The Effect of Local Taxes and Retribution on Economic Growth in Indonesia

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Local Tax; Local Retribution; Economic Growth

Abstract

The purpose of study is to analyze the effect of local taxes and retributions on the economic growth in Indonesia. The data used are secondary data from provinces in Indonesia 2014-2017 using panel data regression with Random Effects Model (REM). The results are as follows, first, the local taxes has a negative and significant impact on the economic growth in Indonesia. Second, the retributions have a positive and significant effect on the economic growth in Indonesia. The government should evaluate and plan a good strategy for the next period so that the potential revenues of local taxes and retributions can increase the economic growth gradually.

Kata Kunci:
Pajak Daerah; Retribusi Daerah; Pertumbuhan Ekonomi

Abstrak

Tujuan dari penelitian ini adalah melakukan analisis pengaruh pajak daerah dan retribusi daerah terhadap pertumbuhan ekonomi di Indonesia. Data yang digunakan merupakan data sekunder provinsi di Indonesia periode 2014-2017 yang dianalisis menggunakan regresi data panel dengan Random Effects Model (REM). Hasil dari penelitian ini adalah Pertama, variabel pajak daerah memiliki pengaruh negatif dan signifikan terhadap pertumbuhan ekonomi di Indonesia. Kedua, variabel retribusi daerah memiliki pengaruh positif dan signifikan terhadap pertumbuhan ekonomi di Indonesia. Pemerintah sebaiknya melakukan evaluasi dan menyusun strategi agar potensi penerimaan pajak daerah dan retribusi daerah periode selanjutnya dapat semakin meningkatkan pertumbuhan ekonomi.

1. Introduction

Economic growth is a process of activity that develops in the economy resulting in an increase in the production of goods and services in society accompanied by an increase in the level of welfare of the community. Economic growth is a form of increase in national income caused by the process of increasing the production capacity of an economy (Mononimbar, Walewangko, & Sumual, 2017). Gross Regional Domestic Product (GRDP) along with the rate of growth at constant prices can be used as a proxy in measuring economic growth that occurs in an area.

With regional autonomy, local governments have a very large role in determining the direction of policy in their regions. Improving local tax autonomy is a more effective way than increasing fiscal transfers to finance local governments while strengthening local fiscal discipline (Liu, Ding & Junxue, 2019). Local taxes and retribution are the domain of local government which is strengthened by the passing of Law No. 28 of 2009. Local taxes and

retribution are the most dominant and important source of Local Revenue for funding various types of local government activities. This policy must be implemented by upholding the principles of equality and fairness, democratic principles, accountability, and community participation while taking into account regional potential (Undang-Undang No. 28, 2009).

Local taxes and retribution are sources of revenue used to finance local government spending in order to stimulate the pace of the economy and support efforts to economic growth. Local taxes are mandatory contributions under the statute, which are owed by individuals or entities to the regions, with no direct compensation and are utilized for the benefit of the region for the maximum welfare of the people (Undang-Undang No. 28, 2009). Whereas local retribution is a regional levy as compensation for services or devolution of certain licenses prepared and/or specifically permitted by the regional government for the benefit of individuals or entities (Undang-Undang No. 28, 2009). In the midst of the deficit in the State Budget, local governments need to pay more attention to the use of local taxes and retribution that are effective and efficient. This has led to the need to see the extent of the impact of the implementation of local taxes and retribution on the economy. Saragih (2018) examines that local tax revenue has a significant positive impact on economic growth in Indonesia. While the Juniati (2018) research gives a result where local retribution has a significant positive effect on economic growth that occurs in Surakarta.

Local tax has a positive and insignificant effect while local retribution has a significant positive effect on the economic growth of cities in Lampung (Edwin, 2014; Sunarto & Sunyoto, 2016) states that local taxes have a significant positive effect, while local retribution does not significantly influence economic growth in Central Java.

Previous studies only analyzed the effect of local taxes and retribution on partial economic growth. Other studies also only analyze the effect of local taxes and retribution on economic growth simultaneously, but only to the regional level. Based on this background, this study will analyze the effect of local taxes and retribution on economic growth at the national level simultaneously using the econometric model approach.

The purpose of this study is to analyze the effect of local taxes and retribution on economic growth in Indonesia in the 2014-2017. The regional government is trying to increase regional revenue through local taxes and retribution in order to stimulate economic growth. The hypothesis that will be tested in this study are:
1. Local taxes have a positive effect on economic growth in Indonesia.
2. Local retribution has a positive effect on economic growth in Indonesia.

2. Method

This research is a quantitative study in which the type of data can be measured or calculated directly in the form of information or explanations expressed in numbers or in the form of numbers. The variables studied as independent variables are local tax and retribution. Local taxes are calculated from Provincial Tax and Regency/City Tax. Local retribution are derived from general service fees, business service fees and certain licensing fees. GRDP

growth rate based on constant 2010 prices is a proxy for economic growth (Badan Pusat Statistik, 2018) as the dependent variable.

The data comes from the publication of the Badan Pusat Statistik (BPS-Statistics Indonesia). The amount of data used in this study amounted to 396 data. The data is sourced from the Regional Financial and Asset Management Agency of the Governor's Office in each province which is collected through the Regional Financial Survey conducted by BPS-Statistics Indonesia. The 2014-2017 period covers four fiscal years and 2017 is used as the last year because in 2018 Indonesia is experiencing a monetary crisis that impacts on economic conditions so that it will be biased when included. Descriptive analysis and inference analysis were used as the method of analysis in this study. Descriptive analysis is a simple method used to provide an overview and description of objects based on available data and information. The inferencing analysis that was applied to analyze the effect of regional taxes and regional user fees on economic growth in Indonesia in the 2014-2017 period was a panel data regression analysis. Data processing is performed with EViews 10. The regression model used is presented in Eq.(1).

$$\text{GRDP\_growth rate}_{it} = \alpha + \beta 1 \, \text{Ln Local Tax}_{it} + \beta 2 \, \text{Ln Local Retribution}_{it} + \varepsilon_{it} \quad (1)$$

Note:

GRDP_growth rate : GRDP growth rate based on constant 2010 prices (percent)
Local Tax   : Value of local tax revenue (million Rupiah)
Local Retribution   : Value of local retribution revenue (million Rupiah)
i : The provinces in Indonesia rank to -i
t : Research Period (2014-2017)
α : Intersep
β : Koefisien independent variable
ε_{it} : *Error term*

According to Baltagi (2005), the stages of the panel data regression analysis procedure are:

1. Model specifications

Model specifications were formed based on previous studies with the aim of selecting dependent and independent variables. This study uses the GRDP growth rate based on constant 2010 prices as the dependent variable while the local tax and retribution are the independent variables.

2. Identification model

There are three models in panel data regression, namely the Common Effects Model (CEM), the Random Effects Model (REM), and the Fixed Effects Model (FEM). The selection of the best model is required by applying the Chow Test, Hausman Test, and BP-LM Test. Panel Data Regression Analysis Procedure is presented in Figure 1.
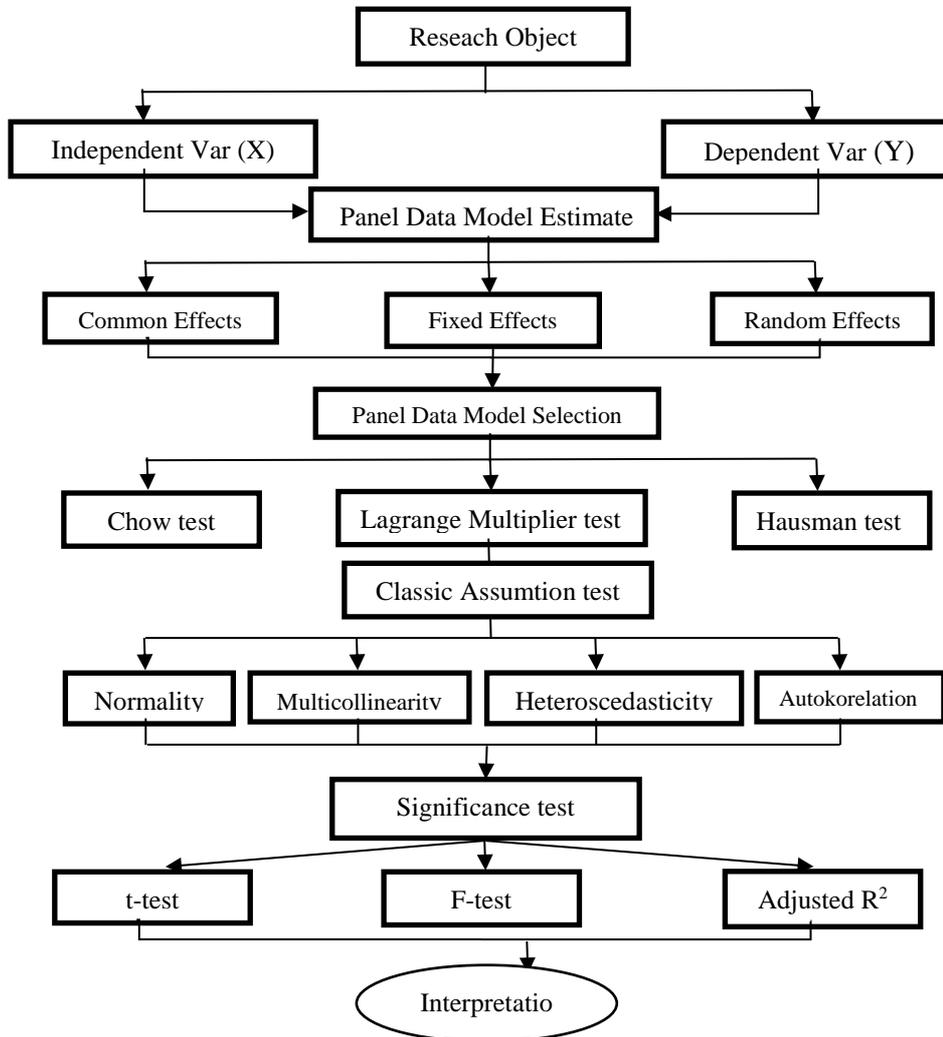
Figure 1. Panel data regression analysis procedure

3. Classic assumptions test

    After the best model is obtained, the next step is to conduct a series of classic assumption tests. There are four types of classical assumptions that must be fulfilled: normality, non-multicollinearity, homoscedasticity, and non-autocorrelation.

4. Test the significance of the model

    After the model chosen meets all the classic assumption tests, the significance test must be carried out. Significance test using t-test, F-test, and adjusted R2.

5. Interpretation of the model

    After all the steps are taken, the final step is to interpret or explain the chosen model. The explanation is based on the theories that have been proposed. In addition, the explanation also compares with related studies that have been done before.

3. Result and Discussion

3.1 Descriptive Statistic

This study uses local tax and retribution as an independent variable as well as economic growth/GRDP growth rate based on 2010 constant prices as the dependent variable. Descriptive statistics of the variables analyzed are presented in **Table 1**.

Table 1. Descriptive statistic variable

Variable	N	Max	Min	Mean	Std. Dev.	Sum	Sum Sq. Dev.
Growth Rate	132	21.76	-1.20	5.46	2.40	720.19	752.97
Ln (Local Tax)	132	17.41	11.89	14.18	1.24	1,871.82	200.03
Ln(Local Retribution)	132	13.42	6.81	10.05	1.29	1,327.18	218.86

Based on Table 1, the amount of data examined from all variables is 396 data. Variable GRDP rate consists of 132 data with a maximum value of 21.76; minimum value of -1.20; an average value of 5.46; and a standard deviation of 2.40. The variable Ln(Local Tax) consists of 132 data with a maximum value of 17.41; minimum value of 11.89; an average value of 14.18; and a standard deviation of 1.24. The variable Ln(Local Retribution) consists of 132 data with a maximum value of 13.42; a minimum value of 6.81; an average value of 10.05; and standard deviation of 1.29. The next test is the Pearson Correlation Test presented in Table 2.

Table 2. Pearson correlation test

Variable	GRDP_growth rate	Ln (Local Tax)	Ln(Local Retribution)
R value to GRDP_growth rate	1.000000	0.907639	0.913455
Probability	-	0.0000	0.0000

Based on Table 2, the variable Ln (Local Tax) has a probability value close to 0.000 that is less than alpha 0.05 and an r value of 0.907639 so that there is a positive relationship or correlation between economic growth / GRDP rate with local taxes. The variable Ln (Local Retribution) has a probability value close to 0,000 that is less than alpha 0.05 and an r value of 0.913455 so there is a positive relationship or correlation between economic growth/GRDP rate with local retribution.

3.2. Inference Analysis

The inference analysis in this study applies panel data regression analysis. Stages of the procedure are:

1. Model Specifications

The panel data regression model is used to identify the effect of local taxes and retribution on economic growth in Indonesia. There are three possible panel data regression estimation models, namely the Common Effects Model (CEM), the Random Effects Model (REM), and the Fixed Effects Model (FEM). How to get the best model by doing the Chow Test, Hausman Test, and Breusch-Pagan Lagrange Multiplier Test.

2. Model Identification

Chow test was carried out to select the model between FEM and CEM. The results of the Chow Test are presented in Table 3.

Table 3. Chow test

Redundant Fixed Effects Tests
Equation: Untitled
Test cross-section fixed effects

Effects Test	Statistic	d.f.	Prob.
Cross-section F	2.179807	(32,97)	0.0019
Cross-section Chi-square	71.518603	32	0.0001

Table 3 shows the probability value of 0.0001 while the alpha value of 0.05 so reject H0. Therefore, FEM panel regression is better than CEM.

Table 4. Hausman test

Correlated Random Effects - Hausman Test
Equation: Untitled
Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	1.404404	2	0.4955

The Hausman test was carried out to select the model between REM and FEM. Table 4 shows the probability value of 0.4955 while the alpha value of 0.05 so that it does not reject H0. Therefore, REM panel regression is better than FEM. From the results of the Chow test and the Hausman test results obtained that REM> FEM> CEM so that the Breusch-Pagan Lagrange Multiplier Test does not need to be done.

3. Classic Assumtion Test

After getting the REM model as the best model, the next step is to test the classical assumptions. There are four types of classical assumptions that must be fulfilled, namely normality, non-multicollinearity, homoscedasticity, and non-autocorrelation.

Normality Test

Table 5. Normality test

Variable	GRDP_growth rate	Ln(Local Tax)	Ln(Local Retribution)
Jarque-Bera Value	1843.722	5.839981	0.124543
Probability	-	0.053934	0.939628

One way to do a normality test is to compare the probabilities of the Jarque-Bera values. Based on Table 5, it can be seen that the probability value of the variable Ln (Regional Tax) and Ln (Regional Area Retribution) is greater than alpha 0.05. This implies that the results of the assumption of normality are met.

Multicollinearity

<div align="center">Table 6. Multicollinearity</div>

	GRDP_growth rate	Ln(Local Tax)	Ln(Local Retribution)
GRDP_growth rate	1.000000	-0.144219	0.094302
Ln(Local Tax)	-0.144219	1.000000	0.590653
Ln(Local Retribution)	0.094302	0.590653	1.000000

Table 6 shows that there is no multicollinearity because the correlation coefficient between independent variables is less than 0.80. This shows that in the regression model there is no correlation between fellow independent variables. In addition, the correlation coefficient between the dependent variable and the independent variable is less than 0.80. This shows that there is no reciprocal correlation between the independent variable and the dependent variable.

Heteroscedasticity Test

The chosen model is the Random Effects Model (REM), so heteroscedasticity testing can be said to be complete. According to Greene in (Isdiana & Aminata, 2019), the REM method with Generalized Least Square (GLS) can overcome violations of heteroscedasticity.

Autokorelation

One way to test autocorrelation is to look at the Durbin-Watson values. If the Durbin-Watson value is close to 2, then it assumes the absence of autocorrelation assumptions. Durbin-Watson value is 2.082978 so it can be concluded that autocorrelation did not occur.

4. Test the Significance of the Model

<div align="center">Table 7. Random effects model estimation results</div>

Dependent Variable: GRDP_growth rate
Method: Panel EGLS (Cross-section random effects)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	8.762362	3.114900	2.813048	0.0057
LN(Local Tax)	-0.554146	0.266342	-2.080580	0.0395
LN(Local Retribution)	0.452705	0.249066	1.817607	0.0714
Weighted Statistics				
R-squared	0.036766	Mean dependent var		3.617471
Adjusted R-squared	0.021832	S.D. dependent var		2.066881
S.E. of regression	2.044194	Sum squared resid		539.0561
F-statistic	2.461913	Durbin-Watson stat		2.082978
Prob(F-statistic)	0.089270			

Table 7 shows the probability value of the F test statistic of 0.089270 where the probability value is less than alpha 0.10. The conclusion obtained is that the constructed equation model is feasible to use to predict the dependent variable, namely economic growth in Indonesia at a 90 percent confidence level.

In addition, based on the probability value from the t test statistics, it can be concluded that the local tax partially significantly affects economic growth in Indonesia with a probability value of 0.0395 less than alpha 0.05. While local retribution partially significantly affects economic growth in Indonesia with a probability value of 0.0714 less than alpha 0.10. This shows that the significance of the model obtained is good enough so that it can proceed to the analysis and interpretation phase. The equation obtained is presented in Eq.(2):

$$\text{GRDP\_growthrate}_{it} = 8.762 - 0.554 \text{LnLocalTax}_{it} + 0.4527 \text{LnLocalRetribution}_{it} \quad (2)$$

3.3 Model Interpretation
The Effect of Local Taxes on Economic Growth

Based on the results of the analysis, local taxes have a significant negative effect on economic growth in Indonesia. So, the results of the study are not in accordance with the hypotheses and theories where the more local tax increases, the more economic growth increases. However, these results are in line with research conducted by Mononimbar et al. (2017) where local taxes have a significant negative impact on economic growth in South Minahasa Regency. Furthermore, this research is also strengthened by the results of Ibrahim, Asmawati, & Adamy (2019) which states that the growth of local taxes has a negative effect and significant to economic growth in Aceh.

In addition, the results of Mdanat's research in Saragih (2018) found evidence that an increase in tax revenue does not always lead to an increase in economic growth. This can happen because local taxes are used to finance non-productive expenditures. If local taxes are used to finance productive activities or projects, they can have a positive effect on the economic growth of a region or country.

The Effect of Local Retribution on Economic Growth

Based on the analysis, local retribution has a significant positive effect on economic growth in Indonesia. So, the results of the study are in accordance with the hypothesis and theory which states that the more levied the regions, the more economic growth will increase. This result is in line with Edwin (2014); Bratamanggala (2017); Egbunike et al. (2018) where local retribution have a significant positive impact on city economic growth in Lampung Province and Juniati (2018) where local retribution have a significant positive impact on economic growth in the city of Surakarta. Furthermore, this study is also strengthened by the results of Sufardi (2019) which states that regional retribution has a positive and significant effect on economic growth in Sinjai. In terms of quantity, revenues from local retribution are indeed not as big as local taxes. But in terms of quality, it turns out that local retribution have a significant impact in the effort to stimulate economic growth in Indonesia.

4. Conclusion

The purpose of this study is to analyze the effect of local taxes and retribution on economic growth in Indonesia. This is certainly in line with the government's goal where local tax revenues and retribution are expected to increase economic growth. However,

based on inference analysis using Random Effects Model (REM) panel data regression, the results of the study showed rather different things. First, local tax variables have a negative and significant impact on economic growth in Indonesia. Second, local retribution have a positive and significant effect on economic growth in Indonesia. Based on the results of the study, submitted several suggestions that can be used as consideration for the government. First, the government evaluates and develops strategies so that the potential for local tax revenue and retribution in the next period can further enhance economic growth. Secondly, the government provides counseling to the public regarding the benefits derived from the obligation to pay local taxes and retribution.

The writer hopes that the results of the research presented can benefit many parties. First, for the government and related stakeholders as policy makers so that the policies stipulated can encourage economic growth and improve community welfare. Secondly, for academics as additional knowledge about economic growth in Indonesia. Third, for researchers as a reference in the next research improvement and refinement. This study only uses regional income and retribution variables for the period 2014-2017 so that further research can be done by adding other economic indicator variables that affect economic growth and adding to the research time period.

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Authors' Declaration

Authors' contributions and responsibilities

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

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Availability of data and materials

All data are available from the authors.

Competing interests

The authors declare no competing interest.

Additional information

No additional information from the authors

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