

Specific Allocation Funds, Economic Growth, and Unemployment: A Case Study in Banten Province, Indonesia

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Abstract- Specific allocation funds to the regions are still needed due to inequality of regional financial capacity. Areas with low financial capability are identical to those underdeveloped regions, which have relatively low levels of economic growth and high level of unemployment. This study analyzes the impact of specific allocation funds on economic growth and unemployment through the regional expenditure mechanism, using panel data from 2010-2015, while the simultaneous equation model is estimated using the Two Stage Least Square (2SLS) method. The results of the study indicate that the Specific Allocation Fund does not affect capital expenditures in the regency areas, but does so in the cities. Specific Allocation Funds have a significant influence on economic growth and unemployment through capital expenditure transmission. Going forward, the government needs to increase.

Index Terms- capital expenditure, dynamic simultaneous model, regional expenditure, specific allocation funds.

I. INTRODUCTION

Indonesia has implemented the practice of transfer funds since the old order experienced a drastic change after the 1998 reforms. Initially, the transfer of authority was only limited to the provincial level; but then in the reform era it became focused more on doing so to the regency/city level. The granting of authority to the regions to manage and regulate all government affairs outside of the central government's affairs is accompanied by a transfer of funds (money follows function), as stipulated in Law Number 33 Year 2004 on Financial Balance between the Central and Regional Governments. One of the objectives to be achieved from the policy of transfer funds from the central to the regions is to stimulate economic growth, which in turn will lower the unemployment rate, in order to create a prosperous society.

Various studies have been conducted to measure the effects of transfer funds; such as those performed by Hong (2010) in Korea, and Zhang and Zou (1998) in China, that found a negative relationship between fiscal decentralization and economic growth in provincial areas. Similarly, the results of Davoodi and Zou (1998) showed negative relationship between decentralization and economic growth for developing countries, while positive relationship was shown in developed countries. In addition, a study conducted by Xie *et al.* (1999) revealed that

fiscal decentralization has an impact on long-term economic growth in the United States. While Vasquez and McNab (2003) doubt if there is even a relationship between fiscal decentralization and economic growth. On the other hand, a study conducted by Waluyo (2007) in Indonesia showed that fiscal decentralization helps boosting the economic growth relatively better in areas that are the centers of business and areas that are rich with their natural resources, compared to those that are not business centers and those that are poor in natural resources.

The fact is, the amount of funds transferred to regions and villages throughout Indonesia continues to increase. During the period of 2010-2016, there was an average increase of 19.99% per year, even though economic growth tended to stagnate at 5.0%, and the unemployment rate only declined by an average of 0.16% per year. Similar phenomenon also occurred in Banten Province, where transfer funds in the same period had increased by an average of 39.49% per year. Even so, economic growth in this province has slowed to around 5.0% per year, unemployment has only decreased by 0.78% per year, and it is still an area with the highest unemployment rate in Java.

So far, there have not been many studies that emphasize the influence of transfers to the regions, especially specific allocation funds, even though the fund allocation focuses on infrastructure spending, which is believed to be able to increase economic growth and absorb labor. Based on these facts it is necessary to assess the impact of transfer funds, especially specific allocation funds, on economic growth and unemployment through regional spending behavior

II. THE METHODS

This research was conducted in Banten Province using secondary data from 2010-2015 in the form of panel data of eight regencies/cities in said province. The secondary data was obtained from the Directorate General of Fiscal Balance, which consisted of General Allocation Funds (DAU), Revenue Sharing Funds (DBH), Specific Allocation Funds (DAK), Locally Generated Revenues (PAD) and their components, and other Transfers. Regional expenditures consist of capital expenditure and expenditure of goods and services. Development performance is measured using economic growth and unemployment rates.

The data was processed using a simultaneous equation model which was constructed into four blocks (Figure 1); namely the regional income block, regional expenditure block, public service block (health, education, public works), and the block of economic growth and unemployment. These four blocks consist of twenty-three structural equations and three identity equations. The regional income block reflects the income received by the region, which consists of transfer funds, PAD, and other types of transfers. The behavior of regional income will affect the expenditures made by the region; and these expenditures will have an impact on economic growth and unemployment, both directly and indirectly through public services in said region. The simultaneous equation model is estimated using the Two Stage Least Square methods (2SLS) which is processed with Eviews9

software.

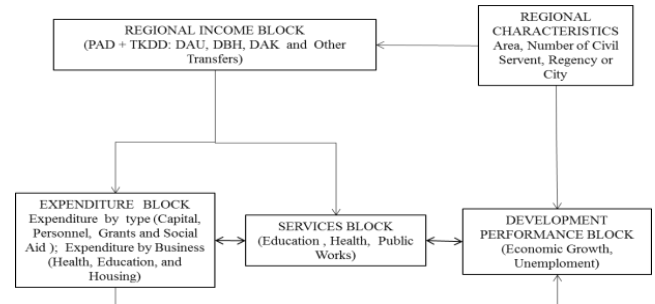


Figure 1. Simultaneous model framework

III. RESULT AND DISCUSSION

The contribution of transfer funds to the regional income

Funds that are transferred to the region in the form of a balancing fund consisting of DAU, DBH, DAK are still the source of income for regencies/cities in Banten Province. The proportion of DAU in each regency/city is still the highest, followed by regional income through DBH. Figure 2 provides information that DAU contributes the most to regional revenues. Pandenglang Regency is the region with the largest DAU contribution, which is 44.46%, followed by Lebak Regency with 43.73%. Meanwhile, the smallest contribution of DAU to regional revenues is recorded by South Tangerang City, which is 23.09%.

DAU contribution to regional revenues that is still high in several regencies indicates that regional financial capacity is still low. Balancing funds, especially the DAU, which are distributed to the regions eventually become a disincentive for increasing regional financial independence. Therefore, regional government is expected to be able to increase the sources of regional revenues, especially from DBH and PAD, to encourage regional fiscal capacity so as to reduce financial dependence on the central government.

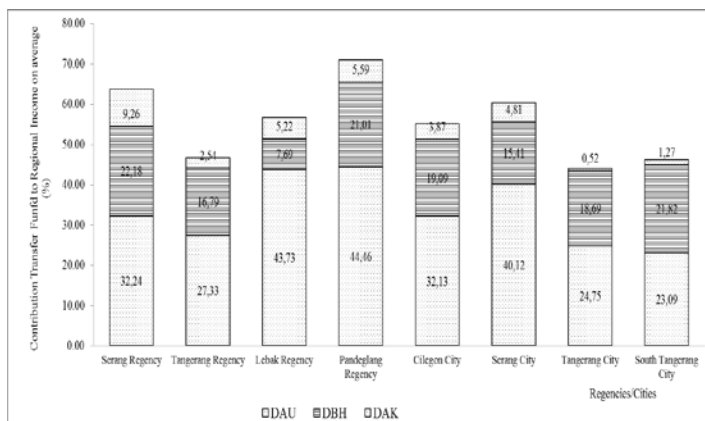


Figure 2. Average contribution of transfer funds to regional income of regencies/cities in Banten Province in 2010-2015

In addition, the government also provides DAK. Data shows that DAK has smaller contribution compared to DAU and DBH. The average DAK for regencies/cities in the Province during 2010-2015 was 4.13%. Despite having small value, DAK

is a form of bottom-up participatory planning, so that programs funded by DAK funds are needed by the community. DAK is used to improve infrastructure that is executed based on proposal from the region, so that it is expected to be able to encourage economic growth and open employment opportunities in the regions (Juanda and Hendra 2017).

The Impact of Transfer Funds on Regional Expenditures

Table 1 shows that goods and services expenditure (GSE) is significantly affected by DAU, PAD, and other legitimate income. The short-term elasticity of the DAU parameter is equal to 0.4603, which means that every time there is a 1.00% change in DAU, the expenditure on goods and services will increase by 0.4603%, with a long-term elasticity of 0.464. The second factor that influences the expenditure of goods and services is PAD. PAD has an inelastic short-term elasticity, which is equal to 0.3488; it can be said that every time there is a 1.00% increase in PAD, the expenditure of goods and services will increase by 0.3488%, with a long-term elasticity of 0.351. For some regions such as South Tangerang City, Tangerang City, Cilegon City, and Tangerang Regency PAD contributes more than 20% to their regional revenues. The increase in PAD will encourage the increase in regional spending, including spending on goods and services.

Table 1 Estimated Transfer Fund to Local Expenditures

Independent variables	Dependent Variables			
	LogGood and Services Expenditures (GSE)	LRE	LogCapital Expenditure (CE)	LRE
Constanta	-0.0967		-3.6442	
LogGeneral Allocation Fund (DAU)	0.4125***		1.2500	
LogSpecific Allocation Fund (DAK)	0.1122		0.0332	
LogRevenue Sharing Fund (DBH)	0.0575		0.0592	
LogOwn Resources Revenue (PAD)	0.401***	0.4038	0.6147	
LogCivil Servant (PNS)	0.2766***			
LogOther Transfers (Otr)	0.3244***	0.3270	-0.0532	
LagGood and Services Expenditures_1	0.0079			
LagCapital Expenditure_1			0.0601***	
LogGeneral Allocation Fund (DAU)*D1			-1.1726	
LogSpecific Allocation Fund (DAK)*D1			0.719***	0.7473
LogRevenue Sharing Fund (DBH)*D1			-0.2313	
LogOwn Resources Revenue (PAD)*D1			0.0688	
LogOther Transfers*D1			-0.0387	
LagCapital Expenditure_1 *D1			-0.0066	
Adj. R-squared	0.9132		0.7668	
Durbin Watson	1.5188		2.4138	

LRE = long run elasticity

* indicates $p < 0.1$; ** indicates $p < 0.05$; *** indicates $p < 0.01$

If the elasticity between DAU and PAD is compared, it is seen that the pattern of goods and services expenditures is more likely to be influenced by DAU. This implicitly shows that regional revenues are still dominated by the acceptance of DAU. Meanwhile, factors from other income also have a significant effect on goods and services expenditure, with an elasticity of 0.3244 (in other words, it is inelastic), which means that every 1.00% increase in other legitimate income will be responded by an increase in spending on goods and services as much as 0.3244%. On the contrary, DBH actually shows a negative relationship with goods and services spending, albeit insignificant. The analysis shows that the DBH contribution in regional income of regencies/cities in Banten Province is still relatively low.

Table 1 also illustrates the effect of lag on the previous year's capital expenditure (CE) on the capital expenditure pattern, while other variables are not significant.

However, if described in detail using regency and city area dummy variables, the equation for capital expenditure for the regency government ($D1 = 0$) is as follows:

$$\text{LogCE} = -3.6442 + 1.2500\text{LogDAU} + 0.0332\text{LogDAK} + 0.0592\text{LogDBH} + 0.6147\text{LogPAD} - 0.0532\text{logOTr} + 0.0601\text{LogCE}_1$$

While the capital expenditure equation for the city government ($D1 = 1$) is:

$$\text{LogCE} = 0.0774\text{LogDAU} + 0.7522\text{LogDAK} - 0.1721\text{LogDBH} + 0.6835\text{LogPAD} - 0.0919\text{logOTr} + 0.0535\text{LogCE}_1$$

The above equations reveal that DAK has a significantly positive effect on capital expenditure in the city areas, while it has no effect in the regencies. The long-term elasticity of DAK to capital expenditure for the city government is much higher compared to its short-term elasticity. The city government's short-term elasticity is 0.7190, which implies that every 1.00% increase in the DAK will be responded by an increase in capital expenditure as much as 0.7190%, whereas the long-term elasticity shows a greater influence, equal to 0.7522; which means that in the future the amount of DAK funds needs to be considered.

The difference of DAK influence in regencies and cities is that cities have better quality of DAK management (human resources) and also the portion of capital expenditure is larger in the cities than it is in the regencies. In the future, even though the DAK portion is smaller in fiscal balance, it plays a strategic role in the development that demands a more active regional participation, since it is in line with the principles of decentralization and accountability for the provision of basic community services (Bappenas 2011). This study supports the results of researches conducted by Arwati and Hadiati (2013); and by Juanda *et al.* (2017), both state that DAK has a significant effect on capital expenditure.

The study showed that DBH has no effect on capital expenditure, which indicates that in actuality regencies/cities are incapable of being independent, since DBH is one of the

benchmarks in assessing the regional financial independence. DBH in the southern part of Banten Province is still very small, both originating from natural resources and taxes, therefore the government's commitment to increasing the sources of regional revenue is needed.

The Impact of Transfer Funds on Economic Growth and Unemployment

The study results show that capital expenditure and economic growth lag have a significantly positive effect on economic growth. Short-term elasticity of capital expenditure is equal to 0.0024, which means that for every 1.00% increase in capital expenditure there is an increase in economic growth by 0.00243%. These results support the researches conducted by Xie and Zou (1999); and by Pose and Ezcurra (2009), who both state that government spending tends to increase economic growth. The same opinion was expressed by Gupta *et al.* (2014), stating that capital spending contributes to economic growth.

Theoretically, the inflation rate has a positive effect on economic growth, as expressed by Blancard (2011); that rising prices will cause companies to increase their output, so as to absorb more labor. The large amount of labor at work has resulted in reduced unemployment, thereby increasing purchasing power and encouraging increased consumption, which in turn is followed by an increase in economic growth. The study results show that the inflation rate does not significantly affect economic growth.

At the same time, however, private investment has a negative and significant effect on economic growth, thus making it contradictory to the theory. Short-term elasticity of private investment is equal to -0.0045, which means that private investment has not yet influenced the economy of regency/city governments in Banten Province. This result is reinforced by the distribution of data which revealed that private investment in Banten Province during 2010-2012 was still agglomerated in the northern part of the region. Meanwhile, large-scale private investment in the southern part of the region has only begun since the establishment of the Tanjung Lesung Special Economic Zone in 2012 in Pandeglang Regency, and the construction of the "Merah Putih" Cement Plant in Lebak Regency. The impact of these two investments has not been experienced by the southern part of the region, therefore a relatively long time lag is needed to be able to measure the influence of private investment in said region.

The study also found a significantly negative relationship between economic growth and unemployment rate. The elasticity of economic growth for both short and long term is inelastic. When compared between the two, the long-term economic growth (-0.3298) gives a greater influence on unemployment than that of the short term, which is equal to -0.0911. (Table 2). This result is in line with the research conducted by Erickson (1997), who points out that there is a trade-off between economic growth and unemployment. Meanwhile, Schubert and Turnovsky (2018) revealed that the trade-off between economic growth and unemployment is big in the short term but gets smaller in the long term. This means that the regional government must maintain the stability of economic growth to reduce unemployment rate.

The labor force participation rate shows a negative influence on economic growth in Banten Province. This indicates that the ongoing economic growth has not been able to absorb labor. This argument is reinforced by the results of previous analysis which showed high unemployment in Banten Province, especially in industrial centers such as Cilegon City and Tangerang Regency. Industries operating in the Cilegon and surrounding areas are capital intensive, which requires skilled labor. The trickle down effect phenomenon has not yet fully occurred in the centers of economic growth in Banten Province.

Table 2 Estimated Transfer Fund to Economy Growth and Unemployment

Independent Variable	Dependent variable			
	Economy Growth	LRE	Unemployment	LRE
CConstanta	-5.0089**		30.4482	
LogLabor Force Participation Rate			-4.2163	
LogCapital Expenditures	0.3927			
LogGood and Services Expenditures	0.0024***	0.0026	-0.0072**	-0.0073
Regional Dummy	0.0016*			
Inflation	-0.0468			
LogPrivate Invesment	-0.0298	0.0049		
LogRegional Minimum Wage			-0.0100	-3.618
Average length of years spent at school			-2.4115	
Economic Growth			-0.0911*	-0.3298
LagUnemployment_1			0.7238***	
LagEconomic Growth_1	-0.0762***			
Adj. R-squared	0.9465		0.6124	
Durbin Watson	2.3486		2.4824	

LRE= long run elasticity

* indicates $\rho < 0.1$; ** indicates $\rho < 0.05$; *** indicates $\rho < 0.01$

The results of the study also point out that the unemployment rate has become a priority of the Banten Provincial Government, as stated in the documents of Regional Mid-Term Development Plan (RPJMD) from 2012-2017 and from 2017-2022. The open unemployment rate in Banten Province is recorded above the national level and is the highest in Java. The estimation results in Table 2 show that the factors that significantly give a negative effects on the unemployment rate are capital expenditure and economic growth, whereas unemployment lag actually has a positive effect. Capital expenditure is negatively related to the unemployment rate, which shows that capital expenditure by the government tends to reduce unemployment. Capital expenditures used to open access for regions that have been isolated will increase regional economic activity.

The estimation results reveal that the short-term elasticity of the capital expenditure is -0.0072, which means that for every 1.0% increase in capital expenditure, the unemployment rate will decrease by -0.0072%; this is in line with the research conducted by Zakaria (2015) which states that the bigger the amount of capital expenditure issued by the regional government, the greater the effect will be on the reduction of the unemployment rate.

The results also show that the average length of years spent in school has a negative coefficient on unemployment, which means that the higher the level of one's education, the more

likely it is to reduce the unemployment rate. Yumna *et al.* (2017) revealed that educational inequality turned out to have a more important role in influencing unemployment. Concerns about educational inequality are also included in the findings of Agrawal (2014) study in India, which is why infrastructure improvements in education are needed. The argument is in accordance with the conditions that exist in Banten Province, where the results of the analysis indicate that there is a very huge gap between regencies/cities in terms of average length of schooling. The southern part of the region has an average of only 6 years of schooling, while the northern part has reached almost 12 years. The Net Enrollment Rate (NER) also shows a fairly sharp gap between regencies/cities for secondary education; in the southern part, the NER for senior high school is still around 50.0%, while in the north it has reached 70.0%. In general, the results of this study confirm the research conducted by Yanthi and Marhaeni (2015), which states that education has a negative effect on unemployment.

Similarly, the variable for per capita Gross Regional Domestic Product (GRDP) has a negative influence on the unemployment rate. In theory, an increase in per capita GRDP will stimulate an increase in economic activity, thus creating jobs. Extensive employment opportunities have an impact on reducing unemployment, even though these two variables are insignificant.

IV. CONCLUSION

Transfer funds through specific allocation funds have a significant effect on capital expenditure in the city areas, but not so much in the regency areas. This is caused by; (1) the relatively low quality of human resources in regency areas; and (2) the large proportion of capital expenditure in city areas. Capital expenditure tends to reduce the unemployment rate and increase the economic growth in Banten Province. Going forward, local governments need to prioritize capital expenditure through physical DAK for underdeveloped regencies, in order to increase regional connectivity to encourage economic growth and to reduce unemployment.

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