THE EFFECT OF VILLAGE FUNDS ALLOCATION ON POVERTY IN INDONESIA

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Abstract

The allocation of village funds are needed because of the decentralization and delegation of authority of village autonomy is to provide public services and the implementation of village governance in accordance with regulations-regulations applicable. This allocation is expected to improve development and socio-economic progress of society include poverty. The purpose of this study is to examine the effect of the allocation of village funds on the level of poverty. The variables used are village funds allocation and the number of poor peoples. Data used time-series and cross-sectional data from all districts and cities in Indonesia during the period 2012 to 2015. Used purposive sampling, this research samples is 409 districts and cities from total 516 districts and cities in Indonesia. The statistical method used is quantitative. Chow test, Hausman test, and Lagrange multiplier test in this study showed that fixed effect is the best models in regression. The data used in this research is processed using Eviews 9 to get the result of linear regressions. The result showed that village funds allocation has an effect on poverty but the effect insignificant.

Keywords: Decentralization, village funds, village, district, poverty

INTRODUCTION

According to Faguet (2000), decentralization is giving certain function performed by central government in all sectors including administration, politics, and economy required by the independent local government within the scope of legal functional and geographical. Based on the Law No. 12 of 2008 concerning the amendments of Law No. 32 Year 2004 on Regional Government article 1, paragraph 7, and Law No. 33 of 2004 on Financial Balance between Central and Local Government article 1, paragraph 8, "Decentralization is giving authority performed by the central government to autonomous regions to organize and manage the system of government in the Republic of Indonesia". One of the important aspects in the decentralization is the issue of fiscal decentralization.

Liu (2007) and Syahrudin (2006) have proved that fiscal decentralization provides economic benefits for countries such as the improvement of growth rate, effectiveness, and efficiency of resource management and public participation in decision-making (Liu, 2007). Therefore, fiscal decentralization is a core component of decentralization because sufficient financial resources are required to run the necessary authority that has been transferred (Moisiu, 2013). Although there are several ways to describe the process of fiscal decentralization, its essence lies in two related processes both fiscal representation and delegation of authority (Martinez-Vazquez and McNab, 2001).

Governments overcome the problems arising from the fiscal decentralization by issuing Law No. 25 Year 1999 on Financial Balance between the Central Government and Local Government. Fund balance consists of General Allocation Fund, Special Allocation Fund, and revenue-sharing funds (DBH). Balance Funds received by the District is allocated to the village for 10% after being reduced by Special Allocation Fund. According to the Indonesian Government Regulation No. 72 Year 2005 on the village, the village fund allocation is part of the financial balance of central and local received by the districts/cities to the village at least 10% (ten percent), which is distributed to village proportionally. Based on decree of the Minister of Home Affairs Number 37 Year 2007 regarding Guidelines for Financial Management of Rural, the allocation of village funds derives from the budget of the district/city sourced from the financial balance of central and local received by the district/city to the village at least 10% (ten percent).

The targets of the village fund allocation are the whole village within the district/city. 30% of the village funds is allocated to support the implementation of village governance and strengthening the institutional role of rural communities, and 70% is allocated to support the empowerment of rural communities. The village fund allocation is expected to improve the welfare of the community in the forms of education, health, economics, and so on.

Many indicators are used by previous researchers to measure the improvements in the field of education, health and economic of the society. They include human development index, Gini index, and poverty index. The research on the effects of the Economy Village Allocation Fund has been done by Prasetyanto (2012). His research has found that village Fund Allocation is able to improve fiscal performance and the regional economy, reduce the number of poor people and increase the gross regional domestic product of agricultural sector. Moreover, research conducted Suwandi (2013) which utilizes path analysis had found that there is an effect of fiscal decentralization on poverty reduction in Papua.

Based on the explanation above, this study will examine the effect of village funds allocation on poverty.

LITERATURE REVIEW

Village Funds

According to the Indonesian Government Regulation No. 72 Year 2005 on the village, the village fund allocation is part of the financial balance of central and local received by the regencies/ cities to the village at least 10% (ten percent), which is distributed to village proportionally. Based on decree of the Minister of Home Affairs Number 37 Year 2007 regarding Guidelines for Financial Management of Rural, the allocation of village funds derives from the budget of the district / city sourced from the financial balance of central and local received by the district / city to the village at least 10% (ten percent).

Village Fund Allocation (ADD) According to Law No. 6 of 2014 On The village is part of the balance of funds received by the district/city at least 10% (ten percent) in the budget revenue and expenditure net of special allocation funds

Table 1. Previous Studies

No.	Researcher	Year	Variables Studied	Results
1	Suwandi	2013	Regional Owned-Source of Revenue (PAD), Specific Allocation Fund (DAK), General Allocation Fund (DAU), Tax- and Non-Tax-Based on Revenue Sharing Funds, Gross Domestic Regional Product, Employment Index, Poverty Index, Human Development Index, and Special Autonomy Fund	Fiscal decentralization has an effect of reducing poverty in Papua.
2	Prasetyanto	2012	ADD, GDP, Poverty	ADD able to improve fiscal performance and the regional economy, able to reduce poverty and increase the regional gross domestic product of agriculture sector.
3	Hong	2010	Fiscal Policy, Debt, GDP	fiscal policy has an important role both in economic growth and to reduce poverty at the national level.
4	Sari, Dini Gemala	2010	Village funds allocation, Village development	there is a significant relationship between the village allocation fund with village development in Stabat, Langkat district and there is a positive public perception of the benefits of the use of Village Allocation Fund with village development in Stabat, Langkat.

Poverty

Poverty is the abilities or resources which have by households or individuals today to meet their needs (Coudouel et al., 2002). World Bank (World Bank, 2008) categorizes poverty into extreme poverty which is living less than US$ 1.25 per day and moderate poverty which is living less than US$ 2 per day. While, according to Indonesian Statistic Center, poverty defined as lack of economic ability to fulfill basic needs. So, poor people is the people who have an average of monthly expenses below the poverty line (Statistics Indonesia, 2015).

Poverty can be divided into two categories based on the characteristics, such as absolute poverty and relative poverty (Todaro, 2012). While Sachs (2005) divided poverty into 3 classifications, such as extreme (absolute), moderate and relative.

Indonesia Statistic Center measured the poverty based on the basic needs approach. With this approach, poverty is seen as an economic inability to meet the basic needs of food and non-food which is measured from the expenditure side. So the Poor is the population had an average monthly per capita expenditure below the poverty line. Food poverty line is the value of basic food consumption expenditure is equivalent to 2.100 kcal energy per capita per day. The non-food poverty line is the amount of money to meets the minimum needs of nonfood items such as education, health, transportation, etc.

Previous Study

A number of previous studies underlying this research are described as shown in table 1.

RESEARCH METHOD

The population observed in this study are all districts and cities in Indonesia. This study used purposive sampling method (Ghozali, 2012), with selected samples have a complete data of the allocation of village funds (ADD) and the number of poor peoples (JPM) during the period 2012 to 2015.

The data source of this research is secondary data. This study uses panel data (combination of cross section data and time series). Softcopy of village funds allocation and the number of poor people or poverty data obtained from the official website of the Central Bureau of Statistics (www.bps.go.id). In Indonesia total district and cities is 512, and samples of this research that have complete data during period 2012 to 2015 are 409 districts and cities. Methods of data analysis performed in this study are as follows: estimation regression models of panel data, determine the best regression models, assumption test, and hypothesis test. The data used in this research is processed using Eviews 9 to get the result of linear regressions.

Estimation regressions models

There are several methods used in estimating the regression models with panel data (Widarjono, 2009):

1. Pooling least square (common effect models)
   According to Widarjono (2009), this model is the simplest models to estimate the panel data. Common effect regresses the data by combining time series and cross-section data by using the OLS method (estimated common effect). This approach does not pay attention to individual dimensions and time. In this models, it is assumed that the inter-individual behavioral data same with time. A disadvantage of this method is the difference between individuals and across time cannot be detected.
   The equation for common effect models according to Gujarati (2012):

   $$Y_{it} = \alpha + \beta^1 X_{it} + E_{it}$$

   where i indicates the number of subjects (cross-section) and t indicates a period of time (time series).
2. Fixed effect models
   Fixed effect models are models with different intercept for each subject (cross-section), but the slope of each subject does not change over time (Gujarati, 2012). This model assumes that the intercept is different every subject while the slope remains the same between subjects. Dummy variables are used to distinguish the subjects (Kuncoro, 2012). This model is often called a model Least Square Dummy Variables (LSDV). The equation for fixed effect models according to Gujarati (2012):

$Y_{it} = \alpha_i + \beta^1 X_{it} + E_{it}$

where i indicates the number of subjects (cross section), t indicates a period of time (time series), and E_{it} indicates overall residual which is a combination of cross section and time series residual.

3. Random effect models
   Random effect models estimate the residual variable panel data suspected of having links across time and between subjects. Random effect models used to overcome the disadvantages of the fixed effect model that uses a dummy variable (Widarjono, 2009). The equation for random effect models according to Gujarati (2012):

   $Y_{it} = \alpha + \beta^1 X_{it} + U_i + E_{it}$

   where i indicates the number of subjects (cross section), t indicates a period of time (time series), U_i indicates individually residual which is i^{th} random characteristic from unit observation and fixed all the time, and E_{it} indicates overall residual which is a combination of cross section and time series residual.

Determine the best regressions models

Three estimation techniques used to determine the best regressions models. Three techniques used are:

1. Chow test
   Chow test is a test to compares the common effect and fixed effect models (Widarjono, 2009). Hypothesis formed in this test is:
   H_0: Common effect models is used
   H_1: Fixed effect models is used
   H_0 rejected if value of Cross-section Chi-square < α. H_0 accepted if probability value of Cross-section Chi-square > α. The value of α used 0.05.
2. Hausman test
   Hausman test compares fixed effect model to random effect models in determining the best regressions models of panel data (Gujarati, 2012). Hypothesis formed in this test is:
   H_0: Random effect models is used
   H_1: Fixed effect models is used
   H_0 rejected if probability value of Cross-section Random < α. H_0 accepted if probability value of Cross-section Random < α. The value of α used 0.05.
3. Lagrange Multiplier test (LM test)
   LM test compares common effect models to random effect models in determining the best regressions models of panel data. Hypothesis formed in this test is:
   H_0: Common effect models is used
   H_1: Random effect models is used

H_0 rejected if probability value of Breusch-Pagan < α. H_0 accepted if probability value of Breusch-Pagan < α. The value of α used 0.05.

Classical assumptions test

Panel data is a regression that employs both time series and cross-sectional data (Widarjono, 2009). According Baltagi (1995; pp. 4-7), the advantages of using panel data in regression analysis: overcoming the problem of individual heterogeneity, provide more informative data, reducing the variable collinearity problem, resolve the problem of omitted variable, produce a degree of freedom greater, studying dynamics of adjustment, can identify and quantify the effect which can not be done by the analysis of pure time series or cross-section, can reduce bias in the estimation because quite a lot of data. According to Gujarati (2012), the multicollinearity problem is less severe in panel data methods. Based on the description above, classical assumptions used in the study is the autocorrelation and heteroskedasticity test.

Hypothesis test

A test statistic is a standardized value that is calculated from sample data during a hypothesis test. This test used to determine whether to reject the null hypothesis, compares the data with the null hypothesis that we expected, and used to calculate the p-value. When the data show strong evidence against the assumptions in the null hypothesis, the magnitude of the test statistic becomes large and the test's p-value can become small enough to reject the null hypothesis.

This study used t tests to determine whether to reject or accept the null hypothesis. The hypothesis is shown as below:

H_0: village funds allocation have an effect on poverty

H_1: village funds allocation have not an effect on poverty

RESULTS AND DISCUSSION

Regression models of panel data can be done by pooling least square (common effect models), fixed effect models, and random effect models. The best models determine with Chow test, Hausman test, and Lagrange Multiplier test as shown in table 2.

Results of Chow test showed that the probability value of Cross-section Chi-square is 0.0000 or < 0.05, it means Fixed Effect Models is better than Common Effect Models. Results of Hausman test showed that the probability value of Cross-section Random is 0.0000 or < 0.05, it means Fixed Effect Models is better than Random Effect Models. Results of Lagrange Multiplier test showed that the probability value of Breusch-Pagan is 0.0000 or < 0.05, it means Random Effect Models is better than Common Effect Models. According to the results of Chow test, Hausman test, and Lagrange Multiplier test, the best regression models to used is Fixed Effect Models.

Table 2. The Best Regressions Models

No.	Test Name	Hypothesis	Test Results	Conclusions
1	Chow	H_0: Common Effect Models H_1: Fixed Effect Models H_0 Rejected if probability value of Cross-section Chi-square < 0.05	The probability value of Cross-section Chi-square is 0.0000 (<0.05)	Fixed Effect Models is used
2	Hausman	H_0: Random Effect Models H_1: Fixed Effect Models H_0 Rejected if probability value of Cross-section Random < 0.05	The probability value of Cross-section Random is 0.0000 (<0.05)	Fixed Effect Models is used
3	Lagrange Multiplier	H_0: Common Effect Models H_1: Random Effect Models H_0 Rejected if probability value of Breusch-Pagan < 0.05	The probability value of Breusch-Pagan is 0.0000 (<0.05)	Random Effect Models is used

Classical assumption test used in this panel data analysis is autocorrelation with Durbin-Watson test (DW test) and heteroskedasticity with the glejser test. The results of classical assumption test shown in table 3.

Table 3. Classical assumption test

No.	Test Name	Hypothesis	Test Results	Conclusions
1	Autocorrelation Sample: 409 Variable: 2 dL table: 1.83301 dU table: 1.84279 d stats : 1.874915 4 – dL : 2.15599	d < dL : positive autocorrelation d > (4 – dL) : negative correlation dU < d < (4 – dL) : no autocorrelation dL < d < dU or (4 – dU) : undefined	dU < d < (4 – dL): 1.84279 < 1.874915 < 2.15599	Not found autocorrelation
2	Heteroskedasticity with Glejser test	H_0 : homoskedasticity H_1 : heteroskedasticity H_0 Rejected if probability value of ADD variable <0.05	probability value of ADD variable is 0.5730 (α >0.05)	Homoskedasticity

Results of DW test above showed that the value of d statistic (1.874915) is greater than dU table value (1.84279) and smaller than 4 – dL table value (2.15599). It means that

the panel data free from autocorrelation problem. Statistic output of the autocorrelation test shown in appendix 7.

Results of the glejser test above showed that the probability value of ADD variable (0.5730) is greater than α (0.05). it means that the ADD variable has homoskedasticity. Statistic output of the heteroskedasticity test shown in appendix 8.

According to appendix 2, the results of partial regression test (t-test) showed that the t value is -0.459360 and the level of significant are 0.6461 (> 0.05), it means that Village funds allocation (ADD) have a negative effect on the level of poverty (JPM) and the effect insignificant. This study has the same result from the previous study in table 1 that ADD can reduce poverty.

CONCLUSION, SUGGESTION, AND RECOMMENDATION

This study has the same result from the previous study that village funds allocation have a negative effect on the level of poverty. The increases of village allocation funds will reduce the level of poverty though insignificant. At last, the suggestion and recommendation for the next research are: more variables are used in the next research according to explain about poverty, and village funds allocation management should be investigated first so the effect of village allocation funds has the best result.

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APPENDIXES

Appendix 1. Eviews Output: Common Models Effect

Dependent Variable: JPM?
Method: Pooled Least Squares
Date: 04/10/17 Time: 23:41
Sample: 2012 2015
Included observations: 4
Cross-sections included: 409
Total pool (balanced) observations: 1636

Variable	Coefficient	Std. Error	t-Statistic	Prob.
ADD?	1.23E-06	5.29E-08	23.24233	0.0000

R-squared	-0.340652	Mean dependent var	60.67207
Adjusted R-squared	-0.340652	S.D. dependent var	68.56034
S.E. of regression	79.38364	Akaike info criterion	11.58707
Sum squared resid	10303381	Schwarz criterion	11.59037
Log likelihood	-9477.225	Hannan-Quinn criter.	11.58830
Durbin-Watson stat	0.065990		

Appendix 2. Eviews Output: Fixed Effect Models

Dependent Variable: JPM?
Method: Pooled Least Squares
Date: 04/10/17 Time: 23:47
Sample: 2012 2015
Included observations: 4
Cross-sections included: 409
Total pool (balanced) observations: 1636

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	60.75243	0.205042	296.2932	0.0000
ADD?	-3.86E-09	8.41E-09	-0.459360	0.6461

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.997015	Mean dependent var	60.67207
Adjusted R-squared	0.996019	S.D. dependent var	68.56034
S.E. of regression	4.325915	Akaike info criterion	5.979850
Sum squared resid	22942.80	Schwarz criterion	7.333153
Log likelihood	-4481.517	Hannan-Quinn criter.	6.481815
F-statistic	1001.119	Durbin-Watson stat	1.874915
Prob(F-statistic)	0.000000		

Appendix 3. Eviews Output: Random Effect Models

Dependent Variable: JPM?
Method: Pooled EGLS (Cross-section random effects)
Date: 04/10/17 Time: 23:52
Sample: 2012 2015
Included observations: 4
Cross-sections included: 409
Total pool (balanced) observations: 1636
Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	60.69410	3.309504	18.33933	0.0000
ADD?	-1.06E-09	8.39E-09	-0.126290	0.8995

Appendix 4. Eviews Output: Chow Test

Redundant Fixed Effects Tests
Pool: PANEL
Test cross-section fixed effects

Effects Test	Statistic	d.f.	Prob.
Cross-section F	961.381148	(408,1226)	0.0000
Cross-section Chi-square	9441.759665	408	0.0000

Cross-section fixed effects test equation:
Dependent Variable: JPM?
Method: Panel Least Squares
Date: 04/11/17 Time: 00:00
Sample: 2012 2015
Included observations: 4
Cross-sections included: 409
Total pool (balanced) observations: 1636

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	51.18040	2.003664	25.54341	0.0000
ADD?	4.56E-07	5.40E-08	8.455046	0.0000

R-squared	0.041916	Mean dependent var	60.67207
Adjusted R-squared	0.041330	S.D. dependent var	68.56034
S.E. of regression	67.12859	Akaike info criterion	11.25232
Sum squared resid	7363209.	Schwarz criterion	11.25892
Log likelihood	-9202.397	Hannan-Quinn criter.	11.25477
F-statistic	71.48780	Durbin-Watson stat	0.018159
Prob(F-statistic)	0.000000		

Appendix 5. Eviews Output: Hausman Test

Correlated Random Effects - Hausman Test
Pool: PANEL
Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	22.005007	1	0.0000

Cross-section random effects test comparisons:

Variable	Fixed	Random	Var(Diff.)	Prob.
ADD?	-0.000000	-0.000000	0.000000	0.0000

Cross-section random effects test equation:
Dependent Variable: JPM?
Method: Panel Least Squares
Date: 04/11/17 Time: 00:06
Sample: 2012 2015
Included observations: 4
Cross-sections included: 409
Total pool (balanced) observations: 1636

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	60.75243	0.205042	296.2932	0.0000
ADD?	-3.86E-09	8.41E-09	-0.459360	0.6461

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.997015	Mean dependent var	60.67207
Adjusted R-squared	0.996019	S.D. dependent var	68.56034
S.E. of regression	4.325915	Akaike info criterion	5.979850
Sum squared resid	22942.80	Schwarz criterion	7.333153
Log likelihood	-4481.517	Hannan-Quinn criter.	6.481815
F-statistic	1001.119	Durbin-Watson stat	1.874915
Prob(F-statistic)	0.000000		

Appendix 6. Eviews Output: Lagrange Multiplier Test

Lagrange multiplier (LM) test for panel data
Date: 04/11/17 Time: 00:04
Sample: 2012 2015
Total panel observations: 1636
Probability in ()

Null (no rand. effect) Alternative	Cross-section One-sided	Period One-sided	Both
Breusch-Pagan	154.6835	1.915769	156.5992
	(0.0000)	(0.1663)	(0.0000)
Honda	12.43718	-1.384113	7.815699
	(0.0000)	(0.9168)	(0.0000)
King-Wu	12.43718	-1.384113	-0.316472
	(0.0000)	(0.9168)	(0.6242)
GHM	--	--	154.6835
	--	--	(0.0000)

Appendix 7. Eviews Output: Classical Assumption Test of Autocorrelation (Durbin Watson)

Dependent Variable: JPM
Method: Panel Least Squares
Date: 04/12/17 Time: 21:56
Sample: 2012 2015
Periods included: 4
Cross-sections included: 409
Total panel (balanced) observations: 1636

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	60.75243	0.205042	296.2932	0.0000
ADD	-3.86E-09	8.41E-09	-0.459360	0.6461

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.997015	Mean dependent var	60.67207
Adjusted R-squared	0.996019	S.D. dependent var	68.56034
S.E. of regression	4.325915	Akaike info criterion	5.979850
Sum squared resid	22942.80	Schwarz criterion	7.333153
Log likelihood	-4481.517	Hannan-Quinn criter.	6.481815
F-statistic	1001.119	Durbin-Watson stat	1.874915
Prob(F-statistic)	0.000000		

Appendix 8. Eviews Output: Classical Assumption Test of Heteroskedasticity (Glejser)

Dependent Variable: RESABS
Method: Panel Least Squares
Date: 04/12/17 Time: 22:10
Sample: 2012 2015
Periods included: 4
Cross-sections included: 409
Total panel (balanced) observations: 1636

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	2.233225	0.078771	28.35079	0.0000
ADD	1.82E-09	3.23E-09	0.563813	0.5730

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.766547	Mean dependent var	2.271117
Adjusted R-squared	0.688666	S.D. dependent var	2.978451
S.E. of regression	1.661895	Akaike info criterion	4.066519
Sum squared resid	3386.083	Schwarz criterion	5.419822
Log likelihood	-2916.413	Hannan-Quinn criter.	4.568484
F-statistic	9.842535	Durbin-Watson stat	2.570414
Prob(F-statistic)	0.000000		