Analysis of dominant factors affecting regional tax revenue in regency, city of Jambi province

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ABSTRACT

This study aims to identify and analyze the dominant factors that influence regional tax revenues in Jambi Province, especially in 2015-2019. The variables used are taxpayers, per capita income, number of industries, banking credit, balancing funds, infrastructure, domestic investment (PMDN), and micro, small and medium enterprises (UMKM) as independent variables, while regional tax revenue is the dependent variable. This analysis tool uses quantitative analysis with multiple regression formulations of panel data, a combination of the time series in the form of a 2015-2019 time series and a cross-section, namely the latitude of the Regency / City in Jambi Province. The income per capita, taxpayers, bank credit, balancing funds, Micro, Small and Medium Enterprises (UMKM) and Domestic Investment (PMDN) significantly affect regional tax revenues. Meanwhile, the number of industries, infrastructure, and balancing funds do not significantly affect regional tax revenues.

INTRODUCTION

Regional revenue (PAD) is one source of revenue that should be optimized to provide compensation to the community through good services and improvement of public facilities (Edame, G. E., & Okoi, 2014). An adequate amount and increase in the contribution of PAD will determine the level of independence of the Regency/City Government in regional development. Therefore, it does not always depend on assistance from the Central and Provincial governments (Sapiei, 2014). According to Article 157 of Law Number 32 of 2004, Regional Original Revenue is a source of income consisting of tax proceeds, levies, separated wealth management results and other legitimate original income.

For some of these PAD sources, regional taxes are one of the PAD sources that make a very large contribution, as is the case for Jambi Province. In 2015, Jambi Province’s PAD amounted to 1.218 trillion, of which regional tax revenues amounted to 1.019 trillion or 83.71%. Furthermore, in 2019, Jambi Province’s total PAD revenue was 1.524 trillion, while regional tax revenues were 1.296 trillion or 85.04%. This indicates the increasing role of regional taxes in the revenue structure of the Jambi Province APBD.

Various cities and regencies in Jambi Province can earn more regional taxes than other areas when analyzed individually. Jambi City and Sarolangun Regency are two regions with the largest tax revenue capacity. For 2019, regional tax revenues amounted to 247.889 billion and 63.852 billion for Sarolangun Regency and Jambi Province. The regencies with the smallest capacity to generate regional taxes are Kerinci and Tanjung Jabung Timur, which are 18.263 billion and 20.159 billion, respectively.

Due to the important and strategic role, it is necessary to identify the factors influencing regional tax revenues (Egbunike, F. C., Emudainohwo, O. B., & Gunardi, 2018). According to (Manuaba & Gayatri, 2017), income strongly influences people’s ability to pay taxes. The metric for per capita income reflects this on the macro level. The greater the per capita income in an area, the more capable the community will be of paying taxes (Ofoegbu, G. N., Akwu, D. O., & O, 2016).

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The amount of regional tax revenue is related to the object of the regional tax. For cities and regencies in Jambi Province, the role of UMKM greatly affects the economy. Therefore, the number of UMKM will also affect each region's tax revenue (Edame, G. E., & Okoi, 2014). The same applies to the number of industries and their business scale. It is necessary to understand that the role of the government is very meaningful, especially related to taxation management (Novianto, 2015). Responding to this phenomenon, this study aims to determine what factors are dominant in influencing regional tax revenues in the Regency / City of Jambi Province.

Regional taxes are the main source of revenue to obtain original income (PAD) (Agana, J.A., Mohammed, A.K., & Zamore, 2018), and the majority of PAD comes from Regional Taxes. The Regency / City government of Jambi Province needs to increase PAD in the context of revenue. This means that the increase in Regional Taxes aligns with revenues. To increase revenue from regional taxes, it is necessary to study the management of tax revenues based on real conditions to analyze how much the region's ability to increase PAD is based on tax revenues. The PAD revenue from regional taxes can be increased and optimized. For this reason, a detailed and objective revenue calculation needs to be calculated carefully. Besides, it is necessary to observe and assess what factors affect the amount of regional tax revenue. These include Taxpayers, Per capita Income, Number of Industries, banking credit, Balancing Funds, Infrastructure, domestic investment, and UMKM (Taylor, G. & Richardson, 2014).

This study aims to identify and analyze the dominant factors that influence regional tax revenues in Jambi Province, especially in 2015-2019

**Method**

This study uses a secondary analysis method equipped with an observation method from the 2015 – 2019 times series. The data analysis determines the dominant factors affecting Regency / City tax revenues in Jambi Province using the Multiple Regression Equation of Panel Data. The panel data multiple regression formulations can be seen below

\[ Y_{it} = \alpha + \beta_1 X_{1t} + \beta_2 X_{2t} + \beta_3 X_{3t} + \beta_4 X_{4t} + \beta_5 X_{5t} + \beta_6 X_{6t} + \beta_7 X_{7t} + \beta_8 X_{8t} + e \]

**Definition**

- **Y** = Regional Tax Revenue
- **X1** = taxpayer
- **X2** = income per capita
- **X3** = number of industries
- **X4** = Banking credit
- **X5** = Balance fund
- **X6** = Infrastructure
- **X7** = Domestic Investment
- **X8** = UMKM
- **e** = Confounding Variable

The Mechanism of Using Panel Data Regression, through three methods, estimates the panel data regression model, including the common effect, fixed effect, and random effect (Wahab, 2016). The most suitable method for the model will be tested by performing the Chow test and the Houstman test.

**Findings**

The data analysis was conducted to analyze the effect of eight independent variables: taxpayers, per capita income, number of industries, banking credit, balancing funds, infrastructure, domestic investment, and UMKM. The dependent variable is the original revenue of the regency/city in Jambi Province. The data analysis for the effect of all independent variables on the dependent was conducted using panel data regression. The regression model is panel data which consists of three approaches, namely Pooled Least Squares model (PLS), Fixed Effect Model (IFEM) and Random Effect Model (Jansky, 2019). To determine which model is the most appropriate, model testing is used.

The Hausman statistical test shows that the right model for modeling panel data is the Fixed effect model approach. Under the research method, multiple linear regression is used with the selected model to analyze how much influence the variables X1, X2, X3, X4, X5, X6, X7, and X8 have on Y in Jambi Province. Pooling or panel data were obtained using the Eviews 8.0 series analysis tool described by the following equation:

\[ Y_a = 2.22E+10 - 370444,5 X_1 + 400719,1 X_2 + 6,73E+08 X_3 + 11587,39 X_4 + 0,001102 X_5 + 0,007157 X_6 + 5499,034 X_7 - 1349849 X_8 \]

\[ R^2 = 0,899158 \text{ and } F \text{ Prob} = 0,000000 \]

The intercept (β0) coefficient in each Regency/City in Jambi Province can be formulated as:

\[ \text{individual intercept of regency/city } i = \text{overall intercept (β0)} + i \text{ intercept (β0i)} \]
The results of the calculation of Regency/City operational expenditure intercepts can be obtained as follows in Table 1:

Table 1: The results of the calculation of Regency/City operational expenditure

<table>
<thead>
<tr>
<th>β₀ for</th>
<th>Intercept</th>
<th>95% Confidence Interval</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>BATANGHARI</td>
<td>2.22E+10</td>
<td>+ -1.71E+10</td>
<td>5.1E+09</td>
</tr>
<tr>
<td>BUNGO</td>
<td>2.22E+10</td>
<td>+ 1.70E+10</td>
<td>3.92E+10</td>
</tr>
<tr>
<td>KERINCI</td>
<td>2.22E+10</td>
<td>+ -4.81E+09</td>
<td>1.74E+10</td>
</tr>
<tr>
<td>KOTAJAMBI</td>
<td>2.22E+10</td>
<td>+ 6.97E+10</td>
<td>9.19E+10</td>
</tr>
<tr>
<td>MERANGIN</td>
<td>2.22E+10</td>
<td>+ 1.05E+10</td>
<td>3.27E+10</td>
</tr>
<tr>
<td>MUAROJAMBI</td>
<td>2.22E+10</td>
<td>+ -1.77E+10</td>
<td>4.5E+09</td>
</tr>
<tr>
<td>SAROLANGUN</td>
<td>2.22E+10</td>
<td>+ 3.79E+09</td>
<td>2.6E+10</td>
</tr>
<tr>
<td>SUNGAIPENUH</td>
<td>2.22E+10</td>
<td>+ -3.37E+10</td>
<td>-1.2E+10</td>
</tr>
<tr>
<td>TANJABBARAT</td>
<td>2.22E+10</td>
<td>+ -2.30E+10</td>
<td>-8E+08</td>
</tr>
<tr>
<td>TANJABTIMUR</td>
<td>2.22E+10</td>
<td>+ 2.08E+09</td>
<td>2.43E+10</td>
</tr>
<tr>
<td>TEBO</td>
<td>2.22E+10</td>
<td>+ -6.69E+09</td>
<td>1.55E+10</td>
</tr>
</tbody>
</table>

From the results above, the regency/city government of Jambi Province still depends on the independent variable, namely (X1, X2, X3, X4, X5, X6, X7 and X8) in meeting the increase or decrease in the dependent Y variable. It can be concluded that variables X3, X5 and X6 are less effective and insignificant in increasing or decreasing the Y during the 2015-2019 period.

The Fixed Effect estimation technique from this panel data makes it possible to analyze the differences in 11 regencies/cities. The difference can be seen in the coefficient 0 (intercept) between regencies/cities. In this case, the city of Jambi has the highest 0 (intercept) of 9.19E+10, meaning that when there is a change in the variables (X1, X2, X3, X4, X5, X6, X7 and X8), the City of Jambi gets an individual influence on Y (regional tax) of 91.9 million rupiahs in the 2015-2019 period. The high intercept value is due to the city's industrial and trade potential.

Tanjung Jabung Barat has the lowest 0 (intercept) of -8E+08, meaning that when there is a change in the variables (X1, X2, X3, X4, X5, X6, X7 and X8), then Tanjung Jabung Barat has an individual influence on Y (regional tax) of 800 million rupiahs in the 2015-2019 period. The high intercept value is due to the city's industrial and trade potential.

From the explanation above, the effort to increase the Y variable (regional tax) is to optimize the regional potential for development in productive sectors by increasing Y variable (regional tax). Tanjung Jabung Timur does not optimize the regional potential for productive sectors but uses it for other consumptive allocations that do not directly affect the welfare of the regional community.

Based on the t-test with a confidence level of 5% or P < 5%, X1 (taxpayer) is significant at P = 0.0279. X2 (per capita income) is very significant at P = 0.0002. X4 (bank credit) is also very significant at P = 0.0003. X7 (Domestic Investment) is also significant at P = 0.0153 and X8 (UMKM) is very significant at P = 0.0091. Meanwhile, the variables X3 (number of industries), X5 (balancing funds) and X5 (infrastructure) have no significant effect on regional tax revenues. This means 5 variables affect regional tax revenues, while 3 do not.

The F test (overall) shows that all variables affect regional tax revenues. They significantly affect regional tax revenues on P = 0.000000. This means that X1 (taxpayers), X2 (per capita income), X3 (number of industries), X4 (bank credit), X5 (balancing funds), X6 (infrastructure), X7 (domestic investment) and X8 (UMKM) have a collective influence to regional tax revenues.

From the results of the R-squared calculation shown in the equation above, the R² value is 0.968959. Therefore, 96.89% of Y were influenced by changes in the variables X1, X2, X3, X4, X5, X6, X7 and X8, while other variables explained the remaining 3.11% were not influenced.

Based on the results of the econometric test, the Per capita income factor was very influential and significant on regional tax revenues at P = 0.0002, and the banking credit factor greatly influenced regional tax revenues at P = 0.0003. The UMKM and Domestic Investment factors also affect regional tax revenues at P = 0.0089 and P = 0.0153, while Taxpayers affect regional tax revenues at P = 0.279. Per capita income is one of the important indicators to determine economic conditions in a region within a certain period, as indicated by Gross Regional Domestic Product (PDRB). High per capita income tends to encourage an increase in consumption, creating incentives to change the production structure.
Discussion

The results show that per capita income positively and significantly affects regional tax revenues. This is because people's income shows the ability to pay their expenses, including taxes. The higher the income per capita of the community has a positive influence on increasing tax revenue.

This is in line with the research of (Haniz & Sasana, 2013) with the title on the analysis of the factors that affect the tax revenue of Tegal City. The study results show that per capita income positively and significantly affects regional tax revenues. This is because people's income shows the ability to pay their expenses, including taxes. Per capita income is an important indicator to determine a region's economic conditions within a certain period. High per capita income encourages an increase in consumption, creating an incentive to change the production structure.

Bank credit needs to be increased because it plays a very important role in the growth and development of UMKM, which can increase the income of people who conduct UMKM (Yee, 2017).

The research of (Jayaprananta & Setiawina, 2017) discussed the variable of bank credit, its effect on the hotel and restaurant business, and its impact on the Regional Original Income of the Regency and City of Bali Province. The results showed that bank credit positively affected the restaurant business. The hotel and restaurant business positively affects PAD and its receipts. Bank credit indirectly affects PAD through hotel and restaurant business variables. The distribution needs to be increased because it plays a very important role in supporting tourist development in Bali. The development of facilities and services from hotels and restaurants will increase regional revenue (PAD).

(Sitiwik, 2018) uses UMKM, Labor Growth, and Tax Revenue as research variables. The results showed that UMKM had a positive effect on tax revenue. This is in line with the research by (Kibassa, 2012), which explains that UMKM greatly contributes to tax revenue.

The government improved regulatory aspects, licensing procedures, and costs, including the ease of doing business in Indonesia (Solikin et al., 2017) in terms of taxation, convenience was provided for UMKM by simplifying tax rates, ease of payment and tax reporting by issuing PP 46 of 2013. This is in line with the research of (Haniz & Sasana, 2013) with the title of research on the analysis of the factors affecting the tax revenue of Tegal City. The results show that taxpayers positively and significantly impact regional tax revenues. Therefore, the taxpayer's experience increases with the value of regional tax revenues. This result is because the amount of income withdrawn will increase with regional independence.

(Jorge et al., 1992) stated that the population largely determines the size of the income in the tax sector, and the number of working people limits it. Therefore, the number of taxpayers is directly proportional to the regional revenue.

The Regency/City Investment Coordinating Board of Jambi Province is expected to create a supportive investment climate, simplify the licensing process, and improve regional infrastructure facilities and the quality of human resources. This will support and facilitate investing regulations to increase PMDN capital flow to the regions (Klip, 2015).

(Lubis & Ani, 2018) uses Domestic Investment (PMDN), Foreign Investment (PMA) research variables, and Regional Original Revenue (PAD) variables. The results showed that the PMDN variable significantly influenced PAD in North Sumatra Province.

The number of industries does not affect regional tax revenues in line with the research of the Wonogiri Regency. The hypothesis test results (t-test) showed that the significance value of the variable number of industries (IND) is 0.488, meaning that it is insignificant at a significance level of 10%. At a significance level of 10%, the number of industries does not affect the regional tax revenue. The results do not support the proposed or the second hypothesis (H2 is rejected). There is no influence between the number of industries on regional tax revenues in the Wonogiri Regency. Therefore, the results do not support the research by (Ariyani et al., 2018) that the industry affects regional tax revenues.

The next research is by (Aji & Sbm, 2021) with the title on factors that affect regional taxes in Semarang City. Secondary data are obtained based on information compiled and published by certain agencies, and the study uses panel (Time Series) data for 2000-2019. The results showed that the number of industries had no significant effect on regional tax revenues at a significance level of a = 5 percent.

Bayu and Nugraha explained that the influence of the number of industries on regional taxes does not have a significant effect. Therefore, industrial development in the city of Semarang is needed to increase, spur and lift the development of other sectors. The non-significance occurs because the increase in the number of industries is an increase in micro-enterprises and is not subject to tax. The results of this study are not in line with research by (Putri et al., 2022), where the number of industries has an effect and is significant on regional taxes.

The influence described in a schematic form shows the managerial level influencing regional tax revenues. The schematic in question is presented in the following figure:
Figure 1: Schematic Factors That Have A Significant Effect on Regional Tax Revenues

The picture above shows that efforts to increase Per capita income are the priority policies that need to be carried out. Meanwhile, the second priority policy is to increase the number of banking credits to develop businesses can grow and. In the end, business actors also increase regional tax payments, and the third priority policy falls on the development of UMKM as regional taxpayers. Regional tax payments will also increase when UMKH progresses rapidly. Meanwhile, the number of industries, balancing funds, and infrastructure are not priority policies for increasing regional tax revenues.

Conclusions

The factor of per capita income, bank credit, and micro, small, and medium enterprises (MSMEs), taxpayers, and domestic investment have a significant impact on local tax revenue. On the other hand, the number of industries, balance funds, and infrastructure do not affect local tax revenue. As a follow-up to the research results, local government in districts/cities needs to take policies that can encourage an increase in local tax revenue. These policies should be made based on priority scales according to the research results. The policies include increasing the income of local taxpayers, especially business income that is subject to taxation, increasing bank credit, and increasing the number of MSMEs.

The research results require follow-up actions to improve the research outcomes for future applications. The follow-up actions include accurately and legally recalculating the potential of local tax revenue possessed by the districts/cities to obtain the actual potential amount of local tax revenue, as well as building and implementing an online management application system for local taxation in districts/cities to meet the demands of transparency and current trends.

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Conflicts of Interest: The authors declare no conflict of interest.

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