Deconcentration Funds: Redistribution and Economic Growth in Indonesian Provinces

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ABSTRACT

Indonesia has imposed fiscal decentralization since more than a decade ago. The objective of intergovernmental transfer between central government and local government is to enhance fiscal equality. Since the literatures have shown no conclusive remarks regarding the welfare effects of fiscal decentralization, we would like to find new evidence on deconcentration funds to economic welfare in Indonesia. Fiscal decentralization funds which include General Allocation Funds, Special Allocation Funds, and Revenue Sharing Funds are the largest sources of revenue in almost every region in Indonesia which are the proportion of those funds are different between regions. The difference in proportion is intended as one of them is to reduce fiscal inequality which results in an economic imbalance between regions. Using gross regional domestic product as proxy of economic growth, this paper highlight the difference in proportion of each decentralization funds to equalization. This study aims to determine the effect of the balancing fund element on fiscal decentralization on economic growth in each region which is shown through GRDP. This study uses panel data on 33 provinces in the period 2009-2014. The analytical tool used is a panel data regression model with Generalized Least Squares (GLS) estimator.

Keywords: decentralization, deconcentration funds, economic growth

INTRODUCTION

Developing countries implemented fiscal decentralization to increase administrative, fiscal and political power from central government to the local government. The aim of the program is to empower local government in providing services to the citizen. The theorem of fiscal decentralization itself stated that public goods provision is better be taken care by local government(Oates, 1972). The condition when the regions or provinces are very heterogeneous make decentralizing public goods is welfare-enhancing. Local governments assumed to have more knowledge on what local citizens need. An example is when we take one condition in certain island in Indonesia, Java, Kalimantan, Sumatera, Sulawesi, Papua have different important needs and those needs are typically different. Fiscal decentralization can close that gap. The budget can be more accurately executed to those local needs. That’s why fiscal decentralization is something that is very important to achieve social welfare.

The history of economic inequalities and disparities among regions in Indonesia become the main background on the idea of redistribution. There are several phases regarding to income disparities between provinces in Indonesia (Kim & Samudro, 2017).

Those phases are; first the period of 1983-1996, regional disparity based on the gross regional domestic product (GRDP) per capita was on a downfall trend. The second phase was at 1997-1999 when the economic crisis hit very hard to Indonesia followed by political crisis as the new order's Soeharto was fallen. The disparity increased drastically at that time.

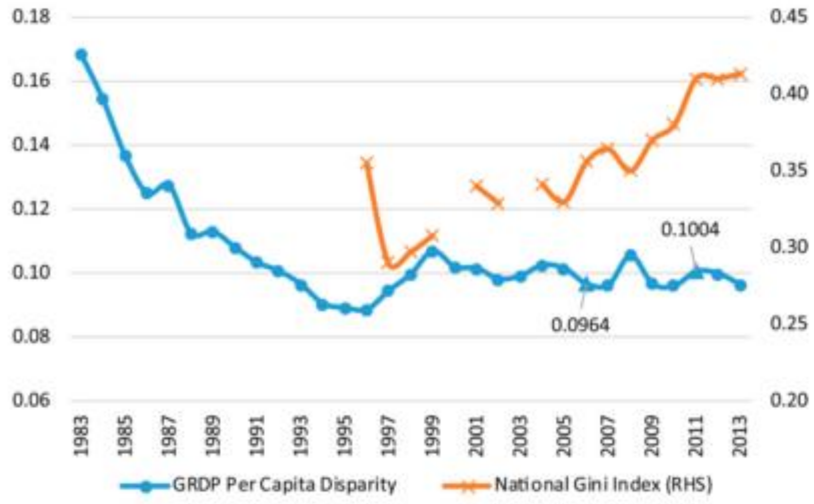

FIGURE 1. Regional disparity and income inequality
Source: Kim and Samudro (2017)

After the fall of Soeharto, government began to implement the idea of fiscal decentralization and regional autonomy. Indonesia entered a new era of decentralization in a very fast period (Alm, Aten, &Bahl, 2001). This is indicated by the formulation and enactment of Law No. 22 of 1999 concerning Regional Government and Law No. 25 of 1999 concerning Central and Regional Financial Balance in a very short period after the end of the New Order era. The Act was implemented effectively from January 1, 2001. In 2004 improvements were made with the issuance of Law Number 32 of 2004 concerning Regional Government and Law Number 33 of 2004 concerning the Financial Balance of the Central Government and Regional Governments. With the enactment of the law, it has changed the development paradigm including in terms of relations between levels of government. Local governments are given greater flexibility to organize and manage their own household affairs by not being heavily interfered with by the central government. This policy was taken in order to reduce inequality in the sources of funding between central and local government. Figure 1 shows that despite the fact that the trend of inequality is in a downward trend, but there are any fluctuations during that period.

Fiscal decentralization is more specific concept from fiscal federalism. Musgrave (1959) stated that fiscal federalism represents the vertical financial structure of public sector. Those include revenue and expenditure assignment among different levels of government and a system of intergovernmental transfers. The theory of fiscal federalism comes with three major objectives, that are to create efficiency in economy, to strengthen stability in macroeconomy and to enhance income redistribution to society. The classic theory of Musgrave (1959) also divide the responsibility between federal government and subnational (regional and local) authorities. The federal government have responsibility for macroeconomic stabilization and income redistribution, whilst local government responsible to make sure of the efficiency in providing public goods within their jurisdictions. Local government is closer to citizens so they have better information on people preferences. Thus, fiscal decentralization is a mechanism of fiscal federalization on a matter that there should be certain level of government in vertical financial structure (Yushkov, 2015).

The provinces or regions in the country usualy have the potential to generate their own income. There are provinces who have great amount of gold mining or oil. So they can generate big money from the activity inside their area. On the other hand, there are provinces who have only few source of income.An overview of the per capita income inequality in Indonesia is shown in the following figure:

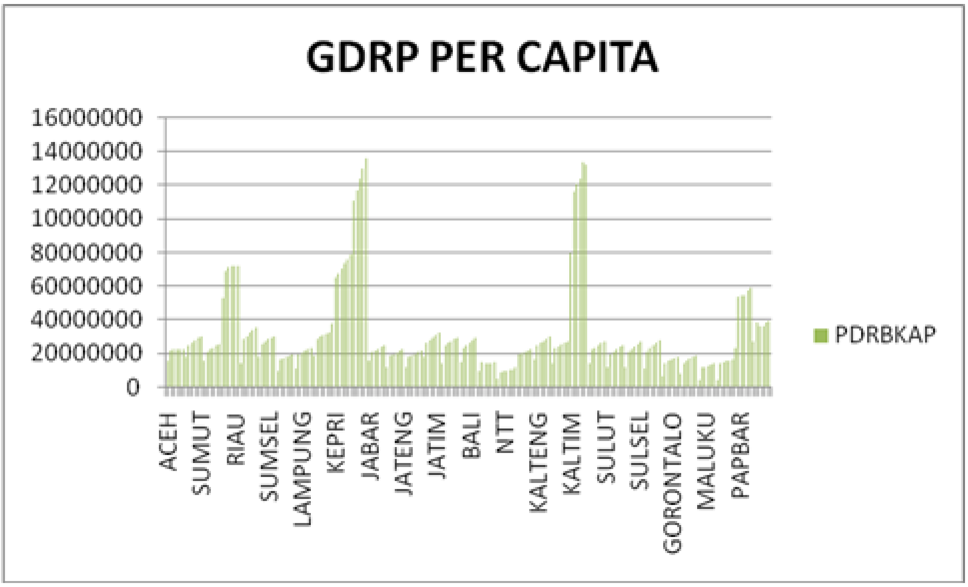

FIGURE 2. GRDP per capita in Indonesian provinces year 2009-2014
Source: BadanPusatStatistik (Central Bureau of Statistics)

From the figure above, we can see a quite striking gap between per capita GRDP of rich provinces such as East Kalimantan and GRDP per capita in East Nusa Tenggara. To overcome the problem of fiscal inequality and the need for substantial regional funding, the government provides balancing funds in the form of general allocation funds, revenue sharing funds and special allocation funds.

In general, national development in developing countries is focused on economic development in the context of economic growth efforts. Economic growth is closely related to the increase in the production of goods and services, which among others is measured by the magnitude of the Gross Domestic Product (GDP) at the national level and the Gross Regional Domestic Product (GRDP) at the provincial and district / city levels. Economic growth in relation to economic development becomes important as a benchmark for the successful implementation of fiscal decentralization. It has become a common perception of whether or not an area can be seen from the level of economic growth. The higher the economic growth, the more advanced an area is, although on the other hand fiscal decentralization can be the cause of increasing income disparity so that the central government is responsible for redistribution by controlling the distribution of taxes and development expenditures so that disparities can be reduced (Prud'homme, 1995).

To overcome the problem of disparity, the government need to redistribute the economy among regions. The mechanism usually with providing intergovernmental transfers to all regions but with different amount of fund allocation. Article 1 point (h) Law No. 32 of 2004 on Regional Government and Law No. 33 of 2004 on Fiscal Balance between Central Government and Regional Government imply that financing the governance based on decentralization principles is conducted based on Regional Revenue and Expenditure Budget (APBD). The regional government is provided with the authority to collect taxes/levies and to manage its own natural resources. The financial resources for the local regions consist of Own-Source Revenue (PAD), Fiscal Balance/Revenue Sharing Fund (DBH), General Allocation Fund (DAU) and Special Allocation Fund (DAK). Those last three are the deconcentration fund received by local government provided by central government.

Among the types of deconcentration fund, the general allocation fund become the most significant for almost all local government in Indonesia. Revenue sharing only matters for few provinces or districts, while special allocation fund only applies to region with significant forestry activities. this shows that the local government still has a high dependence on the supply of funds from the central government. The dependency is certainly not good because one of the aim of the implementation of fiscal decentralization aside from reducing disparity is to increase regional empowerment.

LITERATURE REVIEW

Literature Review

The system for providing public services is not a trivial thing and normally most of countries believe that creating social welfare is the goal to achieve. Unfortunately, it is not easyto achieve such such goals especially in dealing with maintaining vertical and horizontal balances. Many literatures focusing on the effect of implementing fiscal decentralization to economic improvement are still ambiguous. Earlier researches, especially theoretical one have shown that fiscal decentralization would create positive economic performance to the countries. But along the time there are empirical works with results negating the positive results. This literature review section will overiew several literatures regarding this problem.

Theoretically, Oates (1972) set down a theoretical foundation in analyzing decentralization. His work also highlighted the trade-off beween centralized and decentralized government in providing public goods. With the condition of regions are very heterogeneous, decentralized type of government will improve in providing public goods and maximizing social welfare. A more recent theoretical research stated that decentralization spurs yardstick and competition among regions or local governments. Those competitions will create accountability and lessen asymmetric information (Besley & Case, 1995). The more centralized government tend to lead to less accurate policy to the regions and local society because of asymmetric information. Thus, asymmetric information results in inefficient government performance. Political background of the country also played a significant role on fiscal decentralization. Tanzi (1996) argue that in a non-democratic country, the assumption of local government will respond to local preferences of the society is not happening. Fiscal decentralization may lead to misallocation of resources.

There is theoretical link between decentralization and regional income inequalities. The two frameworks of this work divided itu pure fiscal decentralization and non-pure fiscal decentralization (Bonet, 2006). The explanation of pure and non-pure fiscal decentralization is as follows: if local government have power to collect their own taxes and have full authority to make spending or expenditures without receiving intergovernmental transfer from central government, it is a pure decentralization. On the opposite, non-pure fiscal decentralization describe local government only have responsibilities to allocate resources. In the case of Indonesia, government applied non-pure fiscal decentralization but with certain modification. Local government have sovereignity to collect land and property taxes as well as motor vehicle tax, entertainment tax, restaurant taxes and other local taxes. However, the central government still have full authority to collect central taxes such as income taxes and value added taxes. Those resources collected by central government will be distributed to local government through intergovernmental transfer.

Empirical research on fiscal decentralization divided into two major ideas. Several number of studies showed that fiscal decentralization boost China economic growth. The studies of Qian and Weingast (1997) and Lin and Liu (2000) contributes to this claim. Their studies help China to empower overall economic development and fiscal incentives to local governments. On the other hand, Davoodi and Zou (1998) stated that fiscal decentralization hamper economic growth of China. Jin and Zou (2005) added to the statement that the result indicate that local government did not respond to local preferences in practice. The phenomenon happened because local officials are not selected by local voters.

On the matter of regional disparities, there are also two opposite results. First opinion stated that fiscal decentralization has positive impact on reducing regional disparities. This idea described in the research of Canaleta, Arzoz, and Garate (2004), Akai and Sakata (2005), Ezcurra and Pascual (2008), Lessmann (2009), and Mustra and Skrabic (2014). Contrary, there are studies explaining that fiscal decentralization lead to more income inequalities. The idea is supported by the works of Kanbur and Zhang (2005), Bonet (2006), Barrios and Strobl (2009), Hao and Wei (2010) and Kessler and Lessmann (2010). The factor contributing to this matter is the quality of government. In a high-quality government, fiscal decentralization lead to regional convergence. On the other hand, if the quality of government is poor, the regional disparities will be wider because of fiscal decentralization.

FISCAL DECENTRALIZATION IN INDONESIA

According to law 22/1999 and law 25/1999, the central government will reduce its role into five authorities, that are military and defense, fiscal and monetary, religion, judicial system, and foreign affairs, plus standardization and macroeconomic planning. The rest of the role will be decentralized to the local governments. Fiscal decentralization in Indonesia face complicated and massive job. Those because there are more than 200 million populations, very large area, many provinces and districts/municipalities, and very difficult geographical condition (Indonesia has more than 17 thousands of islands).

The revenue aspect in the fiscal decentralization divided into revenue generated by central government and revenua collected by local government. Major source of revenue such as income tax and value added tax still belong to central government. The local government only have access to fewer amount of local taxes. Regions with big natural resources will be benefited from fiscal decentralization because they can generate big locally generated revenue. The same thing will happen to regions with great good tourism packages.Those differences will create disparity among regions. That is why the intergovernmental transfers play a significant role in case of redistribution. The transfer consists of conditional transfer and unconditional transfer. The local government will have total freedom in spending the unconditional tranfers, but there are limitation on spending conditional one.

However, the fiscal decentralization process in Indonesia tends to be more expenditure decentralization. The local government have more expenditure freedom but on the revenue side, they still have to depend on transfers from central government. This kind of decentralization have risk on the continuity in providing consistent quality of public services. The central government still have big burden in budget to make intergovernmental transfer to local governments.

METHODOLOGY

We measure economic growth using the data of gross regional domestic product. In general, national development in developing countries is focused on economic development. Economic growth is closely related to increased production of goods and services as measured by the amount of gross regional domestic products in each province. This economic growth becomes important as a benchmark for the successful implementation of fiscal decentralization. The higher the economic growth, the more advanced an area will be. Although on the other hand fiscal desenetralization can be a cause of income disparity so it is important for the government to implement redistribution.

The model used in this study is an econometric model which is analyzed using panel data. The model developed refers to the production function in which economic growth is simply influenced by the amount of capital (K) and the amount of labor (L) available in the economy. In this condition, if the workforce involved in the production process increases, it automatically increases production, whereas if the production level decreases, the labor absorbed will decrease.

Estimation made on the analysis model using panel data from 33 provinces in Indonesia for the period 2009-2014 produced different estimates using the Pooled Least Square (PLS) model, Fixed Effect Model (FEM) and Random Effect Model (REM). The PLS model is a combination or cross section and time series data collection, then the model is estimated using the least squares (OLS). The FEM model considers that the variables in the intercepts are cross section and time series, dummy variables are added to this model to allow these intercept changes and the model is estimated by OLS. The REM model improves the efficiency of the OLS estimation process, cross section and time series disturbances are calculated so that the model used is Generalized Least Squares (GLS).

The model specifications built are as follows:

$$lnGRDPCAP_{it} = \beta_0 + \beta_1 lnDAU_{it} + \beta_2 lnDAK_{it} + \beta_3 lnDBH_{it} + \beta_4 lnPAD_{it} + \beta_5 TK_{it} + \beta_6 HDI_{it} + \varepsilon_{it}$$

Where:

$lnGRDPCAP_{it}$: the value of the province's Gross Regional Domestic Product per capita in year t in ln.

$lnDAU_{it}$: the value of the provincial General Allocation Fund i in year t in ln.

$lnDAK_{it}$: the value of the Special Allocation Fund for the province i in year t in ln.

$lnDBH_{it}$: the value of the Provincial Profit Sharing Fund in year t in ln.

$lnPAD_{it}$: the value of the province's Original Revenue in year t in ln.
TK_{it}: the number of provincial workers i in year t.
HDI_{it}: the score of human development index in province i, year t

Capital accumulation occurs when a portion of income is saved and reinvested with the aim of increasing output and income in the future. Procurement of new factories, machinery and equipment as well as raw materials increases the physical stock (capital stock) of a country, namely the total real net value of all productive capital goods physically and it is clearly possible to increase output in the future. In this case, locally-generated revenue (PAD) and three ddeconcentration funds resemble capital accumulation. Local governments need to allocate the fund to provide social service and infrastructure for the sake of enhancing social welfare.

Population growth and labor force have traditionally been regarded as one of the positive factors that can spur economic growth. A greater amount of labor means increasing productive labor, while greater population growth means increasing the size of the domestic market. Technological progress for some economists is the most important source of economic growth. In its simplest sense, technological advances occur because of the discovery of new ways or improvements in old ways of handling traditional jobs. These technological advances can vary in nature, namely, first, neutral technology, occurs if the technology allows us to achieve a higher level of production using the same number and combination of input factors. Second, technological progress which is labor-saving and third, advances in capital-saving technology.

Human development index shows the quality of human in the area. Higher HDI indicates that the quality of labor is high, while higher quality of labor can be associated with more productivity to enhance more economic growth in the area.

EMPIRICAL STRATEGY

To empirically test the relationship between intergovernmental transfer (deconcentration fund) and local government to gros regional domestic product, we use province level, yearly data. The data provided by Central Bureau of Statistics of Indonesia (BPS). The collected data was collected from official website of BPS that are published annually. The first set of model used in this research show the random effects model. The later set show the fixed effect model. The model itself wer chosen based on several tests such as hausman test.

In this methodology, GRDP and special allocation fund are measured using the formula per capita because

- the number pf population affects the amount of GRDP. The domestic product generated by each province is affected by the number of residents living in the province. So that the amount of GRDP cannot be calculated using the absolutnumbers that exist, but must be divided first by the number of population in an area.More the population in the area shows the number of economic activities that will affect the amount of gross regional domestic product, ceteris paribus.
- General allocation fund (DAU) was measured using DAU per capita because the deconcentration fund in the form of DAU included the population as an element in the calculation of the formula. The area with more population will get more amount of decentralization funds in the form of DAU. So that the DAU per capita can be

compared across regions with other regions rather than comparing the DAU of each region in aggregate.

Estimation calculations use GRDP and deconcentration funds in the form of natural logarithms in order to compare the relative magnitude of the region. When we use absolute numbers, every increase in the rupiah will have different proportions and interpretations between regions.

RESULTS AND DISCUSSION

We measure the fluctuation of gross regional domestic product each province along the year. The results of this research is as follows. Table 1 contains three regression models. The models regressed using random effect models. All variables in those three models have significance level of 99% except workforce (TK). After performing Hausman Test to compare random effect models and fixed effect models, the result directs us to use fixed effect model rather than random effect models but we still exhibit the result of the regression to compare between REM and FEM later.

TABLE 1. Regression Results - Random Effect Model

VARIABLES	(1) lngrdpcap	(2) lngrdpcap	(3) lngrdpcap
lndaucap	0.282***	0.212***	0.164***
	(0.0451)	(0.0506)	(0.0508)
lndak	-0.175***	-0.160***	-0.155***
	(0.0369)	(0.0365)	(0.0354)
lndbh	0.241***	0.226***	0.218***
	(0.0473)	(0.0467)	(0.0452)
lnpad	0.241***	0.312***	0.179***
	(0.0441)	(0.0498)	(0.0609)
tk		-4.36e-08***	-2.98e-08*
		(1.54e-08)	(1.53e-08)
ipm			0.0662***
			(0.0187)
Constant	0.824	-0.0797	0.667
	(1.722)	(1.718)	(1.678)
Observations	181	181	181
R-squared			
Number of kode	32	32	32

Standard errors in parentheses. The stars represent statistical significance, *** p<0.01, ** p<0.05, * p<0.1

Model number (1), (2), and (3) show the impact of deconcentration funds on gross domestic regional product using random effects model.

Table 2 shows the set of regression using fixed effect models. So we can say that this Table 2 presents main results of the research.FEM is shown on models 5, 6, 7, and 8 in the estimation results above. In model 7, where the estimation is done using an empirical strategy as shown in the previous section shows that there are 3 variables which do not show a statistically significant effect, namely the variables of the appendix, lndbh (sharing revenue fund), and tk (workforce).

The general allocation fund which play a significant role in the source of regions revenue do not have significant effect to the gross regional domestic product. It is quite surprising since many regions have a big dependency on this fund. The allocation of expenditure of general allocation fund may be play a big part. The freedom of local government in makin expenditure using general allocation fund may be crucial. Usually local government use bigger portion to make payment for public servant's salary rather than providing more tangible public services such as infrastructure and business programs which can directly affect to gross regional domestic product. That is why the spending of general allocation fund is not significant to gross regional domestic products.

Profit sharing fund also didn't get the significance level in making influence to gross regional domestic product. There are not many regions who own natural resources. There are four types of natural resources to be shared between central government, provincial governments, and district/municipalities governments. Those are oil and gas, mining products, forestry products and fishery products. Since not all regions own the products, may be the profit sharing fund cannot be significantly affected to the gross recional domestic products.

TABLE 2. Regression Results - Fixed Effect Model

VARIABLES	(5) lngrdpcap	(6) lngrdpcap	(7) lngrdpcap	(8) lngrdpcap
lndaukap	0.158*	0.160*	0.0842	
	(0.0892)	(0.0899)	(0.0909)	
lndak	-0.146***	-0.146***	-0.156***	-0.148***
	(0.0355)	(0.0357)	(0.0348)	(0.0337)
lndbh	-0.00279	-0.00428	-0.0290	
	(0.0761)	(0.0766)	(0.0749)	
lnpad	0.461***	0.465***	0.273***	0.280***
	(0.0729)	(0.0754)	(0.0967)	(0.0884)
tk		-1.82e-08	-3.27e-08	
		(7.91e-08)	(7.71e-08)	
ipm			0.106***	0.113***
			(0.0348)	(0.0329)
Constant	2.803	2.730	4.233**	3.802**
	(2.044)	(2.075)	(2.077)	(1.595)
Observations	181	181	181	181
R-squared	0.508	0.508	0.538	0.535
Number of kode	32	32	32	32

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.

To maintain the efficiency of the estimation, the three insignificant variables can be dropped so that the parameters of each variable have a more efficient value.In model 8, the estimation is done using a variable that has a statistical significance level of 90%, namely the lnDAK (special allocation fund) variables, lnPAD (locally-generated revenue), and HDI. So there is no bias and inefficiency on the amount of parameter values and magnitude obtained.

LnDAK shows a negative sign and the mark is consistent on all models 5, 6, 7, and 8. It also means a robustness test, which means the sign is stable and shows a negative marginal effect. In the model 8 we used, the parameter or marginal effect generated by the decentralization fund in the form of DAK was -0.148 and was statistically significant at the 0.01% level. these results indicate that each increase in DAK by 1%, it will have an impact on the economic downturn (GRDP per capita) in an area of 0.148% ceteris paribus. This result can be explained because local governments cannot use special allocation fund freely in the fields that can increase GRDP. The use of special allocation fund in general has been allocated for the field that support the central government program and has been detailed in each activity that is determined or permitted. So wether or not the special allocation fund is accurately used for local needs or just for central government needs.

Locally-generated revenue (PAD) has a positive impact on the GRDP of 0.280 with a statistical significance level of 0.01% which means that an increase in PAD of 1% will have an impact in the form of a GRDP per capita increase of 0.28% ceteris paribus. As discussed earlier, that the increase in PAD can result in two possible marginal effects on GRDPper capitathat are positive and negative impacts. The increase in PAD will have a positive impact if the increase in PAD is supported by a good tax base and tax rate management. In addition,aside from relying on local taxes, PAD will have a positive impact on GRDP per capita if there are other sources of income such as natural wealth and infrastructure.

Conversely, if the increase in PAD only rests on an increase in tax rates, this will have an impact on the erosion of the tax base and will eventually result in reduced economic activity. The high tax burden will be a disincentive for entrepreneurs, and ultimately have an impact on reduced economic activity - which means a reduction in gross regional domestic product.

The Human Development Index also has a positive impact on GRDP per capita that is equal to 0.113 with a statistical significance level of 0.01%. The estimation parameter explains that an increase of 1 point in the Human Development Index will result in a GRDP per capita increase of 0.11%. The Human Development Index shows the competitiveness of the population where the higher the index value, the population in the area will be better prepared to face change in every circumstances. In contrast to the large number of workers (labor force) where in this estimate the impact did not have a statistically significant impact. The insignificance of the number of workers is due to the lack of information on the proportion of qualifications of the workforce, whether it is dominant in the labor force, skilled, or expert. HDI is more appropriate to use because the greater the HDI indicates that the proportion of skill levels in the area is more at a higher level (skilled or expert).

DISCUSSION

The results show that the General Allocation Fund has a positive and although it has no significant effect on regional economic growth (33 provinces in Indonesia for the period of 2009-2014) which can be interpreted as any increase in the General Allocation Fund will increase regional economic growth. There is a suspicion that the general allocation fund is spent on routine expenditures such as employee expenditure in large portions. The problem on such policy is that the fund only used for administrative services and cannot touch to the bottom of society needs.

Special allocation fund can be classified aas a conditional grant from central government to local government with certain task to do. Those tasks are mostly on behalf of central government interests. Thus the central government can use this special allocation fund to make local government to fulfill macroeconomic target. No surprise if this variable show negatif sign on gross regional domestic product. On the paper, special allocation fund is good for society because the allocation can be used to provide the roads for regions, to help local government to reach minimum standard of basic education and health care, and to give special assistamce to very poor regions. But there should be more advanced discussion regarding the negative effect on gross regional domestic product.

Human development index has positive and significant effect on gross regional domestic product. It means that more quality in the workforce will create bigger quality of economic activities. On the other hand, intergovernmental transfer also have the duty to increase the quality of education and health service. Those kind of spendings are able to increase the human development index. So the effect can be vice versa.

In the end, the success of decentralization process will depend on the central government that designs the process and commits to the implementation.

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