THE JOKOWI'S "TO DEVELOP FROM THE PERIPHERY" POLICY: HOW EFFECTIVE?

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ABSTRACT

This paper reports the result of a study on the effectiveness of the current public investment policy adopted by President Joko Widodo that is called "membangun dari pinggiran" (to develop from the periphery). The indicators of the effectiveness are regional economic growth and interregional per capita income (GRDP) inequality. The economic growth is approximated by regional economic multiplier coefficient, whereas the interregional per capita income inequality is measured by the Williamson index. The data of regional and sectoral output are taken from Statistics Indonesia (BPS) 2010-2014. Our hypothesis is that the policy is ineffective in enhancing regional economic growth, but it is effective in reducing interregional per capita income inequality. The hypothesis is accepted when periphery is defined as backward regions (daerah tertinggal) and center is defined as advanced regions. The same conclusion can be drawn when "periphery versus center" is defined as "Java vs. Outer Islands" or "Western vs. Eastern Indonesia". However, the hypothesis is rejected when "periphery versus center" is defined as "urban vs. rural" or "Non-agriculture vs agriculture dominated" regions. The implications of the findings may suggest useful indicators for designing more effective implementation of the Jokowi's policy.

Keywords: regional economic growth; interregional income inequality; public investment policy
JEL Classification: O47, O44, H54

ABSTRAK

Artikel ini memberikan gambaran hasil studi dari efektivitas kebijakan publik terkini yang diadopsi oleh Presiden Joko Widodo yang disebut sebagai "membangun dari pinggiran". Indikator efektivitas adalah pertumbuhan ekonomi regional dan ketimpangan pendapatan perkapita interegional. Pertumbuhan ekonomi diperkirakan dengan koefisien dampak berganda ekonomi (*economic multiplier effect*), sementara ketimpangan pendapatan per kapita interional diukur menggunakan Indeks Williamson. Data keluaran regional dan sektoral diperoleh dari Badan Pusat Statistik selama tahun 2010-2014. Hipotesis dari studi ini adalah bahwa kebijakan tidak efektif dalam meningkatkan pertumbuhan ekonomi regional, tetapi efektif dalam mengurangi ketimpangan pendapatan per kapita interegional. Hipotesis ini diterima ketika daerah pinggiran (*periphery*) didefinisikan sebagai daerah tertinggal dan pusat diartikan sebagai daerah maju. Simpulan yang dapat ditarik adalah "daerah pinggiran versus pusat" yang didefinisikan sebagai "Jawa vs. Pulau-Pulau Luar" atau "Indonesia bagian barat vs. Indonesia bagian timur". Namun demikian, hipotesis ini ditolak ketika "daerah pinggiran versus pusa" didefinisikan sebagai "kota versus desa" atau wilayah dengan "dominasi non pertanian vs. pertanian". Implikasi dari temuan ini memberikan masukan berupa indikator yang berguna dalam merancang implemhtasi kebijakan Jokowi yang lebih efektif.

Kata Kunci: pertumbuhan ekonomi regional; ketimpangan pendapatan antar-wilayah; kebijakan investasi publik.

JEL Classification: O47, O44, H54

1. INTRODUCTION

The concept of *"*to develop from the periphery*"* was intensively discussed in the national media in 2014 when Mr. Joko Widodo ("Jokowi"), the then presidential candidate, campaigned his idea of *"*Nawa Cita*"* (The Nine Agenda). The agenda of *"to develop from the periphery"* (*membangun dari pinggiran*) was written as the third point in the Nine Agenda. In the complete version it reads "To develop Indonesia from the periphery by strengthening regions and villages in the frame of the unitary state" (*Membangun Indonesia dari pinggiran dengan memperkuat daerah-daerah dan desa dalam kerangka negara kesatuan*).

The concept is very interesting, primarily because this is rather unique and counter-intuitive at least from the view of regional development literature. When we use search engine like Google to find the literatures on the concept of "*to develop from the periphery"*, then most likely we would find articles on the history or experience of developing east European countries that are less developed than their neighbors in the west (see the discussion in Dollar, 2001). In this case the meaning of the concept is different from what is meant by the Jokowi's *membangun dari pinggiran*. Therefore, his concept is rather unique.

From the point of view of most regional development theories, the concept is counter-intuitive. In the literatures of the theories (see, for example, the discussion in the World Development Report of the World Bank, 2009), most regional development strategies rely on the principle of agglomeration economies (economies of concentration) which is a specific form of economies of scale. Most industrial activities tend to be clustered together in space because of this agglomeration economies. Therefore, it is more effective (based on the criterion of economic growth) to invest great amount of money in a few specific locations rather than to invest small amount of money in many locations, eventhough the total money in the two alternatives are just the same. The selected locations where the great amount of money is invested are sometimes called the growth poles. Given limited source of fund, to invest in a few productive locations would gain greater returns than to invest uniformly in all locations of a region. In the words of the World Development Report, "… *economic growth will be unbalanced. To try to spread it out is to discourage it – to fight prosperity not poverty*." It is obvious that this theory is not in line with the policy of "*to develop from the periphery*".

It is natural, therefore, that there is no or at least very rare discussion in the literature in the past that focused on this concept. The relevant question is whether the policy of "*to develop from the periphery"* is effective or not. The effectiveness can be measured by how much the objectives of economic development (rapid economic growth, equal income distribution, low rates of poverty and unemployment, etc.) are achieved. We will focus only on two issues, i.e., economic growth and income distribution (more specifically, interregional income distribution). Our

conjecture is that the policy is inferior (less effective) in promoting rapid economic growth. On the other hand, it is superior (more effective) in equalizing interregional income distribution. The reason of the first conjecture is that the policy cannot benefit from the economies of concentration. On the other hand, the reason of the second conjecture is that more money invested in low income regions will improve the interregional income equality, *ceteris paribus*. Our conjecture is that with the policy of "*to develop from the periphery*" the Jokowi administration intends to put higher priority on interregional income equality rather than on national average of regional economic growth.

Needless to say that to correctly answer the question in the title of this article we need to wait until President Jokowi ends his presidency. By then we will have a complete set of data representing the performance of the policy that can be compared with other sets of data (from the experience of the past administrations or that of other countries, or probably generated from counter-factual experiments). At this point of time, however, we have only limited data that record less than two years of the performance of the policy.

Jokowi faces three structural problems that have hindered economic development in Indonesia since 1997-1998 Asian financial crisis: low infrastructure investment, weak manufacturing performance, and weak growth in foreign direct investment. To respond these problems, one of the most important economic policies of the Jokowi government has been the fuel subsidy reform (see Day and Damuri, 2015). By reallocating the fuel subsidy, Indonesia was in a position to increase government capital spending (mostly in infrastructure) by 70% in 2015 planned budget–an important aspect of Jokowi's medium-term economic strategy. Capital investment is likely to make a difference, though more so in the medium term (Yusuf and Sumner, 2015).

The trend has continued in 2016 planned budget. There are at least two remarkable characteristics of the fiscal policy that have been enacted, i.e., the dramatically great spending for connectivity infrastructure development and for rural development (*dana desa,* or village fund). From the total government spending of IDR 2,095.7 trillions, as much as IDR 770.2 trillions are allocated for transfers to districts/municipalities including IDR 47.0 trillions for rural development (*dana desa,* or village fund). The number of villages (*desa* and *kelurahan*) in Indonesia is 81 253. In order to increase people's welfare and to equalize village development, it is targeted that each village receives maximum of IDR 1.4 billions depending on several parameters such as population size, poverty rate, area, and geographical conditions.

Basically, the objectives of this study is to compare the effectiveness of two sets of policy scenarios (*to develop from the peripheries versus to develop from the centers*) based on their performance on the economic growth and the inter-

regional income distribution. We need to stylize the concepts of "periphery" and "center" as follow. "Periphery" is backward regions (*daerah tertinggal,* left behind regions, as stipulated by Presidential Decree No. 131/2015); whereas "center" is advanced regions (*daerah maju*, the other regions). "Periphery" *versus* "center" can also be stylized as district (*kabupaten*) *versus* municipality (*kota*); Outer Islands *versus* Java Island; Eastern Indonesia *versus* Western Indonesia; and Agriculture dominated regions *versus* Non-Agriculture dominated regions.

2. SOME THEORETICAL CONSIDERATIONS

Instead of providing a comprehensive exposition on the literature of regional economic development, we will only review some core theories and models of regional economic development cited in a standard textbook (Stimson, Stough, and Roberts, 2006). More specifically, we will only discuss three theoretical models, namely agglomeration effects, growth poles, and economic base theories.

> *"[Agglomeration effects explain] why some regions develop large concentrations or clusters of certain types of economic activities… First, agglomeration economies are benefits available to individuals and firms in large concentrations of population and economic activity, as found in big cities and in some nodal concentrations of activities within them, such as for producer services in CBDs. Second, another form of agglomeration effects, economies of scale; refers to factors that make it possible for large organizations or regions to produce goods and services more cheaply than smaller ones. Third, economies of scope arise through the opportunities of large concentrations of population and activity provide for diversified activities to occur through linkages among firms of various sizes. Fourth, agglomeration refers to externality effects, which relate to the advantages gained through proximity to diversified business and market opportunities as a result of the concentration of people and activities in particular locations." (p. 27).*

This benefit of concentrations of economic activities does not support the idea of dispersing public investment across regions equally. On the contrary, it is more beneficial to concentrate the investment on a small number of locations. These locations are called the growth poles of an economy, the theory of which is explained as follows.

> *"[The growth poles] theory argues that economic development strategy should focus investment on a specific sector – that is the growth pole, or sectors, to initiate propulsive development. The growth pole is normally a regional economy's core basic industry. The notion is that as this 'pole' begins to expand, linkages are forged to other sectors as import substitution occurs." (p. 20).*

Similarly, the investment in the selected locations should be focused

on specific sectors, and should not be distributed to all or many sectors in the region. A guide for choosing the sectors for the investment is called the economic base theory which is explained as follows.

> *"In economic base theory, development is seen to occur through the expansion of the economic base because such development has a multiplying effect. Growth in the export base of a region means that funds flow into the local regional economy from the sale of locally produced goods and services to consumers outside of the region. New local consumption is generated through some of these externally generated funds. This new spending increases the receipts of local suppliers who then spend a part of these new receipts on additional local consumption. The process of cycling and recycling the externally derived receipts continues until the entire above referenced economic base derived receipts leak out of the local regional economy. The initial and subsequent rounds of spending, the so-called indirect and induced economic effects, multiply the effect of the initial increase in the economic base, thereby creating economic development - that is, the growth of jobs, income, output and value added is created by the multiplier effect." (p. 19-20).*

The above explained theories are the basis for our first hypothesis that the policy of "*to develop from the periphery*" is ineffective for enhancing the economic growth.

The basis of our second hypothesis that the policy is effective for improving interregional income distribution is very simple. Suppose that there are two alternatives of investment policy; the first is to invest only on a small number of regions (normally the potential ones which are called the growth poles), whereas the second is to invest in all regions in an economy. The first alternative, at least in the short run, would only boost the economic growth of the selected regions, and therefore this policy would widen the income gap between the advanved regions and the left behind ones. On the other hand, the second alternative would improve the economic growth of all regions including the poor ones. This second alternative narrows the income gap between the two groups of regions. Therefore, the second alternative, which is in line with the policy of "*to develop from the periphery*", is more effective for improving interregional income distribution.

3. METHODOLOGY OF THE EMPIRICAL ANALYSIS

We use the Statistics Indonesia (*Badan Pusat Statistik*) annual data of all districts (*kabupaten*) and municipalities (*kota*) in Indonesia for the years of 2010-2014. Statistically speaking, we analyze the whole population data that consist of 492 observation units (all districts and all municipalities in Indonesia). Consequently, to test the hypotheses we do not need to infer from the result of samples comparisons using any econometric method (using the *t-test* or any other sampling distribution based analyses). Instead,

we need only to compare the average of the (sub-)populations.

The first step is to find the economic base (the exporting sectors among the 17 sectors in each regional economy) of every region (district or municipality), by using the following location quotient (LQ) formula. The LQ describes the employment share of any sector in any region, relative to the national share of employment in the sector. A regional location quotient LQ_{ir} is defined as the ratio of the regional proportion of employment E in a given sector i in a given region r, relative to the national n proportion of employment in the same given sector (McCann, 2001).

$$LQ_{ir} = \frac{\frac{E_{ir}}{E_r}}{\frac{E_{in}}{E_n}} \quad (1)$$

In this case, E_{ir} is regional employment in sector i, E_r is total employment in region r, E_{in} is national employment in sector i, and E_n is total national employment. If we stress our analysis on interregional trade instead of international trade, then we can modify the formula by substituting "region" with "district or municipality"; and "national" with "provincial".

A location quotient which is greater than 1 will imply that the region must be a net exporter of the output of the particular sector. Conversely, a location quotient of less than 1 implies that a region is a net importer of the good in question. A location quotient of unity implies zero net regional trade flow.

For each region, we divide the sectors in the economy into two groups based on the LQ. The first group, the B, consists of sectors with $LQ > 1$. The second group, the N, consists of the other sectors. The employment structure in the local economy can be defined by

$$T = B + N, \quad (2)$$

where T is total regional employment, B is basic employment, and N is non-basic employment. Following McCann (2001), we assume the output of the non-basic sector is determined by the performance of the local economy as a whole, whereas the performance of the basic sector is determined by factors exogenous to the local economy. As such, we can write $N = nT$, where n is a coefficient between zero and one representing the sensitivity of employment generation in the non-basic sector to the total level of employment generated in the region.

Rewriting equation (2) gives

$$T = B + nT \quad (3)$$

which rearranges to

$$T - nT = B$$
$$(1-n)\,T = B. \quad (4)$$

The ratio T/B is called the economic base multiplier, and indicates the relationship between employment in the basic sector and employment in the total economy. The higher is the ratio T/B, the greater is the economic base multiplier. The economic base mul-

tiplier allows us to discuss the overall employment impacts associated with a change in the basic sector thus

$$\Delta T = [1 / (1-n)] \Delta B \qquad (5)$$

Therefore, for any change ΔB in the employment levels in the basic sector, total regional employment will increase by Δ*T*.

The employment that is expressed in equations (1) to (5) as *T, B,*and *N* can be substituted by income, output, or value added. More specifically, in equation (5) the ΔB can be substituted by investment injected into a region, whereas the Δ*T* can be interpreted as the returns of the investment (McCann, 2001, p. 154-155). From now on we will use these definitions.

For each region, we identify the economic base sector by using equation (1) and calculate its multiplier coefficient by equation (4). To show the effectiveness of the policy of "*to develop from the periphery*", we classify the regions into two groups, i.e., the center regions and the periphery regions, by using the definition in Table 1. A region is classified as agriculture dominated if the share of agriculture sector in the regional economy is greater than that in the national level. More specifically, if the share is greater than 30%, then the region is classified as agriculture dominated.

For each classification, we compare the average of coefficients of multiplier in the period of 2010-2014 between the center and the periphery. We will accept (reject) our first hypothesis that the policy of "*to develop from the periphery*" is ineffective for enhancing the economic growth if and only if the center's average of coefficients of multiplier is greater (less) than the periphery's.

Table 1. Classification of Center and Periphery Regions

Classification	Center	Periphery
I	Backward Regions Municipalities	Advanced Regions Districts
II	Java Island	Outer Islands
III	Western Indonesia	Eastern Indonesia
IV	Non-agriculture Dominance	Agriculture Dominance
V		

Our second hypothesis that the policy is effective for improving interregional income distribution, is in fact a mathematical truth. Therefore, instead of proving it mathematically, it is more interesting to show the point by conducting a set of simulations. Suppose that the government intends to allocate the village fund (*dana desa*) as much as IDR 47 trillions in total to all or some regions (municipalities or districts). Table 2 describes some possible strategies to allocate the fund. How effective are the allocation strategies in improving interregional income distribution?

We will use the Williamson Index to measure interregional income inequality, which is defined as follows.

$$WI = \sqrt{\frac{\sum_i (Y_i - \bar{Y})^2 n_i / n}{\bar{Y}}}$$

Table 2. Simulation of Allocation Strategies

Simulation	Description
0	**Baseline, no fund is allocated.**
1	**The fund is distributed to all regions.** Each region receives equal amount of fund.
2	**The fund is distributed only to backward regions (*daerah tertinggal*).** Advanced regions do not receive any fund.
3	**The fund is distributed only to districts.** Municipalities do not receive any fund. Each district receives equal amount of fund.
4	**The fund is distributed only to regions in the Outer Islands.** Regions in Java do not receive any fund. Each region in the Outer Islands receives equal amount of fund.
5	**The fund is distributed only to regions in Eastern Indonesia.** Regions in Western Indonesia do not receive any fund. Each region in Eastern Indonesia receives equal amount of fund.
6	**The fund is distributed only to regions in which the agriculture sector is dominant.** Regions in which the agriculture sector is not dominant do not receive any fund. Each region in which the agriculture sector is dominant receives equal amount of fund.

WI is the Williamson Index, Y_i is per capita gross regional domestic product (GRDP) of region-*i*, $\tilde{Y}$ is the average of GRDP over all regions (municipalities and districts) in Indonesia; similarly, n_i and n are population size of region-*i* and of Indonesia, respectively. The greater the *WI* the more inequal among per capita GRDP. See Williamson (1965) and Thompson (downloaded on June 23, 2016) for discussions of measuring regional inequalities.

4. RESULTS AND DISCUSSION

As a preliminary data exploration, we analyze the relationship between GRDP per capita and economic growth by using a scatter diagram (Figure 1). Each dot in the diagram represents a region (district or municipality). The vertical and horizontal lines represent the average value of GRDP per capita and economic growth, respectively. These lines group the regions into four categories.

In the first quadrant (high GRDP, high growth rate), there are 59 regions, two of them are Wajo and Mamuju Utara. In the second quadrant, in which the regions are represented by Maluku Barat Daya and Buleleng, there are 178 regions. Lani Jaya and Halmahera Timur are representatives of the third quadrant with 192 regions. Lastly, the fourth quadrant (with 63 regions) is represented by Kota Lhokseumawe and Teluk Bintuni. For discussions on measurement and further analyses, see Klasen (1994, 2003), and also Kakwani, Khandker, and Son (2004). It is interesting to notice that there is a negative correlation between GRDP per capita and economic growth (ρ = -0.218). This negative correlation indicates the trend of convergence. It means that in the long run the regions tend to be more homogeneous in term of welfare as measured by GRDP per capita.

Is the policy of "*to develop from the periphery*" effective in improving regional economic growth? The answer depends on how we define "the center" and "the periphery", as can

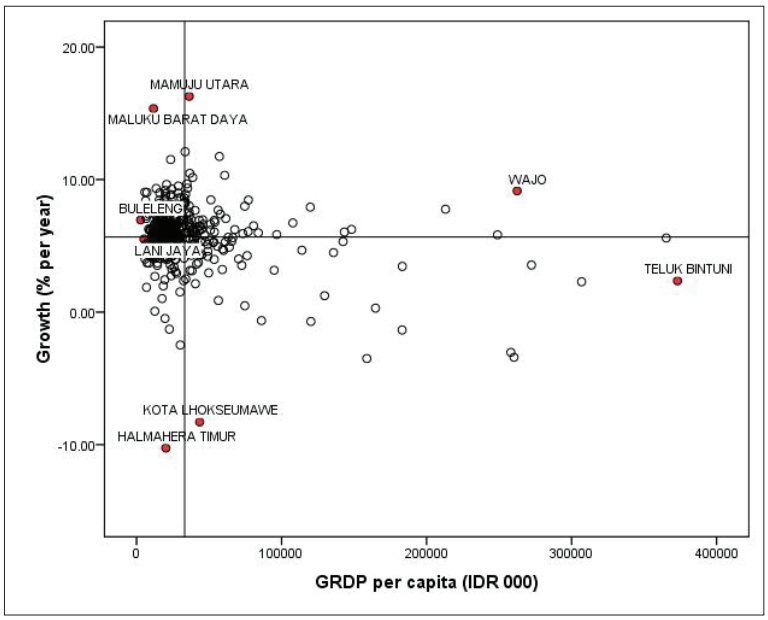


Figure 1. Classification of regions based on GRDP per capita and growth rate

be seen in Table 3. The numbers in column (2) and (3) represent the average of regional multiplier coefficients of the regions in the center and in the periphery, respectively. The difference between the values in column (2) and (3) is given by the values in column (4). Therefore, for each row, (4) = (2) – (3), i.e., value in column (4) is equivalent to value of column (2) minus value of column (3).

The first row of Table 3 explains **Case I** in which we compare the average of multiplier coefficients of *advanced regions* with the average of multiplier coefficients of *backward regions*. It shows that the average of multiplier coefficients of *advanced regions* (1.4981) is greater than that of *backward* regions (1.4485). Therefore, the returns on public investment as represented by the average multiplier coefficient is greater in the center regions (the *advanced regions*) than that in the periphery regions (the *backward regions*), i.e., 1.4981 > 1.4485. It means that if public investment allocated to *advanced regions* is greater than that allocated to *backward regions*, then overall national economic growth rate would be greater than otherwise. This confirms the first hypothesis. In fact, this finding is endorsed by most regional economic theories.

The same conclusion can be drawn when we define "center *vs.* periphery" as "Java Island *vs.* Outer Islands" and "Western Indonesia *vs.* Eastern Indonesia". Java and more generally Western Indonesia are more responsive to public investment than their respective complements. It means

Table 3. Average of Regional Multiplier Coefficients

Classification (1)	Center (2)	Periphery (3)	Difference (4) = (2) – (3)
I. Advanced *vs.* Backward	1.4981	1.4485	0.0496
II. Municipalities *vs.* Districts	1.3266	1.5176	(0.1910)
III. Java Island *vs.* Outer Islands	1.5346	1.4627	0.0719
IV. Western Indonesia *vs.* Eastern Indonesia	1.5034	1.4495	0.0539
v. Non-agriculture Dominance *vs.* Agriculture Dominance	1.4787	1.4811	(0.0024)

that the impact of public investment on regional economic growth in the center regions is greater than that in the periphery regions.

However, the opposite conclusion resulted when we define "center *vs.* periphery" as "municipalities *vs.* districts" and "agriculture dominated *vs.* non-agriculture dominated". In fact, it is interesting to note that there is a positive correlation between the shares of agriculture sector in the regional economies and the multiplier coefficients, i.e., $\rho = 0.1546$. It means that on average the greater the share of agriculture sector in a regional economy the higher the multiplier coefficient.

In this and the following paragraph we will discuss how effective policies can improve interregional income equality. Table 4 shows the effectiveness of policies of fund allocation over the periphery regions relative to the case when no fund is allocated (Simulation 0, the baseline). Our discussion does not involve any consideration of political feasibility. Instead, we will only compare the values of the Williamson Index (*WI*). The greater the *WI* the greater the inequality among regions. The *WI* in the baseline (no fund is allocated to any region) is used as the benchmark. Any policy of fund allocation to the regions in the simulations will improve the interregional income equality. The most effective policy to improve interregional income equality is to distribute the fund to backward regions only (Simulation 2). It can decrease the Williamson Index from the baseline, $WI = 1.1340$, to $WI = 1.0962$.

Table 4. The Williamson Index for the Policy Simulations

Simulation of Fund Allocation Strategies	Williamson Index	Ranking
0. Baseline (no fund is allocated)	1.1340	7 (Benchmark)
Uniform distribution	1.1086	6 (Worst)
Fund distributed to backward regions only	**1.0962**	1 (Best)
Fund distributed to districts only	1.1068	5
Fund distributed to Outer Islands only	1.1032	4
Fund distributed to Eastern Indonesia only	1.0979	2
Fund distributed to Agriculture Dominant regions only	1.1023	3

It is understandable that the least effective policy to improve interregional income equality is to equally distribute the fund to all regions (*WI* = 1.1086). However, it is interesting to note that the policy of allocating uniform amount of public investment to all regions could still slightly reduce the interregional income inequality, i.e. from *WI* = 1.1340 to *WI* = 1.1086. In fact, as mentioned earlier, all policies that are simulated (see Table 4) do reduce interregional income inequality.

5. CONCLUDING REMARKS

Hill, Resosudarmo, and Vidyattama (2009) identified four periods in the Indonesian modern economic history that explain how regions responded international and domestic events and eventually resulted in the local development outcomes. First, the 1970s oil boom disproportionately benefited the country's four resource rich provinces, even though much of the windfall gains accrued to the central government and oil companies. Second, the major policy reforms of the 1980s resulted in rapid, export-oriented industrialization mainly concentrated on Java and Bali, which in turn boosted the economic fortunes of these islands. Third, the economic crisis of 1997–98 particularly affected construction of the modern sector, finance, and import substituting manufacturing sectors, and, because these are mainly located on Java, this region experienced the sharpest decline in economic activity. Fourth, the decentralization program has transferred considerable financial resources and administrative authority from the central government to the second level tiers of government (*kabupaten and kota*) and, in the process, is likely to alter Indonesia's economic geography significantly.

The Jokowi's policy of *to develop from the periphery* intensifies further the trend of decentralization policy, not only to the second level tiers of government, but even to the village level, most remarkably exemplified by the village fund program (*program dana desa*). Many observers doubt the institutional capacity of village level administration in managing the relatively very large amount of village fund. All risks of decentralization policy, such as economic inefficiency and corruptions in local governments, will be intensified by the Jokowi's policy of *to develop from the periphery*.

Among the *nine* agenda of *Nawa Cita,* beside the third point of *to develop from the periphery*, there are two other points that are related to economic development, i.e., the sixth and the seventh point: (6) *to increase competitiveness*, and (7) *to strengthen economic sovereignty*. Basically, these three points are easily seen as translated into economic policy through fiscal reform. On the one hand, the inefficient subsidies inherited from the previous administrations (electricity, fuel, and energy subsidies) are reduced, whereas expenditures for stimulating the economy such as for infrastructure development, targeted social spending, education, and health are boosted.

Our study provides empirical evidence that the economy cannot rely on the policy of *to develop from the periphery* to enhance regional economic growth. Instead, the policy, as represented by the substantial budget for village fund (*dana desa*), for example, is more effective to improve interregional income equality than to bolster economic growth.

In fact, the increase in infrastructure spending, if realized, would create substantial additional employment and potentially reduce spatial inequality across the country. There are no guarantees, however, that the economic growth created by infrastructure investment will benefit the poor more than the rich, or that this investment will boost economic growth and reduce inequality more effectively than social spending targeted at poor or near-poor and vulnerable households. On the other hand, social spending, too, is not guaranted to reduce inequality. It depends on who benefits and to what extent (Yusuf and Sumner, 2015).

Effectiveness of "*to develop from the periphery"* policy in enhancing economic growth and improving interregional income equality is sensitive to the definition of periphery. Most regional economic theories endorse the policy of "*to develop from the center"* which are in general also supported by our findings. If the theories are assumed to be valid, then districts (*kabupaten*, i.e., regions that are dominated by rural areas) and agriculture sector dominated regions cannot be considered as periphery. Our empirical analysis shows that these two regional categories have higher multiplier coefficients than that of their respective complements, on average. It means that developing districts or agriculture dominated regions (i.e., increasing the public investment by distributing fund from the central government to these regions) is more effective for boosting economic growth than developing municipalities or non-agriculture dominated regions.

It is very important, therefore, to note that public investment in the rural level is effective to leverage the regional economic development. However, this supply side approach is more effective in the long run, because it takes much time for the infrastructure development to create employment and to improve regional economic efficiency. Therefore, the strategy of regional economic development through public investment in infrastructure development should be accompanied by shorter run demand side strategy that can strengthen the purchasing power of rural people.

The simulation indicates that the most severe interregional income inequality is between backward and advanced regions. This explains the finding that in Simulation 2 (all village fund is distributed only to backward regions) the Williamson inequality index reaches the minimum. This finding also supports the regional classification as stipulated in Presidential Decree No. 131/2015. The most effective policy to improve interregional income equality is to allocate public investment to backward regions.

The accuracy of the simulation results is limited because it is assumed that all villages have the same necessary capacity to manage the village fund. In reality, as mentioned earlier, it is doubtful that village leaders have the needed managerial capability. There is a possibility, for example, that the village fund will be saved in bank deposits as the safest way to earn gains from the public investment instead of investing the fund for infrastructure development that can create employment. Therefore, stronger regulations are needed to ensure that the village fund is spent in accordance with the objectives of the policy.

It is obvious that the methodology used in this study ignores several important factors such as the dynamic aspect considerations, interaction among the regions (spill over and back wash effects), the chanelling mechanism of causal transmission, and general equilibrium approach. We also realize that no political economic analysis was considered in this study. This fact limits the power of prediction and implementability of the results of this study. However, given the very limited data that record economic performance in the last two years, we believe that our methodology is probably the best approach that we could do.

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