The Dynamics of Economic Growth and Development Inequality in Borneo Island, Indonesia

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Abstract:

Every economic development expects high economic growth and inter-provincial equality on Borneo Island in 2014-2018 to experience fluctuating and increasing economic growth. Economic growth seems to be uneven and the difference in GRDP per capita is quite striking in the region. This shows the imbalance between Borneo Province. The purpose of this study was to analyze the imbalances that occurred between the Provinces of Borneo during the observation period. The data used in this study are based on secondary data and the analysis model used is the Klassen Typology and the Williamson Index. The results showed that of the 5 objects, having an inequality index that was greater than the average reference area (Borneo Island) there were 2 Provinces (West and East Borneo). Economic development, initiated by the government, was not sustained without limited liability corporations and capitalist markets due to the inefficiencies associated with government planning and resulting bureaucracies without any other mechanisms to correct them.

Keywords: economic growth; inequality; Klassen typology; Williamson index.

JEL Classification: O11; R11; D63.

Introduction

Economic development is a multifaceted and multidimensional process in terms of its substance, characteristics, and goals. While the traditional indicators of economic development, such as economic growth, is still important, there are other factors of development that are not necessarily captured by economic growth and the

improvement of overall economic efficiency, such as relief of poverty, inequality, and unemployment (Seers 1979). Additional development goals include better education, higher standards of health and nutrition, a cleaner environment, more equality of opportunity, greater individual freedom, and a richer cultural life (World Bank 1991). However, for conceptual clarity, there should be a distinction between economic development and development in a broader sense encompassing non-economic values and goals, and these additional development goals are more appropriately included in the latter (Lee 2017). This section discusses the three essential components of economic development; *i.e:* "growth", "distribution", and "innovation".

However, many other developing countries adopting this policy were not as successful; simply increasing capital for investment did not lead to sustained growth. The question was how to use the capital in an economy that consists of a combination of interrelated production processes (Romer 1986). New theories also emphasize factors other than capital as a source of growth; according to the new growth theory, growth results from increasing returns to the use of knowledge rather than labor and capital and lower levels of investments in human capital (education), infrastructure, or research and development (R&D) also erode growth potential. The theory of coordination failure explains the relationship between investment in human capital and capital for investment. This theory indicates that investment may not occur, even if capital is available, when returns of an investment depend on the presence or extent of other investments and an investor does not believe that the other investors will make the needed investment; *i.e*., coordination failure occurs, and growth potential does not realize (Glăvan 2008). This suggests a role for the government in coordination and provides support for state-led development policies, including state investments in education, infrastructure, and R&D.

The development of the provinces on Borneo since the 2000s and decentralization are thought to have pushed inequality between regions wider. Inequality has both positive and negative impacts. The positive impact of inequality is that it can encourage other less developed regions to be able to compete and increase their growth to improve their welfare. Meanwhile, the negative impacts of extreme inequality include: economic inefficiency, weakening social stability, solidarity, and high inequality which are generally seen as unfair (Todaro and Smith 2003).

Gross Regional Domestic per capita is one of the tools to determine the level of welfare of a population in a province, where if the larger GRDP per capita can be interpreted the better the level of welfare of the people. Conversely, on the contrary, getting a smaller GRDP, it can be interpreted the worse the level of welfare of its people. Certain regions that experience higher economic growth than other regions, there will be an increase that continues to increase because many residents from other regions continue to move to these areas. This condition occurs because there is a pull of more job opportunities in the urban area. Urban areas continue to develop rapidly because potential resources continue to advance to developed areas as centers of growth with higher economic growth. This condition then causes the growth of the center to increase even higher because it is supported by the potential of the resources that have been moved.

Table 1 shows the total GRDP per capita on Borneo Island in 5 years has increased, the highest in 2018 (Rp. 188.70 billion) and the lowest Rp. 174.52 billion in 2014. However, when viewed by region, there are 4 out of 5 provinces on the island of Borneo, which on average The per capita GRDP looks far away, namely: West Borneo (Rp. 22.93 billion), Central Borneo (Rp. 29.23 billion), South Borneo (Rp. 24.85 billion), and North Borneo (Rp. 33.98 billion). Meanwhile, from an average of Rp 182.88 billion, East Borneo is a province with the highest per capita GRDP with an average achievement of Rp 71.89 billion.

Table 1. GRDP per capita between provinces on Borneo, 2014-2018 (billion rupiahs)

Province	Year					Average
	2014	2015	2016	2017	2018	
West Borneo	22.70	23.09	23.22	23.12	22.52	22.93
Central Borneo	26.71	28.03	29.33	30.47	31.63	29.23
South Borneo	22.63	23.74	24.85	25.97	27.04	24.85
East Borneo	71.63	72.39	72.29	72.38	70.76	71.89
North Borneo	30.85	32.41	34.01	35.87	36.75	33.98
Borneo (total)	174.52	179.66	183.70	187.81	188.70	182.88

Source: BPS-Statistics Indonesia 2019

Achievement of per capita GRDP value in the Province of East Borneo is due to greater revenues from the oil and gas sector because it is an oil-producing province for the island of Borneo. Besides, the high flow of foreign investment is investing in the region by opening their companies.

The development aims to equalize the results of economic development, but in reality, many deviations occur, so that the results of development have not been enjoyed by residents on the island of Borneo equally. Inequality has been ongoing and manifested in various forms, aspects or dimensions. The development imbalance between provinces in Borneo is caused by various obstacles, both in terms of investment, as well as the potential of natural resources owned by each region that are not the same. This research was conducted to determine the dynamics of economic growth and inequality that occurred between the Provinces of Borneo Island in 2014-2018.

The poverty decrease in Indonesia is still dominated by monetary policy, *i.e*. the inflation stability as one indicator of Indonesian macroeconomic stability. However, fiscal policy doesn't really contribute to the poverty rate decrease even though the government budget for community empowerment programs is huge but it misses the target (Tanjung *et al.* 2019).

1. Related literature

1.1. Economic growth

Economic growth or "growth," measured by increases in gross national income (GNI) or gross domestic product (GDP) is a traditional criterion for economic development (Todaro and Smith 2009). Growth alone is neither equated with successful economic development nor translated into the achievement of other objectives of economic development (Seers 1969). Nonetheless, growth is significant because it creates an essential economic foundation for a country to meet the other objectives of economic development, such as poverty relief, increased employment, and higher income for the majority of population. Earlier development theories considered growth a function of investment (Domar 1947) and postulated that growth requires capital formation through raising domestic savings and acquiring foreign capital (particularly when there was a shortage of domestic savings). Development economists, such as Rosenstein-Rodan and Hirschman, supported coordinated investment programs to promote economic development. State-led development policies of East Asian countries, such as South Korea, Taiwan, Singapore, and China, were consistent with this policy prescription emphasizing investment and achieved remarkable success.

Kuznets (1955), who has been instrumental in pioneering the analysis of historical growth patterns in developed countries, states that in the early stages of growth, income distribution tends to deteriorate, but in later stages, it will improve. This observation came to be widely known as the concept of the inverted "U Kuznets" curve (Todaro 2000). The polar theory of growth popularized by Perroux (1970) states that growth does not appear in various regions at the same time. Growth only occurs in several places which are the center (poles) of growth with different intensities.

To find a picture of the pattern and structure of regional economic growth, Klassen's typology can be used as an analysis tool. Sjafrizal (1997) explains that by using this analysis tool, four growth classifications for each region can be obtained, is: rapid growth region, retarded region, growing region, and relatively backward region. Aswandi and Kuncoro (2002) use this analysis tool to classify an area into four groups, namely: low growth, high income; high growth, high income; high growth, low income; and low growth, low income.

1.2. Economic income inequality

Various studies on regional disparities have been carried out. Kuznets (1955) was noted as one of the earliest researchers in researching inequality. He examined the disparity in various countries in a cross-sectional way and found a pattern of "U inverse". Kuznets concluded that the average per capita income at the beginning of the country's development was still low, and the level of inequality was also low. When the average income rises, the gap also increases. Then when the average income rises higher, the gap will fall again (Todaro and Smith 2004).

These empirical formulations brought forth a generation of growth and development theories whose object was to explain the stylized facts. Kaldor himself presented a growth model which claimed to produce outcomes consistent with constancy of factor shares, as did Robert Solow. Kuznets also developed a model of rural-urban transition consistent with his prediction, as did many others (Kanbur 2012).

However, the Kaldor-Kuznets stylised facts no longer hold for advanced economies. The share of capital as conventionally measured has been on the rise, as has interpersonal inequality of income and wealth. Of course, there are variations and subtleties of data and interpretation, and the pattern is not uniform. But these are the stylized facts of our time. Bringing these facts centre stage has been the achievement of research leading up to Piketty (2014).

The new realities of high inequality have revived old debates on policy interventions and their ethical and economic rationale (Stiglitz 2012). Standard analysis which balances the tradeoff between efficiency and equity

would suggest that taxation should now become more progressive to balance the greater inherent inequality against the incentive effects of progressive taxation (Kanbur and Tuomala 1994).

One counter argument is that what matters is not inequality of "outcome" but inequality of "opportunity". According to this argument, so long as the prospects are the same for all children, the inequality of income across parents should not matter ethically. What we should aim for is equality of opportunity, not income equality. However, when income inequality across parents translates into inequality of prospects across children, even starting in the womb, then the distinction between opportunity and income begins to fade and the case for progressive taxation is not undermined by the "equality of opportunity" objective (Wagstaff and Kanbur 2015).

2. Methodology

2.1. Data

Secondary research-based supporting data in the form of time-series data obtained from the Indonesian Central Statistics Agency. The data analyzed are data on Gross Regional Domestic Product without oil and gas (at constant prices) in 2014 - 2018.

The method of data collection is done by the documentation method that is looking for data about things or variables in the form of notes, transcripts, books, newspapers, magazines, and *etc*. (Arikunto 2002). This study documents statistical data that are publications from government agencies.

2.2. Analysis model

The analytical model used is descriptive analysis with a regional economic analysis approach. Analysis of the data used following the objectives of this study is the Klassen Typology and the Williamson Index. To find out the pattern of economic growth between the Provinces on Borneo Island, the Klassen Typology was used. This analysis model was developed to find a picture of the patterns and structures of economic growth in each region (Klassen 1965). Klassen's typology divides regions based on two main indicators, namely regional economic growth and regional per capita income. By determining the average economic growth as a vertical axis and average per capita income as a horizontal axis, the observed area can be divided into four classifications, namely: rapid growth region, retarded region, growing region, and relatively backward region (Sjafrizal 1997).

Table 2. Grouping regional development based on Klassen typology

GRDP per capita (y) / Growth rate (r)	yi < y	yi > y
ri > r	Quadrant II - Growing region	Quadrant I Rapid growth region
ri < r	Quadrant III - Relatively backward region	Quadrant IV Retarted region

Noted: yi (per capita income between provinces), y (Borneo per capita income), ri (GRDP growth rate between provinces), r (Borneo PDRB growth rate).

Source: Sjafrizal (1997)

The rate of economic growth is determined by the rate of increase of goods and services produced in an area. Economic growth shows the extent of the performance or activities of various economic sectors. Economic growth is measured through indicators of GRDP growth from year to year. The rate of economic growth can be calculated with a simple formula:

$$g = \frac{GRDP_1 - GRDP_0}{GRDP_0} \times 100\% \quad (1)$$

If the economic growth (g) is negative, it means that the $GRDP_1$ of the particular observation year is smaller than the previous year's GRDP, on the contrary, if the economic growth (g) is positive means the $GRDP_1$ of the previous year certain observations were greater than the previous year's $GRDP_0$. In essence, regional income does not always increase every year. Positive growth indicates an improvement in economic conditions that occur, on the contrary, if negative growth means a decline in economic performance and activity.

Williamson (1965) examined the relationship between regional disparities with the level of economic development, using data from advanced economies and developing economies, it was found that during the initial stages of development, regional disparities became greater and development was concentrated in certain

regions. At a more mature stage of economic growth, it appears that there is a balance between regions and the disparity is reduced significantly.

To find out the disparities in development between regions, it can be analyzed using a regional inequality index called the Williamson Index. In measuring Provincial GRDP inequality, Ying (2000) uses a regional inequality index. Theil's regional inequality index can be divided/broken down into two sub-indications namely regional imbalances within the region and regional disparities between regions or regions.

To find out the inter-development disparities that occurred between Provinces on the island of Borneo during 2014-2018, it can be analyzed using the Williamson Inequality Index (Sjafrizal 1997):

$$IW = \frac{\sqrt{(\Sigma(Yi-Y)^2.fin/n)}}{Y} \quad (2)$$

where: IW (Williamson Index), y (Provincial GRDP per capita), y (average GDP per capita of all regions in Borneo), fi (total population of the Province), n (population of all regions in Borneo).

The Williamson Index ranges from 0< IW <1, were getting closer to zero means that the region is less imbalanced. Meanwhile, when approaching one, the imbalance in the area under study (Sjafrizal 2008).

The allocation of development budgeting as an instrument to reduce economic inequality seems to need more attention in the future. The budget allocation strategy must encourage and accelerate national economic growth while at the same time becoming a tool to reduce regional disparities (Majidi 1997).

Excessive differences in the level of economic progress between regions will cause backwash effects to dominate the spread effects on regional growth, in this case resulting in an imbalance process (Myrdal 1957). Actors who have power in the market normally will tend to increase rather than decrease, resulting in regional disparities (Arsyad 1999).

3. Empirical findings

3.1. Analysis of regional economic growth

Klassen's typology can be used to identify priority sectors or sub-sectors, businesses or commodities of a region. This analysis tool can be used through two approaches, the first is a sectoral approach and a second approach is a regional approach such as to find out the classification of regions based on two main indicators, namely economic growth and income or regional per capita GRDP. By determining the average economic growth as a vertical axis and the average per capita GRDP as a horizontal axis, the regional approach produces four regional classifications, each of which has different economic growth characteristics.

Table 3. Klassen typology calculation results between provinces on Borneo, 2014-2018

Province	Economic growth (%)	Income per capita (Rp billion)	Quadrant
West Borneo	2.40	22.93	III
Central Borneo	5.90	29.24	II
South Borneo	6.00	24.85	II
East Borneo	2.95	71.89	IV
North Borneo	6.66	33.98	II

Source: BPS-Statistics Indonesia, 2019

Tables 3 and 4 show that East Borneo (Quadrant IV) is a developed region, but is depressed. This province is a relatively developed area but within a few years experienced relatively small growth, due to depressed main activities of the region concerned.

Quadrant II is dominated by Central Borneo, South Borneo, and North Borneo. This means that the region is a fast-growing province. The provinces included in this category are regions that have great potential but have not been well managed so that even though their growth is fast, their income is still below average income. This indicates that the income of the three regions is still relatively low compared to other provinces, so the future must continue to be developed to obtain income that is no longer relatively low.

West Borneo (Quadrant III) is classified as a relatively underdeveloped region. The regions included in this category are provinces that are economically very disadvantaged, both in terms of economic growth and per capita income. In other words, the Province in this category is the province with the worst conditions compared to other regions on the island of Borneo.

In Quadrant I, no reference area is classified as a fast-growing and fast-growing Province. Provinces that are categorized as fast-growing and fast-growing regions are generally regions that are advanced both in terms of development or speed of growth.

Table 4. Recapitulation of quadrant areas on Borneo, 2014-2018

GRDP per capita (y) / Growth rate (r)	yi < y	yi > y
ri > r	Quadrant II - Central, South, and North Borneo	Quadrant I
ri < r	Quadrant III - West Borneo	Quadrant IV - East Borneo

Source: Author's calculation, 2020

The three aspects of planning that have always been applied as a reference in development, is macro planning, sectoral planning, and regional planning which are all arranged in a single unit. This publication is intended specifically to support regional planning, especially to see the achievement of the GRDP figure which is the total added value created as a result of sectoral activities in processing goods and services from 5 Provinces on the island of Borneo during the study period (2014-2018).

Each of these regions has different characteristics from each other. This difference can cover the area, population, natural resources owned, facilities, and transportation facilities which will then influence the development of each region. Therefore, by using the Klassen Typology approach a mapping of the conditions of all research objects can be carried out so that the characteristics of each region can be known.

Empirical findings are consistent with previous research developed by Khusaini *et al.* (2018). The results show that trade openness can improve inequality but at the same time impede growth. The effect of fiscal policy on reducing inequality is only generated by tax collection but is temporary. Meanwhile, government spending on infrastructure and health proved to encourage growth. On the other hand, education sector spending and tax collection can actually hamper growth.

3.2. Analysis of the level of inequality between regions

In this study, economic inequality is measured by the Williamson Index which is used to see the percentage of inequality starting from 0 to 1. It appears that the development of economic inequality in the 5 Provinces (Borneo Island) tends to vary from one another. Of the 5 regions, there are 2 which have an inequality index above the average, namely West Borneo and East Borneo. On one hand, the 3 reference regions have below-average inequality indexes, is: Central Borneo, South Borneo, and North Borneo.

This indicates that the level of development imbalance in the Provinces is relatively greater than that of Borneo. Table 5 shows the results of the calculation of economic inequality between regions. If seen from the average WI achievements during 2014-2018, the provinces with the highest were in West Borneo (0.706) and East Borneo (0.698). Meanwhile, the lowest average index is South Borneo Province (0.361).

The GRDP index per capita inequality between provinces on the island of Borneo during 2014-2018 with an average of 0.526 (quite high). If seen from these figures, it can be seen that there is a considerable distance between the provinces with the highest inequality and the provinces with the lowest inequality during the study year. This indicates that inequality on the island of Borneo is uneven and there is a wide gap between rich and poor areas.

Comparison of development on the island of Java with other islands that are very far away makes the island of Java more densely populated while other islands such as Borneo and other large islands are increasingly left behind. Not long ago, we heard that Indonesians who were on the border with Malaysia preferred to become citizens of neighboring countries because the facilities they needed were closer to neighboring countries than in their own country, this also became an unavoidable population problem due to uneven development. in various regions in Indonesia.

Table 5. Recapitulation of WI values between provinces in Borneo, 2014-2018

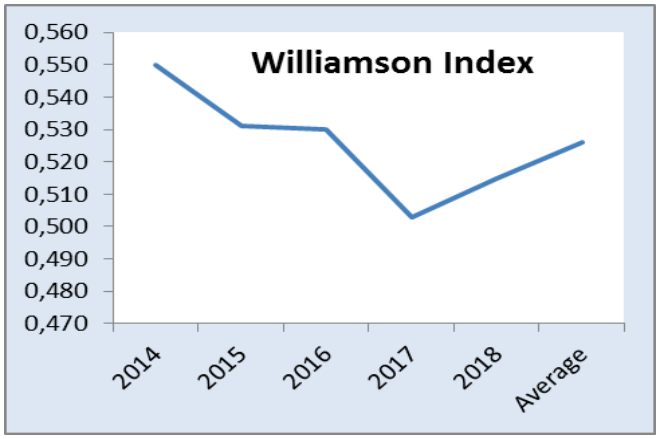
Province	Year					Average
	2014	2015	2016	2017	2018	
West Borneo	0.835	0.744	0.707	0.650	0.592	0.706
Central Borneo	0.432	0.472	0.519	0.484	0.524	0.486
South Borneo	0.361	0.354	0.357	0.351	0.380	0.361
East Borneo	0.744	0.710	0.698	0.662	0.678	0.698
North Borneo	0.377	0.374	0.370	0.368	0.402	0.378
Borneo	0.550	0.531	0.530	0.503	0.515	0.526

Source: Author's calculation, 2020

The effort carried out by the government to smooth the population of Indonesia is through resettlement or what is called transmigration. Some residents from areas that are densely populated, moved to areas that are still empty or lacking in inhabitants. It can be seen that the decline in community self-help presentations compared to funds from central assistance, this is due to the problem of the rural economy itself in the village, experiencing a striking change: modernization of agriculture brings higher production, migration to the city results in labor shortages in several places, and turns back resulting in further mechanization. The nature of rural agriculture in the nineties was completely different from the general pattern prevailing in 1970.

At that time the rhythm of life and the rhythm of work depended on the monsoon, which determined when people could plant and harvest, but the most striking was the rural urbanization, due to contact with the city becomes stronger then daily life and Repelita III transmigration program becomes a priority in the distribution of population, because the government policy regarding the transmigration program has the expected impact of creating a prosperous and prosperous society. Furthermore, in the framework of implementing more equitable national development throughout the region, efforts will be made to harmonize the growth rates between regions, among others in increasing inter-regional and inter-island transportation, providing assistance and stimulation to increase development of relatively backward regions, and a more even distribution of population through transmigration, where the area of origin was not promising, and towards new areas is very promising for their future.

Figure 1. Williamson index between provinces in Borneo, 2014-2018



The results of this analysis, supported by research Amos Jr (1988) which states it is hypothesized that once the inverted-U pattern is completed, regional income inequality incentives, rather than remaining stable. Four analyzes of infrastructure per capita income inequity among countries are undertaken to test the hypothesis that regional inequality increases. Results indicate strong support fc- the hypothesis that regional income inequality increased in the latter stages of development.

Conclusion

Conclusions that can be drawn based on regional typologies on the island of Borneo can be classified based on growth and income per capita into four groups namely East Borneo Province (Quadrant IV), including developed, but depressed areas. The provinces of Central Borneo, South Borneo and North Borneo (Quadrant II) are fast-developing regions, while East Borneo Province (Quadrant III) is a relatively underdeveloped region.

Economic inequality between regions based on per capita GRDP values in 5 Provinces (Borneo Island) during the 2014-2018 period from the Williamson Index, three regions have below average averages index and two regions with an average index above the island average index Borneo.

State industrial policy, as a coordinator of market failure and a facilitator of industries, as well as political leadership are important for economic development, regardless of governance style.

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