and industrial sectors in gross regional domestic product (GRDP), foreign direct investment (FDI), human development index (HDI), and the number of corruption cases over a period of time. 2013 to 2022 at the provincial level.

The tax revenue variable uses central tax revenue in rupiah units. The per capita income variable is obtained from dividing GRDP by population in units of thousands of rupiah. The agricultural sector and industrial sector variables use units of billions of rupiah. The FDI variable used in the research is measured in millions of US dollars. The HDI variable uses index units. Also, the corruption variable uses data on the number of criminal acts of corruption in units of the number of cases. Based on the problem formulation and explanation of the variables in the previous subchapter, a research model will be formed to explain the influence of the independent variable on the dependent variable. The variables per capita income, agricultural sector, industrial sector and FDI were transformed into natural logarithm form to reduce the scale of the variables.

This research uses descriptive statistical analysis techniques and panel data regression. Descriptive statistical analysis is a technique used to summarize, process and present data by referring to the size of distribution, location and concentration of data (Sihombing, 2021). This analysis can also take the form of conclusions and presentation of data. Regression analysis itself is a statistical model approach with the aim of understanding the influence of variables on other variables (Sihombing, 2021). The regression analysis process includes selecting a regression model, testing classical assumptions (Gauss Markov theory), and evaluating the feasibility of the regression model. According to Baltagi (2005), in selecting a regression model, researchers can consider the random effect (REM), common/pooled (CEM), and fixed-effect (FEM) models, with the aim of choosing the most informative model in explaining the relationship between variables.

After selecting the next regression model, classical assumptions or Gauss Markov theory are tested. This test aims to ensure that the regression parameters obtained are the Best Linear Unbiased Estimator (BLUE) (Sihombing, 2021). The purpose of the BLUE parameter is to ensure that the estimator used has the desired properties, namely having minimal variance,

linear, and unbiased among the various other possible estimators. Classical assumption testing is carried out by testing autocorrelation, heteroscedasticity, linearity and normality. The feasibility test of the regression model is carried out by testing the accuracy of the sample regression function in estimating actual values based on goodness of fit which is evaluated through the coefficient of determination (R2) and hypothesis testing (F statistical test and t statistical value). (Napitupulu et al., 2021).

The research model is as follows:

$$\text{LnTax}_{it} = \alpha + \beta_1 \text{LnPCI}_{it} + \beta_2 \text{LnAgri}_{it} + \beta_3 \text{LnInd}_{it} + \beta_4 \text{LnFDI}_{it} + \beta_5 \text{IPM}_{it} + \beta_6 \text{Corr}_{it} + \varepsilon$$

Information:

- α = Constant
- β = Regression coefficient
- i =sample province
- t =sample year
- Ln Tax = Ln National Tax Revenue
- Ln PCI = Ln income per capita
- LnAgri = Ln agricultural sector in GRDP
- LnInd = Ln industrial sector in GRDP
- LnFDI = Ln foreign direct investment
- HDI =Human Development Index
- Corr =Number of corruption cases
- ε = Error

The initial hypothesis in this research is:

- H1: Per capita income has a positive and significant effect on tax revenue.
- H2: Sector agriculture has a negative and significant effect on tax revenues.
- H3: Sector Industry has a positive and significant effect on tax revenues.
- H4: FDI positive and significant effect on tax revenues.
- H5: HDI positive and significant effect on tax revenues.
- H6: Corruption has a negative and significant effect on tax revenues.

4. Results And Discussion

Data regression testing was carried out using the Stata MP 17 application using various units of measurement. The first stage carried out in this research analysis was descriptive statistical analysis. A summary of the descriptive statistical results is presented in Table 2. The units in descriptive statistical testing are simplified by dividing the variables into billions of rupiah (tax, agricultural and industrial revenues), thousands of rupiah (per capita income), and millions of US dollars (FDI). The description of descriptive statistics consists of average (mean), standard deviation, minimum (min), and maximum (max).

Table 2: Descriptive Statistics

Variable	Obs	Mean	Std. dev.	Min	Max
Tax (billions of rupiah)	100	54,409.26	76,442.64	2,862.48	43.4354.2
PCI (thousand rupiah)	100	59,821.8	60,037.84	23,623.92	298,360
Agri (billion rupiah)	100	90,152.34	84,844.94	1,628.41	303,292.1
Ind (billion rupiah)	100	250,093.8	270,211.2	7,357.38	1,023,401
FDI (million US dollars)	100	1,821,311	1,832,629	9.7	7,124.9
HDI (index)	100	72.4473	4.182053	64.3	81.65
Corruption (case)	100	4.65	7.054442	0	37

*Notes:*Source processed by the Author

The tax revenue variable (Tax) has an average value of tax revenue of 54,409.26 billion rupiah with a standard deviation of 76,442.64 billion rupiah. The minimum value of research tax revenue is 2,862.48 billion rupiah on DIY Province in 2013. Meanwhile, the maximum value of tax revenue is 434,354.2 billion rupiah in DKI Jakarta Province in 2022.

The panel regression model was selected using the Crow Test, Lagrange Multiplier test and Hausman Test. The panel data model testing results can be seen in table 3:

Table 3 Panel Data Regression Model Test Results

Model comparison	Test method	Prob	Selected model
CEM and FEM	Chow Test	0.0000	FEM
CEM and REM	Lagrange Multiplier Test	0.0000	BRAKE
REM and FEM	Housman Test	0.0761	BRAKE

*Notes:*Source processed by the Author

The Chow testing method aims to determine the regression model between FEM and CEM. Chow testing gets a Prob value of 0.0000 or less than. So it is concluded that the FEM model is better than the CEM model. The Lagrange Multiplier testing method aims to determine the regression model between CEM and REM. Lagrange Test $\alpha = 0,05$ The multiplier gets a Prob value of 0.0000 or less than. So it is concluded that the REM model is better than the CEM model. The Housman testing method aims to determine the regression model between FEM and REM. The Housman test obtained a Prob value of 0.0761 or greater than or equal to 0.0761. So it is concluded that the REM model is better than the FEM model. Based on the results of the three tests that have been carried out, it was concluded that the best model to use is the Random Effect Model (REM). $\alpha = 0,05$ $\alpha = 0,05$

The next data test is testing classical assumptions or Gauss Markov theory. The types of tests carried out consist of Normality, Multicollinearity, Heteroscedasticity and Autocorrelation tests. The results of classical assumption testing are presented in Table 4:

Table 4 Classic Assumption Test Results

Classic assumption test	Testing	Prob
Normality	Skewness and Kurtosis Tests	0.4311
Multicollinearity	Variance Inflation Factor	3.73 (Mean VIF)
Heteroscedasticity	Breusch–Pagan/Cook–Weisberg Test	0.0000
Autocorrelation	Wooldridge Test	0.0000

*Note:*Source processed by the Author

The Skewness and Kurtosis test is used to test normality. The purpose of the normality test is to evaluate whether the residuals in the model have normal distribution. Based on the Skewness and Kurtosis test in Table 4, the Prob value is 0.4311 with a value of $\alpha = 0.05$. Thus it can be concluded that the data passed the normality test.

The Variance Inflation Factor test is used to test multicollinearity. The purpose of the multicollinearity test is to prove that all or several of the independent variables that form the regression model have a linear relationship. Based on the results in Table 4, the mean VIF value was 3.73 or less than 10, so it was declared to have passed the test (Sihombing, 2021). These results explain that there is no linear relationship between some or all of the independent variables that form the regression model.

The Breusch–Pagan/Cook–Weisberg test was used to test heteroscedasticity. This aims to see the similarity of the variance of the residuals between observations (Sihombing, 2021). Based on the results of the heteroscedasticity test, the Prob value is 0.0000 with a value of $\alpha = 0.05$. This value explains that there is a difference in residual variance between observations in the model or that it does not pass the test.

Wooldridge's test is used to test for autocorrelation. This test aims to see the residual relationship between an observation and other observations. Based on the results of the autocorrelation test, the Prob value is 0.0000 with a value of $\alpha = 0,05$, so there are symptoms of autocorrelation.

Based on the results of the tests that have been carried out, it can be seen that the regression model passed the multicollinearity test and normality test, while problems occurred in the heteroscedasticity test and autocorrelation test. So adjustments are needed in the regression model. According to Sihombing (2021), if a model meets the normality assumption, but at the same time there are violations of autocorrelation and heteroscedasticity, then the model can use panel-corrected standard error (PCSE) modeling. So the regression model in the research uses PCSE modeling.

The feasibility test of the regression model is carried out by testing the accuracy of the sample regression function in estimating actual values based on goodness of fit which is evaluated through the coefficient of determination (R²) and hypothesis testing (F statistical test and t statistical value). (Napitupulu et al., 2021). The results of multiple linear regression are presented in Table 5. Model re The regression used is Correlated Panels Corrected Standard Errors (PCSE) panel regression.

Table 5. Panel Regression Results Correlated Panels Corrected Standard Errors (PCSEs)

Variable	Coefficient	Z	Prob> z Two-tailed	Prob> z one-tailed
LnPCI	0.9224351	22,23	0,000	0,000
LnAgri	0.0122551	0.59	0.556	0.278
LnInd	0.5372347	21.29	0,000	0,000
LnFDI	0.0884896	2.98	0.003	0.0015
HDI	0.0161262	2.08	0.038	0.017
Corr	0.002112	0.82	0.415	0.2075
Cons	12.80629	19.54	0,000	0,000
R-square				0.9765
Prob > chi2				0.0000

Note: Source processed by the Author

The R² value or coefficient of determination explains the ability of the regression model to explain variations in the dependent variable by the independent variables in the regression model. Based on the regression results, the coefficient of determination value is 0.9765. This value explains that in the regression model, the independent variable can explain 97.65% of the dependent variable and the remaining 2.35% is influenced by other factors outside the research. Based on the statistical value F or Prob > chi², the result is 0.0000. These results explain that the independent variable simultaneously influence the dependent variable. Results of statistical

testing t or $\text{Prob}>|z|$ explains the influence of the independent variable partially on the dependent variable. Based on the regression results, the results are $\text{Prob}>|z|$ One-tailed results show that income per capita, industry, FDI and HDI have a significant positive effect on tax revenue, while agriculture and corruption do not have a significant effect on tax revenue. $\alpha = 0,05$

Based on regression results Correlated panels corrected standard errors (PCSE) panel in Table 5, the tax revenue equation can be created as follows:

$$\text{LnTax}_{it} = 12,80629 + 0,9224351 \text{LnPCI}_{it} + 0,0122551 \text{LnAgri}_{it} + 0,5372347 \text{LnInd}_{it} + 0,0884896 \text{LnFDI}_{it} + 0,0161262 \text{IPM}_{it} + 0,002112 \text{Corr}_{it} + \varepsilon$$

Information:

LnTax = LnNational Tax Revenue
 LnPCI = Lnincome per capita
 LnAgri = Lnagricultural sector in GRDP
 LnInd = Lnindustrial sector in GRDP
 LnFDI = Ln foreign direct investment
 HDI = Human Development Index
 Corr = Number of corruption cases
 i = sample province
 t = sample year
 ε = Error

Based on the results of the regression equation, it is found that per capita income has a significant positive effect on tax revenue. Every one percent increase in per capita income can increase tax revenues by 0.92%. The industrial sector also has a significant positive effect on tax revenues, with every one percent increase in the value of the industrial sector increasing tax revenues by 0.54% of tax revenues. FDI has a significant positive impact on tax revenues, where every one percent increase in total FDI can increase tax revenues by 0.09%. Tax revenues can also be influenced by HDI, with HDI having a significant positive effect on tax revenues. Every increase of one HDI point can increase tax revenues by 1.61%. However, different results were obtained for the agricultural sector and corruption variables which did not have a significant effect on tax revenues. So the influence of these two variables cannot be explained.

Income per capita

Based on the results of hypothesis testing, per capita income has a significant effect with a positive relationship on tax revenue. This shows that as per capita income increases, tax revenues will also increase. Gross national income per capita is one of the measurement tools commonly used in the economy (M. P. Todaro & Smith, 2009). The higher the per capita income, the higher the relative economic welfare index of society in a country.

The positive impact of per capita income on tax revenues was also found in the research results Gupta (2007), the capacity to collect and pay taxes is in line with the increasing level of economic development in a region. In his research, it is further explained that the positive impact of per capita income on tax revenues is stronger in high-income countries than in lower-middle income countries. The results which stated that economic development would increase tax

revenues were also expressed by (Castro & Camarillo, 2014). Per capita income is also one of the main determinants of tax revenue based on research results (Eltony, 2002). Eltony (2002) explains in his research that per capita income is one of the main factors influencing tax revenues in oil-producing Arab countries, non-oil-producing Arab countries and Arab countries in general.

Agricultural sector

The agricultural sector variable in GRDP does not have a significant effect with a positive relationship on tax revenue. Different results may occur because the proxy variables used are not the same as previous research. The proxy used in previous research is the share of agriculture in GDP (Castro & Camarillo, 2014; Eltony, 2002). Meanwhile, researchers use a proxy for the total agricultural sector in GRDP. With the same proxy, results were also obtained that were not in line with the results Ering et al., (2016), with research results that the agricultural sector has a negative effect on regional tax revenues.

These results are also not in line with the research results Eltony (2002), that small-scale farmers will be difficult to tax and the agricultural sector in general does not generate high tax revenues. These results are also not in line with research Castro & Camarillo (2014), which explains that middle-income countries have agricultural producers that are mostly managed on a small scale, which is likely to have a negative effect on tax revenues.

Manufacturing industrial sector

Based on the results of the regression test, the manufacturing industrial sector in GRDP has a significant effect with a positive relationship on tax revenues. Industries in highly specialized and dynamic sectors of the economy with large companies can benefit. In the end, this advantage can provide higher tax revenues, making it easier to collect taxes compared to the agricultural sector. Thus, the higher the added value of an industry, the higher the tax revenue. This opinion is also strengthened by the results of research conducted by Castro & Camarillo (2014), that one thing that allows higher tax revenues is the existence of a strong industrial sector.

Foreign direct investment

Based on the panel data regression results, FDI has a significant effect and has a positive relationship on tax revenues. These results are in line with the research results Ha et al. (2022), that FDI has a significant positive impact on tax revenues. This positive result occurs because FDI is an important resource as a source of capital to compensate for the lack of capital investment. This capital investment will contribute to increasing economic growth, which in turn will increase tax revenues in a country. FDI has a positive effect on tax revenues which is also in line with opinion Anwar & Wijaya (2023), that FDI can increase tax revenues due to increased productivity in the host country. Apart from that, FDI also influences tax revenues by creating new jobs and increasing consumer spending which will ultimately develop value added-based taxes.

Human development index

Based on the regression results, HDI has a significant effect and a positive relationship on tax revenue. BPS in calculating HDI uses three basic aspects as the basis for its measurement, namely longevity and healthy living; knowledge; and a decent standard of living. As the HDI value increases, it will reflect an increase in these three basic aspects. These results are reinforced by opinions Maryantika & Wijaya (2022), which explains that human development can influence people's attitudes or behavior in paying taxes. By increasing human development, the quality of human resources is also improved, which will ultimately increase productivity in the economy (Maryantika & Wijaya, 2022). In addition, when taxpayers see the benefits of tax contributions, it will increase taxpayers' voluntary compliance to pay taxes (Ghura, 1998).

Corruption

Based on the results of hypothesis testing, corruption has no significant effect on tax revenues with a positive relationship. Different results may occur because the proxy variables used are not the same as previous research. The same results were obtained by Maryantika & Wijaya (2022), who found that corruption had no effect on tax revenues. This can happen because the actual number of corruption cases is difficult to know. Limited data availability also affects research, such as the lack of information on the corruption index in each province.

These results are different from research results (Fenochietto & Pessino, 2013; Ghura, 1998; Gupta, 2007; Syadullah & Wibowo, 2015). Based on the research results of Gupta (2007), corruption is one of the factors that influences tax revenues from institutional factors. By reducing the number of corruption (in the form of increasing the corruption index) it will have a positive effect on tax revenues. Where the influence mainly occurs in low-income countries. In addition, the impact of corruption, which is usually defined as the abuse of public interests for personal gain, is measured by the index. This index measures the extent to which bribery is generally expected to be carried out by government officials, one of which is related to tax assessment (Ghura, 1998).

5. Conclusion

Research analyzing the influence of per capita income, agriculture, industry, foreign direct investment, human development index, and corruption on tax revenues in Indonesia: a case study at the regional office of the Directorate General of Taxes with a working area of one province from 2013 to 2022 carried out using panel data regression. The results of the classical assumption test showed that the regression model passed the normality and multi-collinearity tests. Meanwhile, the heteroscedasticity and autocorrelation tests did not pass the test. So the panel-corrected standard error (PCSE) regression model is used for regression. Based on the R² test, the variables per capita income, agriculture, industry, FDI, human development index, and corruption can explain 97.65% of the tax revenue variable and the remaining 2.35% is explained by other variables not included in the research.

Based on the results of the test, the variables per capita income, industry, FDI, and human development index partially have a positive and significant effect on tax revenues. Increasing the variable values of per capita income, industry, foreign direct investment, and human development index will increase tax revenues. However, the agricultural and corruption variables partially do not have a significant effect on tax revenues, so the results of the agricultural sector variables and corruption on partial tax revenues cannot be explained. This result of no effect is likely due to differences in the use of proxies for agricultural and corruption variables with previous research.

For further research, a wider range of data can be used. Because this research is only limited to purposive sampling of ten provinces based on DJP Regional Office data. The next research data could be in the form of using tax revenue variables based on Tax Service Office (KPP) revenue data to get more observations or use wider year data. Apart from that, the use of proxies in research variables can be varied, such as using a corruption index proxy to replace the number of corruption cases. Apart from that, the use of the service sector can also be used as a variable to examine the impact of economic structure on tax revenues.

For the government, increasing tax revenue can be done by increasing per capita income, industrial sector, FDI and human development index. An increase in per capita income will generally improve the economy and will ultimately increase taxable revenues. The industrial sector is a sector that is easier to tax than the agricultural sector. Increasing FDI can increase tax revenues by accelerating productivity and economic growth. Meanwhile, increasing human development as measured by HDI can increase human resources and taxpayer compliance.

For DJP, the variables per capita income, industrial sector, FDI and HDI can be considered in setting tax revenue targets, both nationally and regionally. Apart from that, this variable can also be taken into consideration in determining tax policy and its implementation. DJP can plan tax revenue targets based on economic conditions on variables. Furthermore, the DJP can carry out guidance and adjustments to taxation in the agricultural sector, so that the agricultural sector can have a positive influence, both directly and indirectly, on tax revenues.

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