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## **Exploring the Development of Gross Regional Income of the Seventeen Regions in the Philippines: Its Potential in Policy-making Towards Equality**

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# **Exploring the Development of Gross Regional Income of the Seventeen Regions in the Philippines: Its Potential in Policy-making Towards Equality**

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## **Abstract**

Gross Domestic Product (GDP) is the total market value of all final goods and services produced within an economy in a given time period. Gross National Income (GNI) is the total income received by the economy by its residents and businesses regardless of whether they are located in or outside the economy. From a country's perspective, the difference between GDP and GNI is the Net Primary Income (NPI) from the rest of the world.

At the regional level, it is common for residents to work outside their regions. Since GRDP measures production, the size of regional economies is determined by the location of the economic activities. However, part of the production is contributed by residents from other regions. The per capita GRDP, thus, does not reflect the average income of each resident. Moreover, GRDP may not accurately represent the labor productivity of the regions.

This paper attempts to derive the Gross Regional Income (GRI) of each of the seventeen regions as an alternative indicator, and compare it with per capita GRDP and labor productivity. Parameters from the Census of Philippine Business and Industry (CPBI), and the Family Income and Expenditure Survey (FIES) will be used.

Keywords: Gross Regional Domestic Product, Gross Regional Income, Net Primary Regional Income

## **I. Introduction**

The Philippine System of National Accounts (PSNA) describes a comprehensive view of the country's economic performance and allows to monitor the behavior and structure of the economy. The PSNA covers the economic transactions recorded in summary tables and balance sheets called accounts. These accounts are summarized in integrated, coherent and consistent manner based on the internationally agreed standard concepts, definitions, classifications and accounting rules.

The Gross Domestic Product (GDP) is the most common indicator used in tracking the economic performance of the country. GDP measures the total market value of all final goods and services produced within an economy in a given time period. The primary incomes generated in the production activity are distributed to both the residents and non-residents of the economy [1]. Similarly, the residents of a country may generate primary incomes from their production activity from the rest of the world.

An alternative indicator of economic performance is the Gross National Income (GNI). It measures the total income received by the economy through its residents and businesses regardless of whether they are located in or outside the economy. From a country's perspective, the difference between GNI and GDP is the Net Primary Income (NPI) from the rest of the world [1]. In the case

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of the Philippines, GNI is higher than the GDP since the compensation of Philippine residents working abroad is higher than those non-residents working in the country.

Currently, the performance of the regional economies in the Philippines is measured through the Gross Regional Domestic Product (GRDP), and the per capita GRDP which roughly estimates the economic output of each individual within the region.

In 2021, the National Capital Region (NCR) had the highest GRDP, followed by CALABARZON and Central Luzon. In terms of per capita GRDP, NCR still ranked first, followed by Northern Mindanao and the Cordillera Administrative Region [2].

Since the GRDP measures production, the size of regional economies is determined by the location of the economic activities. However, part of the production is contributed by residents from other regions. The per capita GRDP, thus, does not fully reflect the average income received by each resident of the region. Moreover, labor productivity of the residents in the region is less accurately represented by the GRDP per employed person.

This paper explores the use of Gross Regional Income (GRI) as an alternative indicator of the economic welfare of the region. The methodology is patterned after the concept of GNI, applied at the regional level. GRI reflects not only the value of economic activities within the region, but also the other assets and income received by its residents from within and outside their region. Hence, the contribution of each individual to the region's income may be better reflected by the per capita GRI. This is specially the case in regions wherein a good number of residents engage in economic activities outside their residence.

Comparison of the derived GRI with the GRDP also sheds light on the extent of movement of labor among the regions. For instance, a region whose GRI is lower than the GDP means that it is paying more income to non-residents than what it receives from other regions. This may imply that a substantial number of non-residents are working in that particular region, or that non-residents generally receive higher compensation compared to the compensation received by its residents from working outside.

Thus, the measurement of GRI aims to provide additional economic indicator for a more comprehensive analysis of regional economies.

## **II. Sources and Experimental Methodology**

### **2.1 Sources of Data**

The Philippine Statistic Authority (PSA), as the agency mandated to compile the national accounts, is also the central authority on primary data collection.

For this study, benchmark data are provided from censuses and surveys of establishments and households while control total for available national accounts indicators are sourced from the annual national accounts estimates. Specifically, the data utilized in the experimental estimation are as follows:

#### **1. 2018 Input Output (IO) Table**

The Input Output Accounts provide disaggregative measures of the economic structure of the country, which are not shown in the national accounts [3]. The main data items from the 2018 IO used in this study are the components of GDP by income at the national level, namely compensation, taxes less subsidies, and gross operating surplus. These

components serve as control totals for the derivation of the regional estimates of GDP by income.

## 2. 2018 Gross National Income (GNI)

GNI represents the net income (receipts less payments) received by resident units of the economy as a result of its ownership of factors of production. The GDP on the other hand represents aggregate measure of output of goods and services resulting from the production activity of all resident units within the borders of a country. At the national level, GNI is thus GDP plus the Net Primary Income (NPI) from the rest of the world [1]. The GNI as well as the NPI components, namely compensation and property income at the national level serve as control totals for the derivation of the income of each of the seventeen regions of the country.

## 3. 2018 Gross Regional Domestic Product (GRDP) by Region and Industry

The GRDP is the aggregate of gross value added (GVA) of all resident producer units in the region [4]. It is an indicator that measures the size of the economy of the region. The 2018 GRDP levels by industry provide control totals for the aggregate of income by components by region.

## 4. 2018 Census of Philippine Business and Industry (CPBI)

The CPBI provides the basic data on the distribution of income components by region. Specifically, one of the most important indicators from the CPBI used in this study is the compensation of employees which is the total remuneration in cash or in kind payable by employers to employees for the work done. The CPBI is conducted every six years and covers all formal establishments in the Philippines regardless of ownership and economic organization [5]. The latest establishment census is the 2018 CPBI.

## 5. 2018 Family Income and Expenditure Survey (FIES)

The FIES is the main source of data on family income and family expenditure and related information affecting income and expenditure levels and patterns in the Philippines [6]. The FIES covers income generated by household [6] which implies that statistics on income is reported based on residents, not on where production takes place or where income is earned. This information provides indication on the regional distribution of income earned by residents of the region.

## 6. 2018 Population

This study used the updated population projections based on the results of 2015 Census of Population. Together with the GRDP and GRI, the data is used to derive the per capita levels by region.



## 7. Annual Provincial Labor Market Statistics from the Labor Force Survey (LFS)

The Labor Force Survey (LFS) is a nationwide quarterly survey of households designed to provide statistics on levels and trends of employment, unemployment, and underemployment for the country as a whole, and for each of the administrative regions [7]. Together with the GRDP and GRI, the data is used to derive the productivity levels by region.

## 2.2 Experimental Methodology

The main goal of this study is to derive Gross Regional Income, an indicator of regional comparison based on the concept of income, not just on production. This is equivalent to the concept of GNI at the national level only with regional breakdown. The overall method done in this study includes two steps: 1) Derivation of GRDP by income components; and 2) Derivation of NPI outside the region. The experimental methodologies for these major steps are summarized below:

### 2.2.1 Derivation of GRDP by income components<sup>2</sup>

1. *Compensation.* As the main component of income by residents in the region, the compensation generated from the production done in the region was estimated:
  - a. The total compensation component sourced from the 2018 CPBI was derived as indicator for each industry.
  - b. For industries in which CPBI is not applicable, the distribution of compensation was assumed to follow that of GRDP. This assumed that the compensation to GVA ratio for that industry is similar across regions.
  - c. The structure by industry is used to distribute the national aggregate, as provided by the 2018 IO.
  - d. The total compensation from the industries was used to determine the distribution of compensation and to compare the levels across regions. The derived compensation by region represents the returns to labor as factor of production done at the regional level.
2. *Taxes less subsidies.* For the taxes (less subsidies) component, regional levels were derived using the ratio of taxes to Gross Value Added (GVA) from the 2018 IO. This ratio by industry is fixed across regions on the assumption that the pattern of allocating other taxes of production is somewhat similar across the country.
3. *Operating surplus.* Finally, the Gross Operating Surplus (GOS) is derived as residual after deducting the derived compensation and taxes (less subsidies) from the GRDP, as the control total.

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<sup>2</sup> Due to the limitation of data, the experimental methodology applied in this study involved some assumptions.

### 2.2.2 Derivation of Net Primary Income (NPI) outside the region

The estimation of Gross Regional Income is patterned with the concepts of GNI at the national level. As viewed from the national perspective, the GNI is the aggregate income of the nation generated by its production and its ownership of factors of production less the incomes paid out for the use of factors of production owned by the rest of the world (ROW).

Gross national income is operationally defined in relation with GDP as follows:

$$GNI = GDP + NPI(ROW)$$

Where the net primary income from ROW,  $NPI(ROW)$ , is the primary income receivable from the ROW less primary income payable to the ROW.

More specifically,

$$NPI(ROW) = NCompIn(ROW) + NPropI(ROW)$$

$$NCompIn(ROW) = CompIn(ROW) - CompOut(ROW)$$

$$NPropI(ROW) = PropIn(ROW) - PropOut(ROW)$$

Where  $NCompIn(ROW)$  is the net compensation inflow from ROW,  $CompIn(ROW)$  is the compensation of employees receivable (inflow) from ROW, and  $CompOut(ROW)$  is the compensation of employees payable (outflow) to the ROW, while

$NPropI(ROW)$  is the net property income from the ROW,  $PropIn(ROW)$  is the property income inflow from the ROW, and  $PropOut(ROW)$  is the property income outflow to the ROW.

With similar concepts, it follows that the Gross Regional Income (GRI) for  $i^{th}$  region is:

$$GRI_i = GRDP_i + NPI(OR)_i, \quad i = 1, 2, \dots, 17$$

Where  $NPI(OR)_i$  is the NPI from outside the region  $i$ , which can be disaggregated further as:

$$NPI(OR)_i = NPI(ROP)_i + NPI(ROW)_i$$

Where  $NPI(ROP)$  is the NPI from rest of the Philippines (ROP).

That is,

$$GRI_i = GRDP_i + NPI(ROP)_i + NPI(ROW)_i$$

$$GRI_i = GRDP_i + NCompIn(ROP)_i + NPropIn(ROP)_i + NCompIn(ROW)_i + NPropIn(ROW)_i$$

Hence, with the availability of GRDP the measurement of GRI by region hinges upon the NPI from outside the region. If the GRI of the region is higher than the GRDP, it indicates that the region received more income than what it paid to outside the region.



Operationally, the NPI outside the region is calculated through the following steps:

1. Net Compensation Inflow/Outflow from other Regions – this represents the compensation earned and paid from interregional employment transactions. For instance, a resident in CALABARZON works in an industry in the National Capital Region (NCR). In this case, CALABARZON earned compensation (inflow) paid by NCR (outflow). It follows that the sum of compensation inflow from all regions is equal to the sum of compensation outflow to all regions.

For each region  $i$ ,

$$NCompIn(ROP)_i = CompIn(ROP)_i - CompOut(ROP)_i, \quad i = 1, 2, \dots, 17$$

Where  $NCompIn(ROP)_i$  is the Net Compensation Inflow from ROP,  $CompIn(ROP)_i$  is the Compensation Inflow from ROP, and  $CompOut(ROP)_i$  is the Compensation Outflow to ROP.

It follows that

$$\sum_{i=1}^{17} CompIn(ROP)_i = \sum_{i=1}^{17} CompOut(ROP)_i$$

With the limitations of data, the Net Compensation Inflow from Other Region was implicitly derived using the following approaches and assumptions:

- a. With the Total Compensation levels as the control total, the compensation levels by region were derived using two methods: i) the concept of production or where the production takes place; and ii) the concept of residency or to whom the compensation is being paid.
  - b. Using the concept of production, the compensation by region is derived using the structure of production such as the CPBI and the GRDP. These are the same estimates as the derived compensation component of the GRDP. The derived compensation using this approach represents the amount paid to labor as factor of production. This compensation is based on where the labor was provided, not on who were paid, regardless on whether the labor came from the residents or non-residents of that region.
  - c. Using the concept of residency, the compensation by region is derived using the structure of compensation based on the results of the FIES. The derived compensation is based on residency or to whom remuneration is being paid, not on where production took place.
  - d. Combining the two approaches resulted in Net Compensation Inflow from Other Region. The difference between the compensation received by residents and the compensation incurred as a result of production is implicitly the Net Compensation Inflow. The value is positive if there is a net inflow of compensation earned by residents from another region. On the other hand, the value is negative if the region paid more to nonresidents during the production process.
2. For the estimation of Net Property Income from ROP, the following assumptions and methodology are considered:

For each of the region  $i$ ,

$$NPropIn(ROP)_i = PropIn(ROP)_i - PropOut(ROP)_i, \quad i = 1, 2, \dots, 17$$

Where  $NPropIn(ROP)_i$  is the Net Property Income of region  $i$  from ROP,

$PropIn(ROP)_i$  is the Property Income Inflow from ROP, and

$PropOut(ROP)_i$  is the Property Income Outflow to ROP.

It follows that

$$\sum_{i=1}^{17} PropIn(ROP)_i = \sum_{i=1}^{17} PropOut(ROP)_i$$

With the limitations of data, Net Property Income Inflow from ROP was implicitly derived through the following steps:

- a. Components of property income were derived from the 2018 CPBI. These include rent income from land, interest income, dividend income, and royalty income.
  - b. The total of Property income derived from CPBI was distributed using the structure derived from the FIES. The structure was derived from the income from entrepreneurial activities. This represents the activity of the residents doing businesses and is assumed that generating property income is highly related to these activities.
  - c. Combining the two steps resulted in Net Property Income Inflow from ROP. The difference between the property income received by residents and the property income generated in the region is implicitly the Net Property Income Inflow. The value is positive if there is a net inflow of property earned by residents from another region. On the other hand, the value is negative if the region incurred more property income payments to nonresidents.
3. For the Net Primary Income from the Rest of the World, the published totals from the annual accounts served as control total to be distributed using regional indicators. The NPI from ROW for each region  $i$  is given by:

$$NPI(ROW)_i = NCompIn(ROW)_i + NPropIn(ROW)_i$$

The following are considered for the regional allocation of NPI components:

- a. For Compensation Inflow, the biggest component among the NPI components with ROW, the regional levels were derived using the distribution of transfers from abroad in the 2018 FIES. This goes with the assumption that the distribution of transfers by region reflects that of the compensation received by Philippine residents from the rest of the world.
- b. For Compensation Outflow, or the compensation paid to non-residents, the national aggregate was distributed using the derived Operating Surplus by region. This follows the assumption that nonresidents are employed in regions with high rate of operating surplus.



- c. Due to data limitation, the distribution from the property income components from the CPBI were used for both the Property income inflow and Property income outflow to obtain the Net property income from ROW.

### **III. Results and Discussion**

#### **3.1 Regional Accounts by Income Component in 2018**

Compensation<sup>3</sup> as a return to labor as factor of production is an important component of GDP at the regional level. At the national level, the share of compensation to the total GDP is at 34.5 percent in 2018. This is the amount paid as return to labor during production process. Regional economies have varying patterns of compensation shares to GDP but are all substantial component of regional GDP. In the NCR, 42.2 percent of its GDP comes from compensation. In Central Visayas, the share of compensation to its GDP is 35.0 percent. These regions have higher shares in Services which are labor intensive industries.

CAR, which has relatively higher share of Manufacturing to GDP has the least share of compensation to GDP among the regions at 26.2 percent. This can be explained by the kind of manufacturing activities in the region which are more capital intensive rather than labor intensive. Other regions with share of compensation to their GRDP less than 30.0 percent are MIMAROPA (26.8 percent), Ilocos Region (27.7 percent), BARMM (27.7 percent), Zamboanga Peninsula (28.7 percent), and Northern Mindanao (28.7 percent).

The rest of the regions have share of compensation to GRDP ranging around 30.0 percent to 34.0 percent. (*Table 1*)

Other Value Added (OVA) accumulated majority of the share to GDP at around one-third or 65.5 percent at the national level. The bulk of this OVA is the Gross Operating Surplus at 57.9 percent while the 7.6 percent comes from Taxes less Subsidies. OVA in regions ranges from 57.8 percent of GDP (in NCR) to 73.8 percent (in CAR).

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<sup>3</sup> For the purpose of this study, and with limitation of data, the analysis will focus on compensation component of GDP by region.

**Table 1. Shares of Compensation and Other Value to GRDP by Region, 2018**

Region		Shares to GRDP (in percent)		
		Compensation	Other Value Added	Total
NCR	National Capital Region	42.2	57.8	100.0
CAR	Cordillera Administrative Region	26.2	73.8	100.0
I	Ilocos Region	27.7	72.3	100.0
II	Cagayan Valley	33.9	66.1	100.0
III	Central Luzon	28.0	72.0	100.0
IVA	CALABARZON	33.0	67.0	100.0
	MIMAROPA Region	26.8	73.2	100.0
V	Bicol Region	31.2	68.8	100.0
VI	Western Visayas	31.0	69.0	100.0
VII	Central Visayas	35.0	65.0	100.0
VIII	Eastern Visayas	30.0	70.0	100.0
IX	Zamboanga Peninsula	28.7	71.3	100.0
X	Northern Mindanao	28.7	71.3	100.0
XI	Davao Region	31.9	68.1	100.0
XII	SOCCSKSARGEN	33.2	66.8	100.0
XIII	Caraga	31.6	68.4	100.0
BARMM	Bangsamoro Autonomous Region in Muslim Mindanao	27.7	72.3	100.0
	Philippines	34.5	65.5	100.0

In terms of share to the national total compensation, NCR has the biggest contribution at 39.0 percent. This is followed by CALABARZON with 14.2 percent and Central Luzon with 9.2 percent. Regions with the least shares are BARMM (1.0 percent), CAR (1.3 percent), Caraga (1.5 percent), MIMAROPA (1.6 percent), and Zamboanga Peninsula (1.7 percent). (*Table 2*)

As the country's center of economic opportunities and business activities, NCR was estimated to have a total GDP share of 31.8 percent, ranked as the top contributor to the GDP among 17 regions. This is followed by its neighboring regions, CALABARZON with an estimated GDP share of 14.8 percent and Central Luzon with 11.3 percent. The fourth largest economy was Central Visayas with 6.5 percent share. No other regions have shares higher than five percent with BARMM having the least total share. The rest of the regions have an aggregate GRDP share of 35.6 percent.

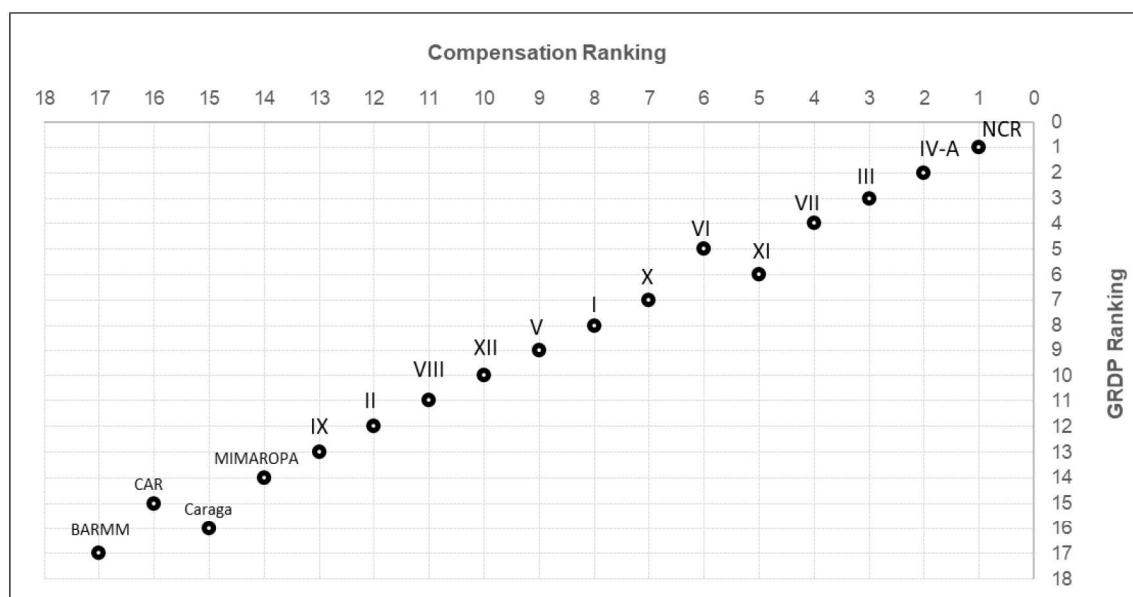
While there were differences in the share of compensation by region to total with that of GRDP shares to total GDP, there is not much difference in ranking between the two major aggregates. (*Figure 1*)



**Table 2. Estimated Percent Shares of Income Component by Region to Philippines, 2018**

Region		Share to Philippines (%)			Rank		
		Compensation	Other Value Added	GRDP	Compensation	Other Value Added	GRDP
NCR	National Capital Region	39.0	28.1	31.8	1	1	1
CAR	Cordillera Administrative Region	1.3	1.9	1.7	16	15	15
I	Ilocos Region	2.6	3.5	3.2	8	8	8
II	Cagayan Valley	2.1	2.1	2.1	12	14	12
III	Central Luzon	9.2	12.4	11.3	3	3	3
IV-A	CALABARZON	14.2	15.2	14.8	2	2	2
	MIMAROPA Region	1.6	2.3	2.0	14	12	14
V	Bicol Region	2.6	3.0	2.9	9	9	9
VI	Western Visayas	4.2	5.0	4.7	6	5	5
VII	Central Visayas	6.6	6.4	6.5	4	4	4
VIII	Eastern Visayas	2.1	2.6	2.4	11	10	11
IX	Zamboanga Peninsula	1.7	2.3	2.1	13	13	13
X	Northern Mindanao	3.7	4.9	4.5	7	6	7
XI	Davao Region	4.3	4.8	4.6	5	7	6
XII	SOCCSKSARGEN	2.4	2.5	2.5	10	11	10
XIII	Caraga	1.5	1.7	1.6	15	16	16
BARMM	Bangsamoro Autonomous Region in Muslim Mindanao	1.0	1.4	1.3	17	17	17
	Philippines	100.0	100.0	100.0			

**Figure 1. Ranking of Compensation and GRDP by Region, 2018**



### 3.2 Estimated Per Capita Compensation by Region

In the per capita compensation, or the amount of compensation as a return to labor as factor of production in GDP divided by the total population in the region, NCR dominates other regions with an index value of 306.6. This indicates that the per capita compensation in NCR is 206.6 percent

higher or more than three times with that of the national average. No other regions have per capita compensation higher than the national average. (*Table 3*)

The closest to the average per capita compensation at the national level is CALABARZON with an index value of 97.2. This indicates that the estimated compensation generated by production in the region divided by the population is 2.8 percent lower than the national average. The rest of the top five regions in terms of per capita compensation are Central Visayas (89.7), Davao Region (87.8), and Central Luzon (81.6).

The regions with the lowest per capita compensation indices are BARMM (24.1), Bicol Region (45.5), Eastern Visayas (48.5), Zamboanga Peninsula (49.1), and Ilocos Region (52.8).

In comparison, GDP per capita, or the total regional GDP divided by the regional population showed less dispersed distribution as compared with the per capita compensation. As shown in Table 3, while NCR still has the largest GDP per capita index among 17 regions at 250.2, three other regions have per capita GDP higher than that of the national average. These are CALABARZON (101.7), CAR (100.5), and Central Luzon (100.4). GDP per capita in Northern Mindanao is slightly lower by 2.8 percent than the national average as indicated by the 97.2 index value. Rounding in the top five of GDP per capita is Davao Region with index value of 95.0. BARMM is also the least in terms of GDP per capita with an index of 30.0 or 70.0 percent lower than the national average.

**Table 3. Estimated Regional Percent Capita Index of Income Components to Philippines, 2018**

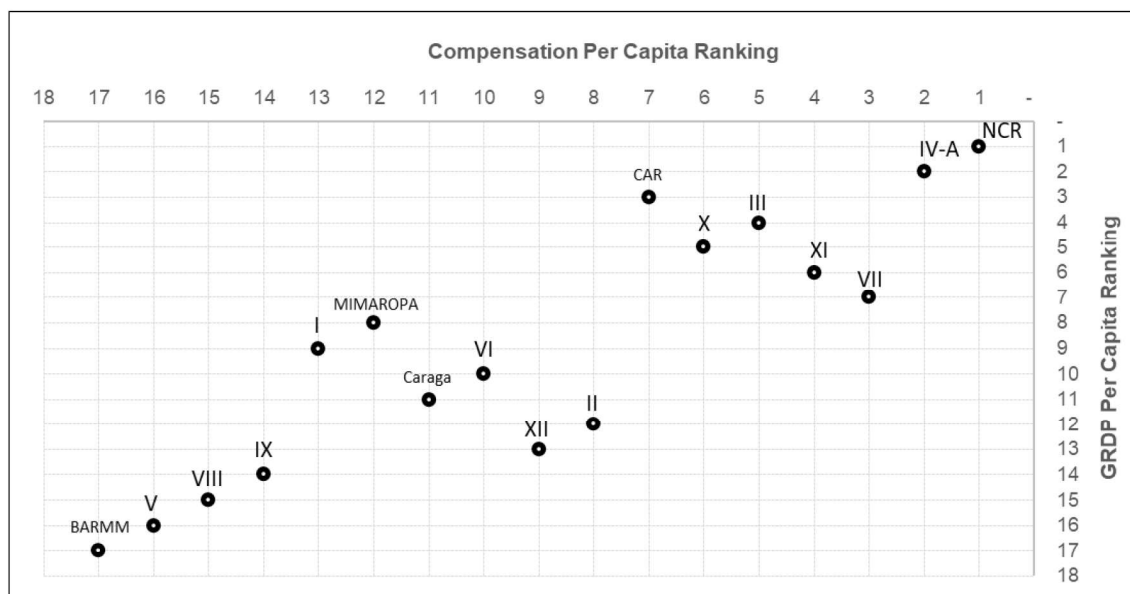
Region	Index to Philippines			Rank		
	Compensation	Other Value Added	GRDP	Compensation	Other Value Added	GRDP
NCR National Capital Region	306.6	220.6	250.2	1	1	1
CAR Cordillera Administrative Region	76.4	113.3	100.5	7	2	3
I Ilocos Region	52.8	72.5	65.7	13	9	9
II Cagayan Valley	61.3	62.8	62.3	8	14	12
III Central Luzon	81.6	110.4	100.4	5	3	4
IVA CALABARZON	97.2	104.0	101.7	2	5	2
MIMAROPA Region	53.9	77.5	69.4	12	8	8
V Bicol Region	45.5	52.8	50.3	16	16	16
VI Western Visayas	57.7	67.5	64.1	10	10	10
VII Central Visayas	89.7	87.5	88.3	3	7	7
VIII Eastern Visayas	48.5	59.5	55.7	15	15	15
IX Zamboanga Peninsula	49.1	64.2	59.0	14	12	14
X Northern Mindanao	81.0	105.7	97.2	6	4	5
XI Davao Region	87.8	98.8	95.0	4	6	6
XII SOCCSKSARGEN	59.6	63.0	61.8	9	13	13
XIII Caraga	57.3	65.2	62.5	11	11	11
BARMM Bangsamoro Autonomous Region in Muslim Mindanao	24.1	33.2	30.0	17	17	17
Philippines	100.0	100.0	100.0			

In terms of rank, NCR and CALABARZON are consistently the top two regions with the highest compensation per capita as well as GDP per capita. The bottom four regions for both variables are also the same, namely, BARMM, Bicol Region, Eastern Visayas, and Zamboanga Peninsula. Other regions had different ranks. For instance, CAR which is third among regions in terms of per capita GRDP is seventh overall in the compensation per capita. This can be explained by the lower shares in compensation of the region relative to total with more industries that are more



capital intensive rather than labor intensive. In contrast, Central Visayas which ranked seventh in terms of GDP per capita is third among regions in terms of compensation per capita. This is due to higher shares of labor-intensive industries in the region particularly Services. (Figure 2)

**Figure 2. Ranking of Compensation Per Capita and GRDP Per Capita by Region, 2018**



### 3.3 Estimated Net Primary Income from Outside the Region [NPI (OR)]

Currently in the Philippine official statistics, GRDP is used to measure the economic output in the region. This corresponds to the GDP at the national level disaggregated into seventeen regions. At the national level, Gross National Income (GNI) is also being estimated as measure of the country's total income. The difference between the GNI and GDP is the NPI from the rest of the world.

As one of the major results in this study, NPI(OR) are derived for each of the 17 regions in the Philippines. As a result, GRI, the counterpart of GNI at the regional level are also estimated. GRI is the sum of GRDP and NPI(OR) for each the regions.

At the national level, GDP in 2018 was estimated at Php 18.27 trillion while GNI was valued at Php 20.21 trillion. The difference is the NPI from the rest of world estimated at Php 1.95 trillion. [2]. Big share of this value came from the compensation of the Philippine residents working outside the country. In the total GNI of the country in 2018, about 90.4 percent came from GDP or the amounts of goods and services produced in the country while the 9.6 percent came from NPI.

Table 4 presents the result of the exercise done in this study on the share of GRDP and NPI(OR) to GRI. Estimates show that among the 17 regions, only NCR has a net outflow. This means that NCR paid more income to non-residents than it received from other regions. This further indicates that GRI in NCR is lower than its GRDP. This situation can be explained by the substantial number of people working in NCR but are residing outside NCR.

For all the other regions, the share of NPI(OR) to GRI are positive. Of the 16 regions outside NCR, only Northern Mindanao had a single digit percent share of NPI(OR) to GRI at 7.6 percent. Those with high shares in NPI(OR) are Ilocos Region (31.8 percent), Cagayan Valley (28.3 percent), Western Visayas (26.7 percent), and CALABARZON (26.3 percent).

**Table 4. Estimated Shares of Gross Domestic Product and Net Primary Income to Gross National Income by Region, 2018**

Region		Share to GRI (%)		
		GDP	NPI	GRI
NCR	National Capital Region	137.5	- 37.5	100.0
CAR	Cordillera Administrative Region	78.6	21.4	100.0
I	Ilocos Region	68.2	31.8	100.0
II	Cagayan Valley	71.7	28.3	100.0
III	Central Luzon	76.5	23.5	100.0
IVA	CALABARZON	73.7	26.3	100.0
	MIMAROPA Region	77.8	22.2	100.0
V	Bicol Region	80.3	19.7	100.0
VI	Western Visayas	73.3	26.7	100.0
VII	Central Visayas	82.3	17.7	100.0
VIII	Eastern Visayas	79.9	20.1	100.0
IX	Zamboanga Peninsula	79.7	20.3	100.0
X	Northern Mindanao	92.4	7.6	100.0
XI	Davao Region	89.3	10.7	100.0
XII	SOCCSKSARGEN	77.2	22.8	100.0
XIII	Caraga	84.1	15.9	100.0
BARMM	Bangsamoro Autonomous Region in Muslim Mindanao	80.6	19.4	100.0
	Philippines	90.4	9.6	100.0

### 3.4 Comparison of GRDP and GRI

With the estimation of GRI in each of the 17 regions, additional economic indicators can be analyzed aside from GRDP. Comparing the distribution among regions, Table 5 presents the differences between GRDP and the estimated GRI. While NCR had a share of 31.8 percent to GRDP, it narrowed down to 20.9 percent in GRI or a 10.9 percent difference in regional share. Notably, shares of the 15 out of 16 regions outside NCR have higher shares in GRI than their respective shares in GRDP. Aside from NCR, Northern Mindanao is the other region with lower shares albeit only 0.1 percentage point.

Notable difference in shares in GRI as compared in the GRDP are also observed in CALABARZON which increased from 14.8 percent in GRDP to 18.2 percent in GRI, and Central Luzon from 11.3 percent to 13.3 percent. This indicates that in terms of income, the gap between NCR and these two adjacent regions are lower than that in production value. This can be explained by the number of workers residing in the provinces in these regions travelling to or temporarily staying in NCR for work. In general, the gap with the regions with respect to NCR is narrower in GRI as compared with GRDP.

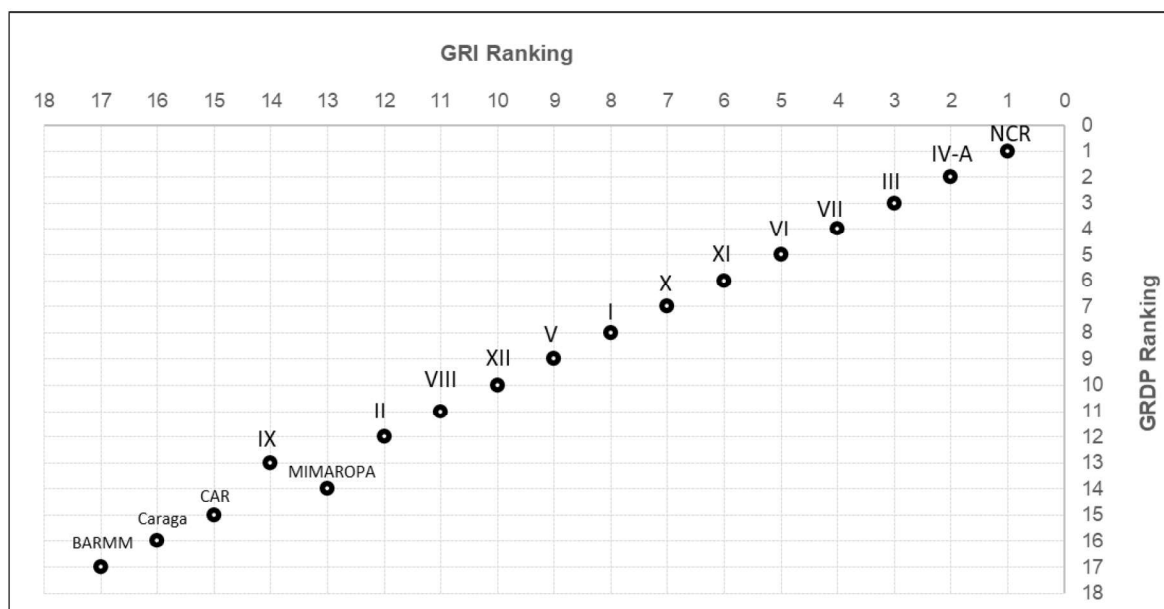
In terms of rank, there is hardly notable difference in the ranking of the regions both in terms of GRDP and GRI. (*Figure 3*)



**Table 5. Comparison of Shares of Gross Domestic Product and Gross National Income by Region, 2018**

Region		Share to Total (%)		Difference (in % point/s)	Rank	
		GDP	GRI		GDP	GRI
NCR	National Capital Region	31.8	20.9	-10.9	1	1
CAR	Cordillera Administrative Region	1.7	1.9	0.3	15	15
I	Ilocos Region	3.2	4.3	1.0	8	8
II	Cagayan Valley	2.1	2.7	0.5	12	12
III	Central Luzon	11.3	13.3	2.0	3	3
IVA	CALABARZON	14.8	18.2	3.4	2	2
	MIMAROPA Region	2.0	2.4	0.3	14	13
V	Bicol Region	2.9	3.2	0.4	9	9
VI	Western Visayas	4.7	5.8	1.1	5	5
VII	Central Visayas	6.5	7.1	0.6	4	4
VIII	Eastern Visayas	2.4	2.8	0.3	11	11
IX	Zamboanga Peninsula	2.1	2.4	0.3	13	14
X	Northern Mindanao	4.5	4.4	-0.1	7	7
XI	Davao Region	4.6	4.7	0.1	6	6
XII	SOCCSKSARGEN	2.5	2.9	0.4	10	10
XIII	Caraga	1.6	1.7	0.1	16	16
BARMM	Bangsamoro Autonomous Region in Muslim Mindanao					
		1.3	1.4	0.2	17	17
Philippines		100.0	100.0			

**Figure 3. Ranking of GRDP and Estimated GRI by Region, 2018**



### 3.5 Comparison of GRDP Per Capita and GRI Per Capita

Per capita GRDP is used to indicate the economic output of each person in a region in the current official statistics in the Philippines. In 2018, average GDP per capita in the country was estimated at Php 172.7 thousand. NCR had the highest per capita GRDP followed by CALABARZON, CAR, and Central Luzon. These regions recorded higher per capita GRDP compared to the national level annual.

This paper estimates per capita GRI as additional economic indicator which reflects the average earnings of each person in a region, regardless of his place of work. Based on the results of the study, NCR has the highest per capita GRI among all the regions as indicated by the index of 164.4. This value indicates that per capita GRI in NCR is 64.4 percent higher than the national average. Similar to the per capita GRDP, the other regions with per capita GRI higher than the per capita GNI are CALABARZON, Central Luzon and CAR. (*Table 6*)

Among all the regions, only NCR recorded higher per capita GRDP than the derived per capita GRI. This indicates that on a per capita basis, the primary income disbursed by NCR to residents of other regions is higher than the income received by its residents from outside the region. Meanwhile, larger differences between per capita GRI and per capita GRDP are observed in the neighboring regions of NCR, namely, CALABARZON and Central Luzon, as well as in Ilocos Region, CAR, and Cagayan Valley. This implies that on the average, the income of the residents of these regions who are working outside are higher than the income paid by these regions to the residents of other regions.

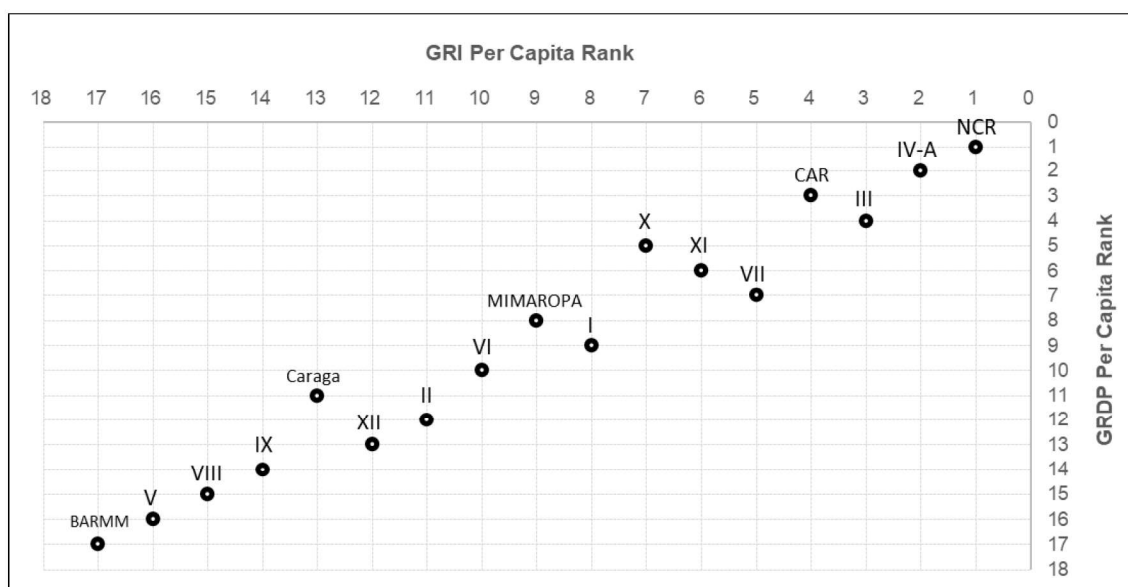
**Table 6. Estimated Per Capita Index of GRDP and Per Capita GRI by Region, 2018**

Region		Per Capita Index		Rank	
		GDP	GRI	GDP	GRI
NCR	National Capital Region	250.2	164.4	1	1
CAR	Cordillera Administrative Region	100.5	115.6	3	4
I	Ilocos Region	65.7	87.1	9	8
II	Cagayan Valley	62.3	78.5	12	11
III	Central Luzon	100.4	118.6	4	3
IVA	CALABARZON	101.7	124.7	2	2
	MIMAROPA Region	69.4	80.6	8	9
V	Bicol Region	50.3	56.6	16	16
VI	Western Visayas	64.1	79.1	10	10
VII	Central Visayas	88.3	97.0	7	5
VIII	Eastern Visayas	55.7	63.0	15	15
IX	Zamboanga Peninsula	59.0	66.8	14	14
X	Northern Mindanao	97.2	95.0	5	7
XI	Davao Region	95.0	96.1	6	6
XII	SOCCSKSARGEN	61.8	72.4	13	12
XIII	Caraga	62.5	67.2	11	13
BARMM	Bangsamoro Autonomous Region in Muslim Mindanao	30.0	33.7	17	17
	Philippines	100.0	100.0		

Comparing the ranks among regions, NCR and CALABARZON consistently topped in both per capita GRDP and per capita GRI. Also, the regions of BARMM, Bicol, Eastern Visayas, and Zamboanga Peninsula are the least regions in both indicators. (*Figure 3*) However, while the ranks among regions do not vary much between the two indicators, the variability of per capita GRI is lower than the per capita GRDP.



**Figure 3. Ranking of GRDP Per Capita and Estimated GRI Per Capita by Region, 2018**



### 3.6 Comparison of GRDP and GRI Per Employed Person

At current official statistics, labor productivity is being measured by dividing GRDP by the number of resident persons employed. At the national level, the annual GDP per employed person is at Php 463.8 thousand pesos. Among the 17 regions in the country, only NCR and Central Luzon recorded higher GRDP per employed person as compared to the national average.

Meanwhile, with the experimental method in deriving the GRI in this study, estimated GRI per employed person showed that NCR employed residents still had the highest labor productivity. As shown in Table 7, the GRI per employed person index in NCR is 163.1 indicating 63.1 percent higher than the national average. This value relative to the national average is much lower as compared to that using GRDP with 248.2 indicating that GRDP per employed person in NCR is 148.2 percent higher than the national average. Aside from NCR, regions with GRI per employed person higher than the national average are Central Luzon (123.7), CALABARZON (118.3) and CAR (113.4). Also closer to the national average are Davao Region and Central Visayas with GRI per employed index values of 98.8 and 97.8, respectively.

Meanwhile, regions with the lowest GRI per employed person are BARMM (47.5), Bicol Region (59.5), SOCCSKSARGEN (62.4), Caraga (63.6), and Eastern Visayas (64.7).

**Table 7. GRDP and GRI per Employed Person Index by Region, 2018**

Region		Per Employed Person Index		Rank	
		GDP	GRI	GDP	GRI
NCR	National Capital Region	248.2	163.1	1	1
CAR	Cordillera Administrative Region	98.7	113.4	3	4
I	Ilocos Region	65.9	87.3	9	7
II	Cagayan Valley	60.7	76.5	12	11
III	Central Luzon	104.8	123.7	2	2
IVA	CALABARZON	96.4	118.3	5	3
	MIMAROPA Region	70.6	82.0	8	9
V	Bicol Region	52.9	59.5	16	16
VI	Western Visayas	63.2	78.0	11	10
VII	Central Visayas	89.0	97.8	6	6
VIII	Eastern Visayas	57.2	64.7	14	13
IX	Zamboanga Peninsula	63.5	72.0	10	12
X	Northern Mindanao	84.5	82.7	7	8
XI	Davao Region	97.6	98.8	4	5
XII	SOCCSKSARGEN	53.3	62.4	15	15
XIII	Caraga	59.1	63.6	13	14
BARMM	Bangsamoro Autonomous Region in Muslim Mindanao	42.3	47.5	17	17
	Philippines	100.0	100.0		

#### IV. Conclusions and Way Forward

Currently, the GRDP is still the single most important indicator of the overall state of an economy in the regional level. At the same time, it plays crucial role for the development of statistics at the subnational level. The GRDP as presented by annual growth provides indicator of the economic condition of the region. However, the information from the GRDP is limited, by definition, on the aggregate amount of goods and services produced in the region in a particular year. This does not fully represent the amount of income generated by the region from its residents and other assets.

Patterned from the concept of GNI at the national level, this paper was able to explore additional indicator for regional comparison – the Gross Regional Income. Among the highlights of the result of this study is that differences across regions are not as varied in GRI as compared with that of the GRDP. The per capita income as well as productivity showed clear differences between the two measures. The inequality pattern as observed in GRI is also not as large as that with the GRDP. However, the rankings of the regions are not significantly different.

The GRDP measure will remain as the main indicator of economic activity while GRI provides additional guidance to planners and policy makers. However, for the continuing development of this measure and for the continuing improvement of the measurement of GRDP, supporting mechanisms to improve subnational statistical system should be maintained.

Specifically, the following supporting mechanisms towards improvement in data system is being recommended:

1. Revisit data sources to link with the conceptual requirement in the SNA.
2. Strengthen establishment surveys and census to track the residency of workers by region.



3. Improve the domestic trade statistics to monitor the transactions and flows of goods between and among regions.
4. Enhance coordination mechanisms to generate local statistics from administrative sources in the Local Government Units through the Regional Development Council and Regional and Provincial Statistical Committees.

The methodology proposed in this paper covers only the benchmark level estimation, with data coming mostly from CPBI and FIES which are only done every six and three years, respectively. Timely, relevant, and quality data are needed for annual estimation of these regional indicators.

Cooperation between the PSA and data partners is very important to maintain the quality of data. This can be done by ensuring that administrative and survey data are complete, comprehensive, and comparable. Support from data partners is likewise necessary in revolutionizing data in response to the changing economic landscape. In the advent of digitalization, globalization, and the challenges of sustainability, there is a need to innovate the way data are collected for the advancement of economic accounts measurement.

Equally important is to continually advocate and capacitate the stakeholders for effective use of subnational economic accounts for policy actions, and to demonstrate actual policy use through linkage in crafting national laws and local policies and regulations.

More importantly, to advance the agenda of developing more responsive subnational accounts statistics, it is imperative to provide substantial support in the national accounts by increasing statistical capacity, both financial and manpower resources. The potential of this new statistical product in generating a more comprehensive analysis of economic situations at the subnational level shall strengthen the call for support from other government agencies on the provision of additional budget for subnational activities.

## References

- [1] Commission of the European Communities, International Monetary Fund, Organization for Economic Cooperation and Development, United Nations, and World Bank. (2010). *System of National Accounts 2008*. 34, 131-135. <https://unstats.un.org/unsd/nationalaccount/sna2008.asp>
- [2] Philippine Statistics Authority. (2022). 2019-2021 Gross Regional Domestic Product Base Year 2018. 1-11. <https://psa.gov.ph/content/gross-regional-domestic-product>
- [3] Philippine Statistics Authority. (2022). Technical Notes on the 2018 Input-Output Accounts. <https://psa.gov.ph/statistics/input-output/tech-notes>
- [4] Philippine Statistics Authority, (2022). Technical Notes on Gross Regional Domestic Product. <https://psa.gov.ph/grdp/technical-notes>
- [5] Philippine Statistics Authority. (2020). 2018 Census of Philippine Business and Industry: Economy Wide. [https://psa.gov.ph/sites/default/files/attachments/itsd/specialrelease/Explanatory%20Notes\\_2.pdf](https://psa.gov.ph/sites/default/files/attachments/itsd/specialrelease/Explanatory%20Notes_2.pdf)
- [6] Philippine Statistics Authority. (2020). 2018 Family Income and Expenditure Survey. 1-15. <https://psa.gov.ph/sites/default/files/FIES%202018%20Final%20Report.pdf>
- [7] Philippine Statistics Authority. (2012). Technical Notes on the Labor Force Survey (LFS). <https://psa.gov.ph/content/technical-notes-labor-force-survey-lfs>