Fiscal Illusion and Budget Performance: Evidence from Indonesia

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Abstract— Decentralization motivates local governments to improve their fiscal capacity through the optimization of local revenues to finance expenditures. However, several studies have shown that fiscal decentralization, which initially aims to improve local autonomy in managing its finances, has resulted in high levels of dependence on the central government. The dependence of local governments on intergovernmental grants from the central government is one of the indications of a fiscal illusion. This study aims to examine the phenomenon of fiscal illusion in local government budget performance in Indonesia. Using multiple regression analysis, the result of this study shows the existence of fiscal illusion in local government budget performance after the implementation of local autonomy and fiscal decentralization. Through revenue enhancement and expenditure manipulation analysis, fiscal illusions exist on incomes and the ratio of intergovernmental grants. Local governments do manipulations in order to get intergovernmental grants in a larger amount.

Keywords— Decentralization, fiscal illusion, local government, intergovernmental grants

I. INTRODUCTION
Decentralization in decision-making has received attention over the decade. Decentralization reflects the economic freedom in which resource allocation decisions and output production are given to each institution [8]. In the context of local government, decentralization is a delegation of authority from the central government to local governments to provide public services. Local governments are given the authority to self-manage their autonomous regions, for example by diversifying sources of revenue to maximize their local own revenues. The assumption is that the greater the authority it has, the more benefits that citizens could gain [1,7,10]. The decentralization policy was accompanied by the several consequences. One of the consequences is central government was obliged to transfer of funds to local governments to fill the fiscal gap. However, there may be risks to be taken if the decentralization process is not done carefully [22]. In its development, several studies have shown that fiscal decentralization, which initially aims to increase local government self-sufficiency in managing its finances, has resulted in high levels of local government dependence on central government [17,18,19]. The dependence of local governments on intergovernmental grants from the central
government is one of the indications of a fiscal illusion [4]. Fiscal illusion arises from imperfect information. Citizens are misperceived about the costs and benefits of services provided by the government. Incomplete information may result in underestimation or overestimation of the value of contributions in the form of intergovernmental grants, or local taxes and retributions than is actually required by the local government [12]. The assumption is, the greater the government's expenditure, the government revenues will increase, for example an increase in tax revenues. This shows a symmetrical relationship between the revenue and government expenditure. In a contrary, fiscal illusion occurs when there is an asymmetrical relationship [4]. This study aims to test whether fiscal illusion occurs on local government in Indonesia. Indonesia began implementing a series of wide-ranging decentralization reforms since 1999 that not only relocated essential government functions to the district level, but also significantly increased the number of local governments [11]. The structure of this study consists of five parts. This study proceeds with a brief discussion of fiscal illusion. Section 2 describes theories related to fiscal illusion. Section 3 shows the data and research methods. The remainders of the study discuss the results and final conclusion.

II. LITERATURE REVIEW

A. Fiscal Illusion

Fiscal illusion is based on the hypothesis that citizens make mistake in perceiving the true amount of the tax burden and the value of benefits they derived from government programs [22, 12]. Carroll [7] believes that the misperceptions are often linked to revenue structures, where the more complex the structure of revenue, the more difficult it is for citizens to build an accurate perception of the costs and benefits of government programs. As a result, citizens may support any changes in government expenditure. Previous studies have suggested that there are at least five sources of fiscal illusion. First, the flypaper effect. The flypaper effect occurs when the effect of intergovernmental grants on local government expenditure is greater than the influence of local own revenue [6, 14]. Second, renter illusion [20]. Third, debt illusion [14]. Another source of fiscal illusion is revenue complexity and revenue elasticity [6].

B. Revenue Enhancement

Law 33/2004 regulates the structure and the use of local government’s revenue. Ideally, all components of local government’s revenue have a positive correlation to local government’s expenditure [6]. If there is a contrary effect, then it can be said there is fiscal illusion [2]. The detection of fiscal illusions in the budget can be done through an analysis of the realization of regional expenditure growth compared to revenue growth [15].

C. Expenditure Manipulation

The analysis of fiscal illusion through expenditure manipulation is based on the budget maximization behavior hypothesis. As Logan and O’Brien [16] said that if every local government is a budget maximizer, they will seek to take advantage from fiscal illusion. Islam [13] shows that not all regions have a maximizer budget behavior. Intergovernmental funds can increase and also decrease local spending. Fiscal illusion can be detected by looking at the contribution of each component of revenue to the budget increase.
The expenditure component is manipulated (eliminated), so it is assumed to be the same (ceteris paribus) with the amount of the local government own revenue [4]. However, if the revenue negatively affects expenditure, it can be said that there has been fiscal illusion [5].

III. METHOD

This study used panel data from 2014 to 2016 of 34 local governments in Indonesia. The data consisted of Local Government Revenue and Expenditure Budget, Gross Domestic Product, and other socio-economic data (population and unemployment rate). The data obtained from the Central Bureau of Statistics. To test the hypothesis, this study used multiple regression analysis.

**Data Analysis**

**Revenue Enhancement**

Prior studies applied standard demand theory with voter-taxpayers assumed to maximize utility from private and (local) public goods subject to a budget constraint [21, 20]. The voter-taxpayer demand for local government provided goods is hypothesized to depend on income, tax-price, and a vector of local taste variables. This study followed Gemmell, Morrisey and Pinar [15] models of fiscal illusion in logarithmic form as follows:

$$\log G = \alpha \log a + \alpha \log Y + \beta \log Pr + \Theta \log N + \delta_1 D + \delta_2 \log V + \delta_3 \log H + \delta_4 \log L + u.$$

Where $G$, $Y$, and $Pr$ are local government expenditure, GDP, and ratio of GDP on local government expenditure respectively. While $N$, $D$, $V$, $H$, $L$ represent population, ratio of revenue to local expenditure, indirect tax, Herfindahl Concentration Tax (HCT), and direct tax. The hypothesis of fiscal illusion through revenue enhancement is accepted if there is a negative relationship between the revenue component ($Y$, $Pr$, $N$, $D$, $V$, $H$, and $L$) on local government expenditure. This study excluded an indirect tax variable ($V$) because in the context of Indonesian government indirect taxation is a component of central government revenue.

**Expenditure Manipulation**

The model of local government expenditure and fiscal illusion in this study followed Dollery and Worthington [5] in logarithmic form as follows:

$$\log E_g = \log \delta_0 + \log \delta_1 (1/P_g') Y + \log \delta_2 (Pr'/Pg') + \log \delta_3 (1/P_g') + \delta_4 U + v,$$

Where:

- $E_g$ : Real per capita federal direct (non-grant) expenditures in the $t$-th period.
- $P_g'$ : Perceived price of grantor (federal) expenditures in the $t$-th period.
- $Y$ : Real per capita national income in the $t$-th period.
- $Pr'$ : Perceived price of recipient (state and local) government expenditures in the $t$-th period.
- $U$ : Unemployment rate as a proxy for institutional constraints in the $t$-th period.
- $(1/P_g') Y$ : Fraction of income directed to grantor government expenditures.
(Pr'/Pg') : Relative perception of grantor and recipient public good prices in the t-th period.

(1/Pg') : Relative importance of federal grants in total federal expenditure in the t-th period.

(1/Pg')Y, (Pr'/Pg'), (1/Pg') are expected to be negative, while unemployment rate expected to be positive. Through expenditure manipulation analysis fiscal illusion occurs when there is a negative relationship between the variables (1 / Pg) Y, (Pr / Pg), and (1 / Pg) on direct (non-grant) expenditures, and if there is a positive relationship between unemployment rate and direct (non-grant) expenditures [5].

IV. RESULTS

Revenue Enhancement
The results of fiscal illusion analysis through revenue enhancement are presented in table 1 (appendix). The value of Adj.R² is 99%, it means that revenue components are able to explain local government expenditure variables, while the remaining 1% explained by other variables. The result shows revenue enhancement variables (GDP and direct taxes) have a positive correlation with the local government expenditure. The ratio of GDP to local government expenditure, population, ratio of revenue to local government expenditure, and HCT has negative effect to local expenditure. At the 5% significance level, the effect of population and HCT is not significant on local government expenditure (Sig> 0.05). The results of this study support previous research by Gemmel, Morrisey and Pinar [15], and Islam [13]. Gemmel, Morrisey and Pinar [15] argue that an expenditure deficit occurs if the revenue-to-expenditure ratio is negative. The asymmetric relationship is an indication of the occurrence of fiscal illusion [3].

Expenditure Manipulation
The results of fiscal illusion analysis through expenditure manipulation are presented in table 2 (appendix). The value of Adj.R² 99% indicates that the fraction of income directed to grantor government expenditures variable explained by relative perception of grantor and recipient public good prices, relative importance of federal grants in total federal expenditure and unemployment rate, while the remaining 1% is explained by other variables. The results showed that the variables (1/Pg')Y and (Pr'/Pg') had a negative effect on the income directed to grantor government expenditures, although at the 5% significance level Pr'/ Pg' was not significant (Sig> 0.05). Variables (1/Pg') Y and U have a positive and significant effect on income directed to grantor government expenditures. The overall result shows that only the (1/Pg') Y variable is not in line with the expected (negative) sign. The result is in line with the research of Dollery and Worthington [5].

V. CONCLUSION AND LIMITATIONS
This research is aim to test whether fiscal illusion occurs in Indonesia local government revenue and expenditure budget. This research is important because fiscal illusion raises a challenge in government. The high government dependence on tax and intergovernmental grants has fueled the development of fiscal illusion [23]. The result of this study shows the existence of fiscal illusion in local government budget performance after the
implementation of local autonomy and fiscal decentralization. Through revenue enhancement and expenditure manipulation analysis, fiscal illusions exist on incomes and the ratio of intergovernmental grants. Local governments do manipulations in order to get intergovernmental grants in a larger amount. Based on the theory of budget maximization, fiscal illusion becomes the momentum for governments to receive intergovernmental grants. This research contributes to the development of the literature of fiscal illusion, and Indonesia local governments in restructuring expenditure and revenue structure. In Indonesia context, the central government can control the intergovernmental grants. Based on Law 33/2004, the general allocation fund (one of the intergovernmental funds) for local government is calculated based on a formula consisting of fiscal gap and allocation basis. That formulation allows government to increase its fiscal capacity and retribution from citizens. Fiscal needs and allocation basis can also be manipulated in expenditure restructuring. Unlike other studies, this study excluded indirect tax variables from the revenue component. The use of other revenue component variables and the extension of the observed time range would be needed to enrich future research in the context of fiscal illusion.

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REFERENCES


APPENDIX

TABLE 1

FISCAL ILLUSION THROUGH REVENUE ENHANCEMENT

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.*</th>
</tr>
</thead>
<tbody>
<tr>
<td>LOGY</td>
<td>0.960784</td>
<td>0.070443</td>
<td>13.63921</td>
<td>0.0000</td>
</tr>
<tr>
<td>PR</td>
<td>-0.027836</td>
<td>0.003946</td>
<td>-7.054227</td>
<td>0.0000</td>
</tr>
<tr>
<td>LOGN</td>
<td>-0.074970</td>
<td>0.243044</td>
<td>-0.308462</td>
<td>0.7588</td>
</tr>
<tr>
<td>LOGD</td>
<td>-0.485158</td>
<td>0.066601</td>
<td>-7.284520</td>
<td>0.0000</td>
</tr>
<tr>
<td>LOGH</td>
<td>-0.000598</td>
<td>0.013983</td>
<td>-0.042772</td>
<td>0.9660</td>
</tr>
<tr>
<td>LOGL</td>
<td>0.302055</td>
<td>0.066719</td>
<td>4.527250</td>
<td>0.0000</td>
</tr>
<tr>
<td>C</td>
<td>-7.421602</td>
<td>2.783659</td>
<td>-2.666132</td>
<td>0.0098</td>
</tr>
</tbody>
</table>

Effects Specification

Cross-section fixed (dummy variables)

<table>
<thead>
<tr>
<th>Statistic</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>R-squared</td>
<td>0.999034</td>
</tr>
<tr>
<td>Adjusted R-squared</td>
<td>0.998406</td>
</tr>
<tr>
<td>S.E. of regression</td>
<td>0.033453</td>
</tr>
<tr>
<td>Sum squared resid</td>
<td>0.067147</td>
</tr>
<tr>
<td>Log likelihood</td>
<td>223.4081</td>
</tr>
<tr>
<td>F-statistic</td>
<td>1590.614</td>
</tr>
<tr>
<td>Prob(F-statistic)</td>
<td>0.000000</td>
</tr>
</tbody>
</table>

*Level of Significance = 5%
TABLE 2
FISCAL ILLUSION THROUGH EXPENDITURE MANIPULATION

Dependent Variable: LOGEg
Method: Panel Least Squares
Date: 02/23/18   Time: 20:36
Sample: 2014 2016
Periods included: 3
Cross-sections included: 34
Total panel (unbalanced) observations: 98

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.*</th>
</tr>
</thead>
<tbody>
<tr>
<td>LOG(1/Pg')Y</td>
<td>-0.310948</td>
<td>0.066182</td>
<td>-4.698359</td>
<td>0.0000</td>
</tr>
<tr>
<td>LOG(Pr'/Pg')</td>
<td>-0.227005</td>
<td>0.203142</td>
<td>-1.117470</td>
<td>0.2682</td>
</tr>
<tr>
<td>LOG(1/Pg')</td>
<td>0.303477</td>
<td>0.064696</td>
<td>4.690830</td>
<td>0.0000</td>
</tr>
<tr>
<td>U</td>
<td>0.014418</td>
<td>0.007410</td>
<td>1.945591</td>
<td>0.0564</td>
</tr>
<tr>
<td>C</td>
<td>3.046045</td>
<td>1.867984</td>
<td>1.630659</td>
<td>0.1082</td>
</tr>
</tbody>
</table>

Effects Specification

Cross-section fixed (dummy variables)

| R-squared       | 0.993940 | Mean dependent var | 12.18153 |
| Adjusted R-squared | 0.990202 | S.D. dependent var | 0.504132 |
| S.E. of regression | 0.049900 | Akaike info criterion | -2.872685 |
| Sum squared resid | 0.149404 | Schwarz criterion | -1.870350 |
| Log likelihood   | 178.7616 | Hannan-Quinn criter. | -2.467261 |
| F-statistic      | 265.9556 | Durbin-Watson stat | 2.359921 |
| Prob(F-statistic)| 0.000000 |

*Level of Significance = 5%