

Local Taxes and Pro-cyclical Fiscal Policy in Indonesia

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ABSTRACT

Tax reforms mandated by Law No 28/2009 in Indonesia had encouraged the local governments to increase their local tax capacity. From a total of eleven (11) local taxes, three (3) namely, Street Lighting, Property and Hotel and Restaurant taxes provide the highest contribution to the local revenue. Using the TSLS as a tool to analyse a sample of 38 regencies and municipalities located in the East Java Province of Indonesia, it was found that several regions in Indonesia have pro-cyclical fiscal policies which means that there is a positive effect of local taxes on its economic growth. However, it was noted that the relationship between government spending and economic growth is countercyclical. This is because local government's spending was on unproductive expenditures which do not positively influence the local economy. This paper further notes that not all local taxes could be seen as potentials for local revenue and local economic growth.

Keywords: Local Taxes, Economic Growth, Pro-cyclical Fiscal Policy, Local Tax Capacity, Local Taxing Power.

JEL Classification: H25, E62.

INTRODUCTION

The tax reforms passed in 1998 have inspired the concept of local autonomy and decentralization in Indonesia. Local autonomy is the process where authority is given to the local governments by the central government to manage their local potential resources. This implementation was implanted for the purpose of enabling local governments to achieve their development goals. As a result of the decentralization, policy making no longer rests on the central government. Local governments develop their own policies which suit their own regions. Local governments

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could also take care of their own governments because they are now more aware of their own needs as they are closer to the society thus, more capable of mobilizing local resources and increasing public services for society (Musgrave, 1959; Peterson, 1996; Khusaini, 2006).

As is the case with local autonomy and decentralization, the concept of revenue making also follows and local governments were encouraged to increase their own revenues. In fact, it is the greatest function or authority given by the central government to local governments as a means to serve their own needs. In that regard, local governments have the authority to control their public budgeting (fiscal decentralization) (Soewardi, 2014).

With the mandate of tax reforms made by Law No 28/2009, there is now, more encouragement for local governments to increase their local tax capacity in order to fulfil their own expenditures. This has been confirmed by Todaro (2006) who asserted that in the long run, one of the potentials of tax enforcement is to serve as a means for local governments to finance their own developments.

Several factors can influence tax revenues. They include the fiscal drag or tax system applied, tax liability, change in tax avoidance and tax evasion (Creedy, 2008, p. 1). In Indonesia especially, taxes have a greater potential to support the revenues of government. Ikhsan *et al.*, (2005) have found that there are several reasons that can expand tax capacity in Indonesia. This this includes improving tax administration, increasing tax rates, and expanding tax base.

In total, the output identities, tax and government spending are the components that build up the total aggregate output. New Keynesian economics and real business cycle theory can be used to understand the relationship between fiscal policy behaviors and business cycles. If there is a relationship between a change in fiscal policy on the business cycle, then the New Keynesian Theory is said to have occurred. However, if there is no relationship occurring between a change in fiscal policy on the business cycle, then the Real Business cycle theory which bears government intervention when the economy is limited, is said to have occurred. For policy makers, the correlation of business cycles in each country provides some understanding as to how their economy works and fluctuates (Mansokku, 2013).



Figure 1. Economic Growth and Tax Revenue Growth of Indonesia, 2009 – 2014

The graph presented in Figure 1 shows that the economic growth and tax revenue of Indonesia have the same behavior between 2012 to 2014. However, the behaviour is different during the period between 2009 and 2011. This difference occurred because in 2009, Indonesia

was experiencing a crisis and in 2011, there were new tax reforms. Both of these factors had caused the tax revenue of the central government to decrease.

Table 1. Local Tax Revenue of Regency/Municipalities in East Java, 2012-2014

Local Taxes	2012	2013	2014	2012-2014
Hotel and Restaurant Tax	10,79	10,45	11,47	10,94
Entertainment Tax	1,61	1,39	1,67	1,56
Billboard Tax	5,43	4,13	3,78	4,35
Street Lighting Tax	28,57	25,33	25,52	26,29
Quarrying Exploitation Section C Tax	1,38	1,48	1,77	1,56
Parking Taxes	1,10	1,02	1,37	1,18
Ground Water Tax	0,52	0,70	0,75	0,67
Swallow's Nest Tax	0,01	0,00	0,00	0,01
PBB P2 (Land and Buildings)	28,98	34,12	26,62	29,78
BPHTB (Acquisition Rights of Land and Buildings)	21,60	21,38	27,06	23,66
Total	100,00	100,00	100,00	100,00

(Source: Statistics Indonesia, from 2012 to 2014)

As stated earlier, this paper examines the regencies and municipalities of the East Java Province of Indonesia because this region has the highest economic growth and GDP per capita in Java, more than the economy growth and GDP per capita of the capital city of Jakarta. Although East Java has only 808 million per km of population and Jakarta has a population density of 15.173 million per km, it appears that the smaller population in East Java was able to maximise the economy growth more productively, unlike Jakarta. In addition, of the total of eleven local taxes implemented in East Java, three local taxes stood out to be the highest contribution to local revenues. They are the Street Lighting, Property, and Hotel and Restaurant taxes.

In the context of this study, these three taxes are used as a sample to measure the behaviour of the fiscal policy of all the local taxes and their economic growth, as a means to illustrate an idea of the macroeconomics of the local governments in Indonesia. The aim of this study is to understand more about the business cycle and the relationship between the two variables of government spending on economic growth. The organisation of this paper will be followed by Section 2 which briefly reviews the relationship between fiscal policy and economic growth in some countries. Section 3 presents the research methodology. Section 4 and 5 explain the estimation and analysis of the relationship between local taxes and economic growth by using simultaneity estimation and HP Filter estimation smoothing data. Finally, Section 6 concludes.

LITERATURE REVIEW

The notion of fiscal decentralization imposed by policy makers is a move towards enforcing local taxing power by expanding the tax capacity of local governments. As mandated by Law No 28/2009, local governments in Indonesia now have the authority to increase their tax bases or tax rates in order to get higher revenues for their own development. In economics, effective and efficient tax structures as well as tax administration are important factors for achieving fiscal sustainability and some levels of economic and social development. Effective here means tax revenue ratio to GDP is at least more than average (Sujjapongse, 2005).

In the real business cycle theory, short run economic fluctuations have to be clearly explained with some classical assumptions which are often used to analyse long run economy fluctuations. The assumption of the RBC theory is flexible price in the short run and long run. This contradicts the New Keynesian Economics that bears the market-clearing model borrowed from the RBC, a model that is unable to explain the short run economy, as well as wage and prices (Mankiw, 2007).

There are several studies which have analysed the relationship between fiscal policy and economic growth in other countries but studies which focus on local taxes as a fiscal policy indicator and economic growth indicator is infrequent; more so in the case of Indonesia. In his study, Mansokku (2013) argued that countries which have economic linkage share the same ideology about the building patterns of the business cycle in their respective countries. In addition to this, he also added that fiscal policy behaviour has a positive impact or correlation on the business cycle. Mansokku (2013) found that political variable and fiscal policy do not have a role in the economy variable. Mansokku's (2013) study was aimed at understanding the contributions made by various political dimensions towards changes in the business cycle behaviour of OECD countries. Mansokku's (2013) study examined 18 samples taken from OECD countries during the period from 1950 until 2009. Analysis was done via the Panel data regression including a two-step version taken from the GMM development and the Windmeijer finite-sample correction in standard error. He estimated the trends by using the Kalman Filter.

In another study, Amir *et al.*, (2013) found three significant effects based on the changes in tax revenues to loss in government revenues. They noted that a loss in government revenue will lead to a decline in output which ultimately leads to a worsening condition of the fiscal capacity. The aim of their study was to evaluate the tax condition on macroeconomic variables after tax reforms in Indonesia. The outcome derived was meant to contribute to the policy making scenario which can help to increase tax capacity and fiscal capacity in Indonesia by using the CGE Analysis.

Expanding on this, Talvi and Vegh (2005) used the smoothing data estimation of annual statistic data with Hodrick Prescott Filter (HP Filter) and Standard Deviation estimates to understand the correlation between private consumption, government consumption, government revenue and inflation tax with output. The sample period noted for this study was between 1970 until 1994.

Another study done by Kaminsky *et al.*, (2004) examined the pro-cyclical condition of fiscal policy and GDP. Their study found that a countercyclical fiscal policy will take on good (bad) times by lowering (increasing) government spending and increasing tax. It was noted

as a policy that would help to stabilize the business cycle. Pro-cyclical fiscal policy will take on good (bad) times by increasing (lowering) government spending and lowering (increasing) tax. This policy is taken for the purpose of reinforcing the business cycle. Another policy is the acyclical fiscal policy which is the case of stochastic of government spending and tax rates which do not have any impact on the business cycle.

RESEARCH METHOD

This study was designed with the aim of understanding what lies beneath the relationship between fiscal policy and economic growth in Indonesia. The method used involves two stages of least squares (TSLs) showing simultaneity relationship between local taxes and economic growth. To complete and support the result, the HP Filter estimation was used to analyse data which examines the cyclical relationship between those two variables.

Using a total sample of 38 regencies and municipalities located in East Java during the period of between 2011 to 2014, data were studied for the TSLs estimation and during the period of between 2005 to 2014, data were studied for the HP Filter data estimation. The reason for the different periods of estimation in studying the TSLs estimation was because the study focussed on three local taxes namely Street Lighting, Property, and Hotel and Restaurant Taxes which have the highest contribution to local revenues. In addition, the property taxes used in this study are the local taxes of 2011.

The TSLs model used in this study is as follows:

$$T^{i,t} = \alpha_0 + \alpha_1 Y_{i,t} + \alpha_2 Pop_{i,t} + u_{i,t} \quad (1)$$

$$Y_{i,t} = \beta_0 + \beta_1 T_{i,t} + \beta_2 LI_{i,t} + \beta_3 GSi_{i,t} + ui_{i,t} \quad (2)$$

Where,

T is the Local Tax Revenue of three local taxes as measured for fiscal policy indicators in each region; Y is the economic growth as measured for macroeconomic indicator; Pop is the number of Population in each region; LI is the Local Investment measured by a dummy variable which is 1 for investment availability in each region and 0 for investment unavailability and GS is the Government Spending of each region. The variable of Population and Local Investment were used as control variables in this study in order to avoid some bias estimation while Government Spending is used as another variable from the fiscal policy to support the result.

Simultaneity Relationship of Local Taxes and Economic Growth

This study begins by studying the simultaneity relationship of local taxes and economic growth in 38 regencies and municipalities located in East Java, Indonesia.

Table 2. Simultaneity test.

Model	F-statistic	Significance	Description
First Model	257.4594	0.000000	Significant ($\alpha=1\%$)
Second Model	2.756731	0.000012	Significant ($\alpha=1\%$)

Table 2 shows that in the first model, the F-stat indicates that there is simultaneity relationship between economic growth and population on local tax. Likewise, in the second model, the F-stat also shows that local tax, local investment and government spending have a positive relationship on economic growth. It is found that the Keynesian Aggregate Output identity which argues that tax, investment and government spending are factors that build up the GDP is correct, as seen in the case of Indonesia.

Table 3. Determination Coefficient.

Model	R-square	Adj. R-square
First Model	0.990	0.986
Second Model	0.523	0.334

Table 3 illustrates the determination coefficient and as can be seen in the first model, the adjusted R square is 0.986. This means that 98.6 percent of the local taxes could be explained by the economic growth and population. The balance of the 1.4 percent is dependent on other factors which are not listed in the model. In contrast, the result noted in the second model shows that the R-square is 0.523 percent. This means that 52.3 percent of the local tax, local investment, and government spending influenced the economic growth. The remaining balance is best explained by another factor not listed in the model.

Table 4. Partial Test.

Model	t-statistic	Significance	Description
First Model			
Y	1.699	0.092	Significant ($\alpha=10\%$)
Pop	3.328	0.001	Significant ($\alpha=1\%$)
Second Model			
T	4.116	0.0001	Significant ($\alpha=1\%$)
LI	0.066	0.948	Insignificant ($\alpha=10\%$)
GS	-1.646	0.103	Significant ($\alpha=10\%$)

As can be seen in Table 4, the result indicates that in the first model, economic growth and population have a significant effect on the local tax. However, in the second model, the local tax is the only significant variable that has a positive effect on economic growth while government spending has a negative effect on economic growth. As can be seen, the local investment is the only variable that does not have a significant effect on economic growth. Equation 3 displays the b coefficient of Y, Pop and Constanta fixed effect of each region.

$$T = -47.71759 + 0.047597 Y + 9.843771 Pop + c_{region} + e \quad (3)$$

Constanta fixed effect in each region for the first model shows how great the effect on each region is, and as a result, the minimum value of -4.6. T is noted in the Malang Municipalities. This indicates that the effect of economic growth and local taxes in this region is greater than other regions. In contrast, the Mojokerto Regency has a maximum value of C fixed effect which is 7.6. This shows that the effect of economic growth and population on the local tax is lower than other regions. The Region fixed effect is also included in even numbered columns, as indicated.

$$Y = -34.50334 + 3.678188 T + 0.003437 LI - 0.232411 GS + cregion + e \quad (4)$$

Here, it is seen that the Constanta fixed effect in each region for the second model indicates that Kota Surabaya has the lowest or a minimum value which is -5.88. This indicates that the effect of local tax, local investment and government spending in this region is greater than other regions. In contrast, the Pacitan Municipalities have a maximum value of C fixed effect which is 2.12. This shows that the effect of the independent variables in the second model on economic growth is lower than other regions.

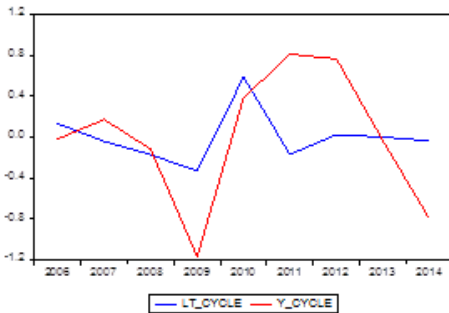


Figure 2. Cycle of Local Tax and Economic Growth.

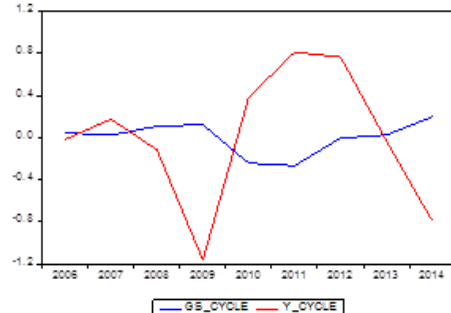


Figure 3. Cycle of Government Spending and Economic Growth

Simultaneity Relationship of Local Taxes and Economic Growth

Here the examination of the relationship between pro-cyclical of fiscal policy and economic growth is discussed.

Figure 2 demonstrates that, in general, during the period between 2006 to 2014, when the local tax decreases, the economic growth increases. However, during the period between 2008 to 2010, there are countercyclical relationships between the local tax and economic growth. This shows that government spending does not have a positive effect on economic growth (counter cyclical).

Contrary to the findings of Bajo-Rubio *et al.*, (2015), the results shown in Figure 3 indicates that when government spending decreases (in general), the economic growth increases and when government spending increases, the economic growth decreases. Bajo Rubio *et al.* (2015) argued that government spending cut has a large negative effect in decreasing the GDP, or that government spending cut could mean that government spending and the GDP have a pro-cyclical relationship, in terms of the business cycle theory.

The relationship between government spending and economic growth and the relationship between local taxes and economic growth have a countercyclical relationship. This happens because in 2008, there were crises occurring in Indonesia and this occurrence had led to a decrease in the economic growth of Indonesia as well.

CONCLUSION

Based on the outcome of this study, it is thus deduced that for the purpose of increasing the fiscal capacity of local governments, local taxing power is the best policy, as seen in the case of the Indonesia economic conditions. The local government of regencies and municipalities in East Java had to push the tax efforts in order to achieve a high economic growth for their region. This can be seen from the TSLS model which shows a positive relationship between economic growth and local taxes although the other factor showed that government spending does not have a positive impact in pushing for economic growth.

Several studies have shown that there are simultaneity relationships between tax and economic growth. Likewise, this study also confirms the finding. The results noted from this study could be used to explain that local government tax could be the best variable that pushes the economy to higher growth. In addition, when the economy is growing fast, so does the local tax. When policy makers of local governments want to push the economy to grow higher, the thing to do is to increase the local tax. The results gained from this study showed that when the local governments increased their own tax capacity, they could also increase their economic growth or their macroeconomic stability.

Another result gained from this study showed that local taxes and economic growth in East Java is pro-cyclical although the relationship between government spending is countercyclical. This occurred because some of the local governments' spending were on unproductive expenditures. Thus, this did not influence the local economy. Due to the different cyclical conditions of local governments' spending and local taxes, it is recommended that local governments take a different policy. When policy makers are inclined towards reinforcing the business cycle then the local governments should consider lowering the local taxes. On the contrary, when local governments are inclined towards stabilizing the business cycle, then the local governments should take countercyclical fiscal policy which is lowering government spending.

Local governments should encourage local taxes by widening the tax base or increasing tax rates in order to increase local tax revenues for financing their own expenditure and also for directing government spending towards a productive capital in order to get a higher local economic activity.

Results from this study could provide directions for local governments in making policies. However, due to the limited sample of data, these result were only found in the regencies and municipalities of East Java. In that regard, future studies are required for the purpose of recognising the relationship between fiscal policy and local macroeconomic conditions.

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