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## Spatial Dimensions of Economic Growth, Redistribution, and Poverty Reduction During the Yudhoyono Period in Indonesia

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**Abstract.** *This research explores the spatial dimensions of economic growth, redistribution, and poverty reduction in Indonesia during the Susilo Bambang Yudhoyono period (i.e., from 2004 to 2014) using the poverty decomposition method, the growth incidence curve, and several pro-poor growth indices. I gathered my data from the annual National Socio-economic Surveys conducted in Indonesia between 2004 and 2014. Analyzing this data, my thesis presents three key economic insights about the Susilo Bambang Yudhoyono period: 1) poverty incidence significantly declined between 2004 and 2014, 2) the economic growth that occurred during this period was generally not pro-poor, made evident by an upward sloping growth incidence curve, and 3) regional differences exist in the shape of the growth incidence curve; the pro-pooriness of economic growth therefore varies between provinces. Using the classification system proposed by Kakwani and Pernia (2000), I classify provinces into the following five groups with respect to their pro-poor growth index (PPGI). Our empirical results support the pro-poor growth in a nation. However, some provinces such as North Maluku, Gorontalo and Bengkulu experienced non-pro-poor growth and weakly pro-poor. To promote the pro-poor growth in all provinces, the governmental supports in infrastructure and human capital development are essential for the above lagged provinces.*

**Keywords:** *Household Expenditures; Economic Growth; Redistribution; Poverty Reduction; Spatial Dimensions; Inequality; Poverty Decomposition Method; Growth Incidence Curve; Pro-Poor Growth Indices.*

Inequality in Indonesia is rapidly increasing. In 2002, 10% of the richest people in Indonesia consumed as much as what 42% of the poorest people consumed; in 2014, that same measure had increased to 54%. During the 1997 to 1998 Asian financial crisis, although poverty increased sharply, Indonesia's Gini Ratio also fell.

Everyone was affected, but the richest segment of the populace was hit hardest by the crisis. Since then, the ratio has increased from 0.30 points in 2000 to 0.41 points in 2014, the highest level recorded (World Bank, 2016).

Dabla-Norris, et al. (2015) demonstrated that a higher Gini coefficient

leads to lower and less stable economic growth. When the share of total income owned by the richest 20% increases by five percentage points, economic growth drops 0.4 percentage points. Conversely, when the share of total income held by the poorest 20% increases by five percentage points, economic growth increases by 1.9 percentage points. Profit sharing increases for 20% of the second and third poorest populations, which also increases growth.

A significant level of inequality can decrease economic growth for everyone, especially if those living in poverty are unable to properly invest in their children's improvement. In these conditions, their children remain vulnerable and cannot escape poverty and move into the consumer class. This subsequently leads to economically disadvantaged people being unable to obtain decent jobs, and they remain in the poverty cycle (World Bank, 2016).

However, economic growth is usually correlated with change in expenditure inequality namely redistribution. When economic growth is followed by an increase in inequality, poverty reduction will decrease. Furthermore, redistribution commonly looks harmless in its effect on growth; just

in extreme cases is there some evidence that it may have direct negative impacts on growth. Thus, the effects of direct and indirect redistribution - including the effects of growth from lower inequality - pro-growth averages. Redistribution that takes from the rich and provides for the poor is probably going to diminish the work supply of both the rich (who are exhausted more) and poor people (to the extent that they get implies tried advantages that lessen motivators to work). Whatever impacts this has on market wages, they are probably going to be generally balancing to the extent that they influence the two gatherings a similar way (IMF, 2014).

De Silva and Sumarto (2014) investigated the correlation between economic growth, redistribution, and poverty reduction in Indonesia between 2002 and 2012. These researchers used several pro-poor growth concepts and indices to determine whether growth in this period benefited the poor. Furthermore, Timmer (2014) argued that rapid pro-poor growth requires simultaneous, balanced interaction between growth and distribution processes. Influenced by Indonesian experiences, Timmer's (2014) research introduced a pro-poor growth model that encompassed three levels: improving the

*capabilities* of the poor; lowering transaction costs in the economy, especially between rural and urban areas; and increasing demand for those goods and services that are produced by the poor.

## **LITERATURE REVIEW**

Numerous studies (e.g., Datt & Ravallion, 1992; De Silva & Sumarto, 2014; Kakwani, 1997; Kakwani & Pernia, 2000; Kakwani & Son, 2008; Ravallion & Chen, 2003; Timmer, 2004) have analyzed the relationship between poverty reduction, economic growth, and income inequality. These researchers studied whether economic growth was pro-poor or not, while also considering the fact that poverty is influenced not only by economic growth, but also by changes in income inequality. They questioned whether economic growth was helpful for the alleviation of poverty prior to making adjustments for income inequality.

In Indonesia, studies of poverty and inequality are abundant because numerous researchers are attracted to studying the nexus between poverty, economic growth, and inequality (e.g., Akita & Lukman, 1999; Bhattacharyya & Resosudarmo, 2015; De Silva & Sumarto, 2014; Miranti, 2010; Suryahadi, Hadiwidjaja, & Sumarto,

2012; Suryahadi, Suryadarma, Sumarto, 2009; Timmer, 2004; Van Leeuwen & Földvári, 2016). For example, De Silva and Sumarto (2014) investigated the correlation between poverty, inequality, and economic growth in Indonesia between 2002 and 2012 and utilized several pro-poor growth methods and indices to define growth as pro-poor or not. In order to analyze the dynamics of pro-poor growth, their study applied growth-redistribution decompositions and pro-poorness indices. Their results showed that economic growth profited those households at the top of the expenditure distribution, while the poor received proportionately fewer advantages than the non-poor.

The majority of the studies that were discussed in this literature review focused on the nexus of poverty alleviation, economic growth, and redistribution in Indonesia as a whole. So, I attempt to explore the spatial dimensions of economic growth, redistribution, and poverty reduction in Indonesia, by region and province during Yudhoyono presidential period in 2004 and 2014.

## **METHODOLOGY**

This study analyzes the effect of economic growth and redistribution on

poverty reduction over the period from 2004 to 2014 using data from the National Socio-Economic Surveys (*Susenas*) in 2004 and 2014, which were conducted by the Central Bureau of Statistics. These surveys include information on household expenditure, location of households (urban and rural, regions and provinces) and household size. To estimate the amount of poverty, this study uses household expenditure data. After calculating per capita expenditure by dividing household expenditure by the number of household members, the amount of poverty is estimated by comparing per capita expenditure with the official poverty lines.<sup>1</sup> Households under the official poverty lines are considered to be poor; thus, the incidence of poverty (or head count ratio) is obtained by dividing the number of households under the official poverty lines by the total number of households. It should be noted that to calculate real economic growth, expenditures in 2014 are converted to expenditures at constant 2004 prices.

To analyze the extent to which economic growth and redistribution have reduced or raised poverty between 2004 and 2014 in Indonesia, this study employs

the method developed by Kakwani (1997). Using this poverty function, the change in poverty between 2004 (year 1) and 2014 (year 2) can be decomposed into the growth effect (*GE*) and redistribution effect (*IE*) as follows.

$$\begin{aligned}\Delta P &= P(z, \mu_2, L_2) - P(z, \mu_1, L_1) \\ &= GE + IE\end{aligned}$$

## **ANALYSIS AND FINDINGS**

It should be noted that there are now 34 provinces in Indonesia, eight of which have been created since 1999 under decentralization, i.e., North Maluku (formerly, Maluku), West Papua (formerly, Papua), Banten (formerly, West Java), Bangka Belitung Islands (formerly, South Sumatra), Gorontalo (formerly, North Sulawesi), Riau Islands (formerly, Riau), West Sulawesi (formerly, South Sulawesi) and North Kalimantan (formerly, East Kalimantan). But, in this study, West Papua, Riau Islands, West Sulawesi and North Kalimantan are merged, respectively, with Papua, Riau, South Sulawesi and East Kalimantan. Therefore, the analysis is conducted using 30 provinces.

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<sup>1</sup>The official poverty lines are available for urban and rural areas in each province.

## Changes in Poverty

Table 1 shows changes in the incidence of poverty (i.e., poverty headcount ratio, defined by equation (4)) by

region and by province. Indonesia saw a significant decrease in the incidence of poverty in the period, from 27.3% to 10.0%.<sup>2</sup>

**Table 1. Poverty Headcount Ratio in 2004 and 2014 and Change in Poverty Headcount Ratio between 2004 and 2014 (in %)**

Province	2004 (A)	2004 Rank	2014 (B)	2014 Rank	Absolute change in poverty headcount ratio "= (B) – (A)"	Proportional change in poverty headcount ratio <sup>(1)</sup>
Aceh	26	10	16.3	3	-9.6	-4.6
North Sumatera	18	23	7.7	19	-10.3	-8.5
West Sumatera	26.5	9	6.6	22	-19.9	-13.9
Riau	26	11	6.6	23	-19.3	-13.6
Jambi	19.9	21	8	17	-11.9	-9.1
South Sumatera	24.4	13	12.7	10	-11.7	-6.5
Bengkulu	20.6	18	16.5	2	-4.1	-2.2
Lampung	32.2	4	13.9	7	-18.4	-8.4
Bangka Belitung	18.5	22	5.7	24	-12.8	-11.7
Jakarta	9.1	29	3	30	-6.2	-11.2
West Java	22.1	17	8.4	16	-13.6	-9.6
Central Java	35.4	3	13.4	8	-22	-9.7
Yogyakarta	29.4	7	11.9	12	-17.5	-9.1
East Java	39.1	2	11.5	13	-27.6	-12.2
Banten	14.7	27	4.8	27	-9.9	-11.2
Bali	14.4	28	3.7	29	-10.6	-13.4
West Nusa Tenggara	32	5	15.8	6	-16.2	-7
East Nusa Tenggara	31.6	6	16.3	4	-15.3	-6.6
West Kalimantan	17.5	25	7.9	18	-9.6	-8
Central Kalimantan	20.6	19	5.4	26	-15.2	-13.3
South Kalimantan	16	26	3.8	28	-12.2	-14.4
East Kalimantan	20.1	20	5.7	25	-14.4	-12.7
North Sulawesi	17.9	24	7.3	20	-10.5	-8.9
Central Sulawesi	28.2	8	12	11	-16.1	-8.5
South Sulawesi	25.2	12	9	15	-16.2	-10.3
South East Sulawesi	24	14	11	14	-13	-7.8
Gorontalo	23.4	16	16	5	-7.3	-3.8
Maluku	23.7	15	13.2	9	-10.5	-5.9
North Maluku	4.2	30	7.2	21	3	5.4
Papua	49.4	1	22.9	1	-26.5	-7.7
Indonesia	27.3		10		-17.3	-10
Region						
Sumatra	24	4	10.2	2	-13.8	-8.6
Java-Bali	29.2	1	9.7	4	-19.4	-11
Kalimantan	18.2	5	5.7	5	-12.4	-11.5
Sulawesi	24.1	3	9.9	3	-14.2	-8.9
East Indonesia	28.2	2	16.9	1	-11.3	-5.1
Indonesia	27.3		10		-17.3	-10

Calculated from *Susenas* 2004 and 2014.

<sup>2</sup>The incidence of poverty is estimated using the official poverty lines for urban and rural areas in each province. Our estimate in 2004 at 27% is much larger than the one reported by the Central Bureau of Statistics (18%), but the result of our pro-poor

growth analysis will not be changed qualitatively. It should be noted that the headcount ratio of 18% can be obtained by lowering the official poverty lines by 10%.

## Economic Growth

As discussed in the previous chapter, the change in poverty can be decomposed into growth and redistribution components. It is thus imperative to investigate economic growth and redistribution (i.e., changes in inequality) in the study period. This section will present

economic growth by region and province, where economic growth is measured by the growth of mean per capita expenditure. Table 2 shows annual average growth rate of mean per capita expenditure. Over the period from 2004-2014, mean per capita expenditure has increased at an annual average growth rate of 5.5% in Indonesia.

**Table 2. Annual Average Growth Rate of Mean Per Capita Expenditure (in Rupiah) between 2004 and 2014 (at 2004 Constant Prices)**

Province	Mean Per Capita Expenditure		Growth rate		Population Share	
	2004	2014	Growth rate	Rank	2004	2014
Aceh	202,250	259,628	2.50%	30	1.70%	1.80%
North Sumatera	214,800	301,369	3.40%	25	4.60%	5.00%
West Sumatera	225,440	365,050	4.80%	17	1.80%	1.90%
Riau	301,760	535,274	5.70%	10	2.30%	3.10%
Jambi	207,052	310,820	4.10%	19	1.10%	1.30%
South Sumatera	184,783	313,857	5.30%	15	2.80%	3.00%
Bengkulu	191,671	257,334	2.90%	28	0.60%	0.70%
Lampung	166,901	247,997	4.00%	22	2.80%	3.20%
Bangka Belitung	257,159	365,442	3.50%	24	0.40%	0.50%
Jakarta	519,288	762,730	3.80%	23	3.60%	4.00%
West Java	220,854	424,052	6.50%	6	18.90%	19.00%
Central Java	180,000	310,983	5.50%	12	15.70%	13.90%
Yogyakarta	270,803	381,836	3.40%	26	1.80%	1.70%
East Java	182,337	322,176	5.70%	11	19.00%	16.30%
Banten	256,943	465,126	5.90%	8	3.70%	4.30%
Bali	303,913	608,274	6.90%	4	1.80%	1.70%
West Nusa Tenggara	166,588	283,427	5.30%	14	1.80%	2.00%
East Nusa Tenggara	151,452	213,074	3.40%	27	1.50%	1.70%
West Kalimantan	205,660	349,965	5.30%	13	1.50%	1.70%
Central Kalimantan	221,695	414,965	6.30%	7	0.80%	1.00%
South Kalimantan	227,564	380,050	5.10%	16	1.50%	1.70%
East Kalimantan	350,281	465,455	2.80%	29	1.20%	1.50%
North Sulawesi	231,784	490,653	7.50%	2	1.10%	0.90%
Central Sulawesi	196,332	309,442	4.50%	18	0.90%	1.10%
South Sulawesi	189,354	382,604	7.00%	3	3.20%	3.50%
South East Sulawesi	184,198	328,198	5.80%	9	0.70%	0.90%
Gorontalo	167,087	328,311	6.80%	5	0.40%	0.40%
Maluku	210,947	316,725	4.10%	21	0.40%	0.50%
North Maluku	149,115	340,475	8.30%	1	1.30%	0.40%
Papua	231,109	352,835	4.20%	20	1.00%	1.50%
<b>Indonesia</b>	<b>217,178</b>	<b>377,946</b>	<b>5.50%</b>			
Region	2004	2014	Growth rate			
Sumatra	213,334	333,143	4.50%	5	18.10%	20.40%
Java-Bali	222,101	400,204	5.90%	2	64.60%	60.80%
Kalimantan	248,397	399,296	4.70%	4	5.00%	5.90%
Sulawesi	195,543	375,740	6.50%	1	6.30%	6.80%
East Indonesia	173,312	287,968	5.10%	3	6.10%	6.10%
<b>Indonesia</b>	<b>217,178</b>	<b>377,946</b>	<b>5.50%</b>			

Calculated from *Susenas* 2004 and 2014.

## Redistribution

If there is no change in expenditure inequality, economic growth should reduce the incidence of poverty (i.e., headcount ratio). However, economic growth is usually associated with the change in expenditure inequality. When economic growth is accompanied by rising inequality, then the reduction of poverty will be lessened. To analyze the extent to which economic growth was conducive to the reduction of poverty, it is necessary to know whether economic growth was accompanied by rising expenditure inequality or not. Tables 3 and 4 present expenditure inequality, respectively, in 2004 and 2014, where inequality is measured by the Theil L and T indices and the Gini coefficient.<sup>3</sup> These tables present also the result of a decomposition analysis by provinces using the Theil L and T indices.<sup>4</sup> As measured by the Gini coefficient, expenditure inequality was 0.34

in 2004 in Indonesia, but has increased notably to 0.43 in 2014.

## Economic Growth, Redistribution and Poverty Reduction: Pro-poorness of Economic Growth

As discussed in the previous section, economic growth should reduce the incidence of poverty if there is no change in expenditure inequality. However, economic growth is usually associated with the change in expenditure inequality. When economic growth is accompanied by declining inequality, then it is said to be pro-poor. On the other hand, when economic growth is accompanied by rising inequality, it is not pro-poor. If rising inequality does not wholly offset the poverty-reducing effect of economic growth, however, the incidence of poverty will decrease even though the growth is not strictly pro-poor. It will analyze the pro-poorness of economic growth for each province. Since most Indonesian provinces experienced a rise in expenditure

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<sup>3</sup>The Gini coefficient is obtained by the following formula.

$$G = \frac{2}{n\mu} \text{cov}(i, y_i)$$
 where  $n$  is total number of households,  $\mu$  is the mean per capita expenditure,  $y_i$  is per capita expenditure of household  $i$ , and  $\text{cov}(a, b)$  is the covariance between variables  $a$  and  $b$ . The Gini coefficient ranges between 0 (perfect equality) and 1 (perfect inequality).

<sup>4</sup>Theil indices can be decomposed additively into the within-province and between-province inequality components ( $L_W$  and  $L_B$  or  $T_W$  and  $T_B$ ) as follows:

$$L = \frac{1}{n} \sum_{i=1}^{30} \sum_{j=1}^{n_i} \ln \left( \frac{\mu}{y_{ij}} \right) = L_W + L_B \quad \text{and} \quad T = \frac{1}{n} \sum_{l=1}^{30} \sum_{j=1}^{n_l} \frac{y_{lj}}{\mu} \ln \left( \frac{y_{lj}}{\mu} \right) = T_W + T_B$$

where  $n$  is total number of households,  $\mu$  is the mean per capita expenditure and  $y_{ij}$  is per capita expenditure of household  $j$  in province  $i$ .

inequality, their economic growth was not strictly pro-poor. Nonetheless, they achieved the reduction of the incidence of poverty, since rising inequality did not

wholly offset the poverty-reducing effect of economic growth. Therefore, this section investigates relative pro-pooriness of economic growth.

**Table 3. Inequality in Per Capita Expenditure in 2004**

Province	Theil L	Contribution	Theil T	Contribution	Gini
Aceh	0.141	1.3%	0.155	1.0%	0.294
North Sumatera	0.132	3.3%	0.152	3.0%	0.283
West Sumatera	0.150	1.5%	0.169	1.4%	0.304
Riau	0.175	2.2%	0.202	2.8%	0.328
Jambi	0.121	0.7%	0.136	0.6%	0.271
South Sumatera	0.123	1.8%	0.134	1.4%	0.275
Bengkulu	0.143	0.5%	0.164	0.4%	0.298
Lampung	0.142	2.2%	0.159	1.5%	0.295
Bangka Belitung	0.119	0.3%	0.127	0.3%	0.270
Jakarta	0.251	4.9%	0.354	13.3%	0.385
West Java	0.144	14.7%	0.167	13.9%	0.295
Central Java	0.133	11.3%	0.155	8.8%	0.287
Yogyakarta	0.282	2.8%	0.319	3.1%	0.420
East Java	0.156	16.0%	0.197	13.5%	0.309
Banten	0.163	3.2%	0.191	3.6%	0.314
Bali	0.146	1.4%	0.145	1.6%	0.294
West Nusa Tenggara	0.138	1.3%	0.157	0.9%	0.292
East Nusa Tenggara	0.156	1.3%	0.173	0.8%	0.311
West Kalimantan	0.156	1.3%	0.181	1.1%	0.308
Central Kalimantan	0.129	0.6%	0.140	0.5%	0.282
South Kalimantan	0.148	1.2%	0.164	1.1%	0.302
East Kalimantan	0.237	1.5%	0.317	2.6%	0.377
North Sulawesi	0.121	0.7%	0.130	0.6%	0.274
Central Sulawesi	0.166	0.8%	0.210	0.7%	0.318
South Sulawesi	0.161	2.8%	0.188	2.3%	0.314
South East Sulawesi	0.134	0.5%	0.142	0.4%	0.286
Gorontalo	0.143	0.3%	0.151	0.2%	0.296
Maluku	0.145	0.3%	0.166	0.3%	0.296
North Maluku	0.034	0.2%	0.044	0.2%	0.099
Papua	0.200	1.1%	0.213	1.0%	0.348
Within-province	0.152	81.8%	0.191	82.7%	
Between-province	0.034	18.2%	0.040	17.3%	
Indonesia	0.185	100.0%	0.231	100.0%	0.337
Region	Theil L	Contribution	Theil T	Contribution	Gini
Sumatra	0.155	15.2%	0.176	13.6%	0.308
Java-Bali	0.196	68.4%	0.251	71.7%	0.347
Kalimantan	0.191	5.1%	0.239	5.9%	0.340
Sulawesi	0.154	5.2%	0.176	4.3%	0.308
East Indonesia	0.145	4.8%	0.167	3.5%	0.295
Within-region	0.183	98.7%	0.229	99.0%	
Between-region	0.002	1.3%	0.002	1.0%	
Indonesia	0.185	100.0%	0.231	100.0%	0.337

(Source) Calculated from *Susenas* 2004 and 2014.



**Table 4. Inequality in Per Capita Expenditure in 2014  
(at 2004 Constant Prices)**

Province	Theil L	Contribution	Theil T	Contribution	Gini
Aceh	0.189	1.2%	0.217	0.8%	0.343
North Sumatera	0.175	2.9%	0.202	2.3%	0.329
West Sumatera	0.208	1.3%	0.241	1.2%	0.359
Riau	0.255	2.7%	0.289	3.6%	0.398
Jambi	0.191	0.8%	0.232	0.7%	0.343
South Sumatera	0.267	2.7%	0.316	2.2%	0.406
Bengkulu	0.237	0.6%	0.281	0.4%	0.383
Lampung	0.212	2.3%	0.263	1.6%	0.361
Bangka Belitung	0.174	0.3%	0.215	0.3%	0.326
Jakarta	0.282	3.8%	0.327	7.5%	0.415
West Java	0.296	19.0%	0.354	21.4%	0.426
Central Java	0.253	11.9%	0.311	10.1%	0.395
Yogyakarta	0.291	1.7%	0.334	1.6%	0.423
East Java	0.251	13.9%	0.313	12.4%	0.393
Banten	0.284	4.1%	0.324	4.8%	0.417
Bali	0.298	1.7%	0.329	2.6%	0.422
West Nusa Tenggara	0.284	2.0%	0.340	1.5%	0.419
East Nusa Tenggara	0.240	1.3%	0.305	0.8%	0.385
West Kalimantan	0.300	1.7%	0.346	1.6%	0.429
Central Kalimantan	0.235	0.8%	0.263	0.8%	0.381
South Kalimantan	0.218	1.2%	0.255	1.2%	0.365
East Kalimantan	0.199	1.0%	0.234	1.3%	0.350
North Sulawesi	0.312	1.0%	0.341	1.2%	0.435
Central Sulawesi	0.264	0.9%	0.342	0.8%	0.402
South Sulawesi	0.328	3.9%	0.383	3.8%	0.445
South East Sulawesi	0.283	0.8%	0.325	0.7%	0.416
Gorontalo	0.371	0.5%	0.418	0.4%	0.470
Maluku	0.210	0.4%	0.227	0.3%	0.360
North Maluku	0.274	0.3%	0.316	0.3%	0.412
Papua	0.318	1.6%	0.343	1.4%	0.439
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Within-province	0.261	88.5%	0.315	89.5%	
Between-province	0.034	11.5%	0.037	10.5%	
Total	0.295	100.0%	0.352	100.0%	0.425
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Region		Contribution		Contribution	
Sumatra	0.246	17.0%	0.290	14.8%	0.389
Java-Bali	0.306	63.1%	0.368	67.3%	0.433
Kalimantan	0.246	4.9%	0.280	4.9%	0.387
Sulawesi	0.322	7.4%	0.375	7.2%	0.442
East Indonesia	0.292	6.0%	0.339	4.5%	0.425
Within-region	0.291	98.4%	0.347	98.7%	
Between-region	0.005	1.6%	0.005	1.3%	
Total	0.295	100.0%	0.352	100.0%	0.425

(Source) Calculated from *Susenas* 2004 and 2014.

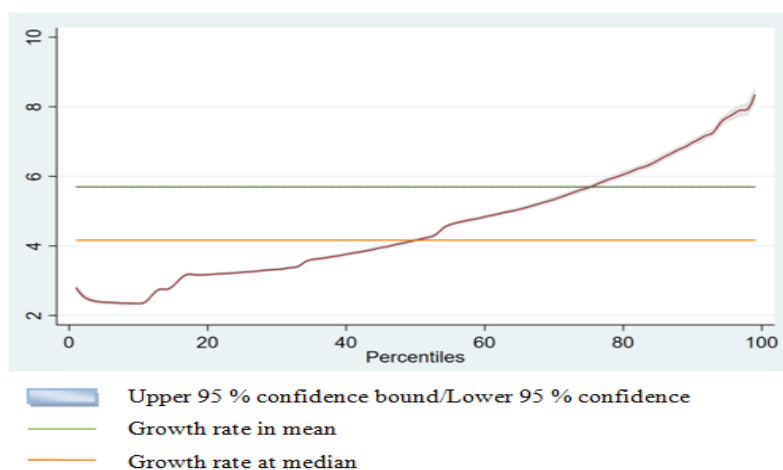
In the period from 2004 to 2014, Indonesia grew at 5.5% in terms of mean per capita expenditure (see Table 2) and achieved a

substantial reduction in the incidence of poverty (see Table 1). However, it saw a rise in expenditure inequality; thus, the

growth was not pro-poor in Indonesia. Figure 1 exhibits the growth incidence curve for Indonesia. An upward sloping curve indicates Indonesian economic

growth was not pro-poor, since poorer households grew at much smaller rate than the national average.

**Figure 1. Growth Incidence Curve for Indonesia**



Source: Estimated from SUSENAS 2004 and 2014

As shown in Table 5, West Sumatera and Bangka Belitung recorded a very large decrease in the incidence of poverty, though their growth rates were not large. This is due to relatively small increase in expenditure inequality. Jakarta also grew less rapidly, but its inequality rose only slightly and thus the incidence of poverty has declined by 6.2 percentage points.

There is a large variation among provinces in terms of pro-poorness of economic growth. Employing the classification described above, provinces are classified into the following five groups. The five groups are classified in:

- $PPGI < 0$ , growth is anti poor North Maluku
- $0 < PPGI \leq 0.33$ , growth is weakly pro-poor Gorontalo, & Bengkulu
- $0.33 < PPGI \leq 0.66$ , growth is moderately pro-poor Aceh, North Sumatera, Jambi, South Sumatera, West Java, Banten, Central Java, East Java, Bali, West Kalimantan, Central Kalimantan, South East Sulawesi, North Sulawesi, South Sulawesi, Central Sulawesi, East Nusa Tenggara, West Nusa Tenggara, Maluku
- $0.66 < PPGI < 1.0$ , growth is pro-poor Riau, West Sumatera, Bangka

**Spatial Dimensions of Economic Growth, Redistribution, and Poverty Reduction During the Yudhoyono Period in Indonesia**

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Belitung, Jakarta, South - PPGI  $\geq 1.0$ , growth is highly pro-poor Yogyakarta, East Kalimantan, Kalimantan Papua.

**Table 5. Decomposition of Change in Poverty into Growth and Redistribution**

Province	Poverty in 2004 (1)	Poverty in 2014 (2)	Change in poverty (3) = (2) – (1) = (GE) + (IE)	Change in poverty due to growth (GE)	Change in poverty due to redistribution (IE)	Annual average rate of change in poverty
Aceh	26.0	16.3	-9.6	-16.9	7.3	-4.6
North Sumatera	18.0	7.7	-10.3	-16.2	5.9	-8.5
West Sumatera	26.5	6.6	-19.9	-27.3	7.3	-13.9
Riau	26.0	6.6	-19.3	-28.1	8.8	-13.6
Jambi	19.9	8.0	-11.9	-21.2	9.3	-9.1
South Sumatera	24.4	12.7	-11.7	-27.1	15.4	-6.5
Bengkulu	20.6	16.5	-4.1	-17.5	13.4	-2.2
Lampung	32.2	13.9	-18.4	-27.8	9.4	-8.4
Bangka Belitung	18.5	5.7	-12.8	-18.0	5.2	-11.7
Jakarta	9.1	3.0	-6.2	-10.7	4.5	-11.2
West Java	22.1	8.4	-13.6	-29.2	15.6	-9.6
Central Java	35.4	13.4	-22.0	-34.7	12.7	-9.7
Yogyakarta	29.4	11.9	-17.5	-17.3	-0.2	-9.1
East Java	39.1	11.5	-27.6	-36.8	9.3	-12.2
Banten	14.7	4.8	-9.9	-21.8	11.9	-11.2
Bali	14.4	3.7	-10.6	-21.7	11.1	-13.4
West Nusa Tenggara	32.0	15.8	-16.2	-31.7	15.6	-7.0
East Nusa Tenggara	31.6	16.3	-15.3	-25.0	9.7	-6.6
West Kalimantan	17.5	7.9	-9.6	-23.2	13.6	-8.0
Central Kalimantan	20.6	5.4	-15.2	-25.7	10.6	-13.3
South Kalimantan	16.0	3.8	-12.2	-19.2	7.0	-14.4
East Kalimantan	20.1	5.7	-14.4	-11.9	-2.6	-12.7
North Sulawesi	17.9	7.3	-10.6	-26.9	16.4	-8.9
Central Sulawesi	28.2	12.0	-16.1	-27.1	10.9	-8.5
South Sulawesi	25.2	9.0	-16.2	-30.6	14.4	-10.3
South East Sulawesi	24.0	11.0	-13.0	-27.9	14.9	-7.8
Gorontalo	23.4	16.0	-7.3	-27.9	20.6	-3.8
Maluku	23.7	13.2	-10.5	-21.2	10.7	-5.9
North Maluku	4.2	7.2	3.0	-28.8	31.8	5.4
Papua	49.4	22.9	-26.5	-21.4	-5.1	-7.7
Indonesia	27.3	10.0	-17.3	-29.2	11.9	-10.0
<b>Region</b>						
Sumatra	24.0	10.2	-13.8	-24.4	10.6	-8.6
Java-Bali	29.2	9.7	-19.4	-31.2	11.7	-11.0
Kalimantan	18.2	5.7	-12.4	-19.7	7.3	-11.5
Sulawesi	24.1	9.9	-14.2	-29.4	15.2	-8.9
East Indonesia	28.2	16.9	-11.3	-27.3	16.0	-5.1
Indonesia	27.3	10.0	-17.3	-29.2	11.9	-10.0

(Source) Calculated from *Susenas* 2004 and 2014.

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**Table 6. Pro-poor Growth Indices**

Province	Annual average growth rate of mean per capita expenditure (1)	Growth elasticity of poverty (2)	Growth elasticity of poverty without redistribution (3)	PPGI (Kakwani&Pernia) (4) = (2)/(3)	PEGR (Kakwani& Son) (5) = (4)×(1)
Aceh	2.5%	-1.86	-3.20	0.58	1.4%
North Sumatera	3.4%	-2.50	-3.97	0.63	2.1%
West Sumatera	4.8%	-2.89	-3.88	0.75	3.6%
Riau	5.7%	-2.38	-3.51	0.68	3.9%
Jambi	4.1%	-2.24	-3.81	0.59	2.4%
South Sumatera	5.3%	-1.23	-3.25	0.38	2.0%
Bengkulu	2.9%	-0.75	-3.63	0.21	0.6%
Lampung	4.0%	-2.13	-3.27	0.65	2.6%
Bangka Belitung	3.5%	-3.34	-4.42	0.76	2.7%
Jakarta	3.8%	-2.92	-4.22	0.69	2.7%
West Java	6.5%	-1.47	-3.52	0.42	2.7%
Central Java	5.5%	-1.77	-3.88	0.46	2.5%
Yogyakarta	3.4%	-2.63	-2.37	1.11	3.8%
East Java	5.7%	-2.15	-3.69	0.58	3.3%
Banten	5.9%	-1.89	-3.84	0.49	2.9%
Bali	6.9%	-1.94	-3.99	0.49	3.4%
West Nusa Tenggara	5.3%	-1.32	-3.09	0.43	2.3%
East Nusa Tenggara	3.4%	-1.95	-3.24	0.60	2.1%
West Kalimantan	5.3%	-1.50	-3.75	0.40	2.1%
Central Kalimantan	6.3%	-2.12	-3.87	0.55	3.4%
South Kalimantan	5.1%	-2.81	-4.09	0.69	3.5%
East Kalimantan	2.8%	-4.46	-3.63	1.23	3.5%
North Sulawesi	7.5%	-1.19	-3.45	0.35	2.6%
Central Sulawesi	4.5%	-1.87	-3.55	0.53	2.4%
South Sulawesi	7.0%	-1.47	-3.39	0.43	3.0%
South East Sulawesi	5.8%	-1.35	-3.29	0.41	2.4%
Gorontalo	6.8%	-0.56	-2.79	0.20	1.3%
Maluku	4.1%	-1.45	-3.29	0.44	1.8%
North Maluku	8.3%	0.65	-4.28	-0.15	-1.3%
Papua	4.2%	-1.82	-1.38	1.32	5.6%
Indonesia	5.5%	-1.81	-3.52	0.51	2.7%
<b>Region</b>					
Sumatra	4.5%	-1.93	-3.49	0.55	2.5%
Java-Bali	5.9%	-1.86	-3.70	0.50	3.0%
Kalimantan	4.7%	-2.43	-3.77	0.64	3.1%
Sulawesi	6.5%	-1.36	-3.41	0.40	2.6%
East Indonesia	5.1%	-1.00	-2.39	0.42	2.1%
Indonesia	5.5%	-1.81	-3.52	0.51	2.7%

(Source) Calculated from *Susenas* 2004 and 2014.

## CONCLUSION

Based on the 2004 and 2014 National Socio-Economic Surveys (Susenas), this study attempted to analyze the relationship between economic growth, redistribution and poverty reduction from a spatial perspective in Indonesia during the Yudhoyono period from 2004 to 2014 using the poverty decomposition method, the growth incidence curve and pro-poor growth indices. The following provides a summary of findings. First, in the period from 2004 to 2014, Indonesia grew at 5.5% and achieved a substantial reduction in the incidence of poverty from 27% to 10%. However, it experienced a rise in expenditure inequality. Though economic growth reduced the incidence of poverty, the growth was not pro-poor since the rise in inequality lessened the poverty reducing effect of economic growth as indicated by the upward sloping growth incidence curve. Second, all regions, i.e., Sumatra, Java-Bali, Kalimantan, Sulawesi and East Indonesia, had an upward sloping growth incidence curve and their pro-poor growth index (PPGI) ranged between 0.40 and 0.64. In other words, their economic growth was not strictly pro-poor. However, the shape of the growth incidence curve differs

between regions, reflecting the difference in economic growth and redistribution.

Third, there is a large variation among provinces in the pro-poorness of economic growth. Using the classification proposed by Kakwani and Pernia(2000), provinces can be classified into the following five groups with respect to the pro-poor growth index (PPGI): (1)  $PPGI < 0$ , growth is antipoor;(2)  $0 < PPGI \leq 0.33$ , growth is weakly pro-poor;(3)  $0.33 < PPGI \leq 0.66$ , growth is moderately pro-poor;(4)  $0.66 < PPGI < 1.0$ , growth is pro-poor; and(5)  $PPGI \geq 1.0$ , growth is highly pro-poor. Out of 30 provinces, 19 provinces are placed in group (3). Among the other 11 provinces, only North Maluku is in group (3), as its PPGI is negative. North Maluku registered an increase in the incidence of poverty, due to a large increase in expenditure inequality. Fourth, Gorontalo and Bengkulu are placed in group (2). Like North Maluku, Gorontalo achieved a very high growth, but the reduction of poverty is very small due to a large increase in inequality. While Bengkulu had a relatively small increase in inequality, its growth was also small and thus, the incidence of poverty has declined only slightly.

Fifth, Riau, West Sumatra, Bangka Belitung, Jakarta and South Kalimantan are

in group (4) and their economic growth is pro-poor. Among provinces in group (4), Riau, West Sumatera and Bangka Belitung are Sumatra provinces. West Sumatera and Bangka Belitung recorded a very large decrease in the incidence of poverty, though their growth rates were not large. This is due to relatively small increase in expenditure inequality. Jakarta also grew less rapidly, but its inequality rose only slightly and thus the incidence of poverty has declined. Sixth, Yogyakarta, East Kalimantan and Papua are in group (5) and achieved highly pro-poor growth, as their PPGI exceeds one. East Kalimantan is the only province that experienced a decrease in expenditure inequality. Though its growth rate was much smaller than the national average, it reduced its incidence of poverty. The growth incidence curve is slightly downward sloping. Papua realized a large reduction in the incidence of poverty from 49% to 23%. The change in poverty due to redistribution was negative in Papua, meaning that the change in expenditure inequality was conducive to the reduction of poverty. Though Yogyakarta grew at a much smaller rate than the national average, its expenditure inequality remained almost constant and thus, its PPGI exceeds one.

### **Policy Implications**

From these findings, some policy implications can be obtained. First, economic growth is moderately pro-poor in all regions according to the criteria proposed by Kakwani and Pernia (2000). But there is a large variation in the pro-poorness of economic growth among provinces. To achieve a balanced pro-poor growth across provinces, the government needs to formulate policies which take into account differences in natural and human resources, economic activities and infrastructure. Community empowerment program such as village fund (dana desa) is one possible solution as it can promote the development, especially in a remote area with exploring the local resources.

Second, though the provinces of Papua and West and East Nusa Tenggara realized a moderately or highly pro-poor growth, their incidence of poverty was still high in 2014. To further reduce their incidence of poverty, the government needs to introduce policies to accelerate economic growth as their growth rates were below the national average. Additionally, it should implement policies to reduce inequality. In Papua and West Papua are still doing development of toll road called trans Papua. While in East Nusa Tenggara developing

water resource with constructing Mbay Dam started in 2018 and Kolhua Dam, in West Nusa Tenggara Meninting Dam also under construction. (Ministry of Public Works, 2018).

Third, Bengkulu and Gorontalo still had a very high incidence of poverty in 2014 and its economic growth was weakly pro-poor. Though Bengkulu registered a relatively low inequality, its growth performance was very weak. The government should thus introduce policies to promote economic growth for this province. On the other hand, Gorontalo achieved a very high economic growth, but its inequality has risen substantially and the province had the highest inequality in 2014.

Therefore, the government needs to strengthen redistributive policies to alleviate inequality. To enhance the economic growth of Bengkulu Province, Ministry of Public Work will construct five bridges in North Bengkulu to support neighbourhood economically (Ministry of Public Works, 2018). On the other hand, the process of developing the Gorontalo or Gorontalo Outer Ring Road (GORR) ring road entered the third segment. (Economic Business, 2019).

## **ACKNOWLEDGEMENT**

Thank you to the Professor in Public Management and Administration of Rikkyo University, Tokyo Japan for the support given in carrying out this research.

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