

Multiplier Income Impact of Economy on Maluku Province – Analisis Input Output

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Abstract

Economic development has been undertaken to improve the community and government revenue. One response indicated by the central government is a change of policy more autonomy to the regions, namely the granting of authority to local governments to determine the direction of regional development policies that are expected to affect national development targets, such as economic growth, job creation and distribution of income will be affected by the investment. To see the impact on the economy of Maluku revenue based on data input and output. Economic sectors Maluku province that has the largest income multiplier value indicates that if there is an increase in revenue of the unit in these sectors will have an impact on improving people's income multiplier of income in the sector. Maluku Province as an archipelago in various capacities or local potential (local specific), would have the ultimate goal of the development process does. For that if the local government wants to achieve a goal or a target goal to be achieved is to increase the income of the people of Maluku province and local governments should encourage each sector in accordance with the income multiplier value. As the field actors (stakeholders) society can allocate each unit earned income that can be spent to output the sectors that have the greatest income multiplier value. Thus if the income multiplier becoming a target or targets local governments must optimize the increase in revenue to the economy in the province of Maluku.

Keywords: Output, Income, Economic and Maluku.

1. Introduction

The economic impact is an economic outcome that occurs as a result of other economic processes. Cause and effect of this process is based on the relationship between the economies with other economic activities. If there is a correlation between a variable or variables of economic activity or other economic activity then it shows the interdependence between the variables with other variables. In the IO models, the magnitude of this correlation is very strong even be mentioned as a deterministic correlation, i.e. the magnitude of the correlation approaching one. When there is a change in the activity it can be ascertained that these activities will have an impact on other economic activities.

This impact analysis model is often used to predict the output of gross value added, import requirements and the creation of employment with a note that final demand is already known and the results are very useful as a basis for planning the economy of a country or region. To increase the output of the input required, while the input is also the output of other sectors or from its own sector. This is the essence of the relationship between the sectors is interwoven in the IO table. Or in other words it can be said analysis multiplier (multiplier analysis) is one common type of analysis performed to assess the changes to the variable-specific endogenous variables in the event of changes in exogenous variables such as the structure of final demand in the economy. Changes in exogenous variables (final demand) an analysis of the sector in the multiplier includes three variables of primary interest include: creation multiplier output, income and employment. In the analysis of the multiplier is usually used two types of multipliers such as: multiplier type I (Type I) and multipliers type II (Type II).

Local government policies usually make the size of the economic growth as a successful development using criteria multiplier output as one of the criteria for policy assessment. To that effect the output of each sector of the economy is affected by the components of final demand and it can be seen that most of the output that is created in Maluku province formed due to the boost household consumption. Other components are also considerable influence in shaping the output is export and government consumption, both the form of output in the economy of Maluku.

2. Methods

2.1. Methods and Data Analysis

Data used in this research is secondary data types. The data used is data Input Output Moluccas in 2004 and 2007 on the basis of producer prices. The research method using Input Output analysis assisted with the Excel program and Eviews7

2.2. Input-Output Analysis

Analysis of input output (input-output analysis) is an analysis of the region's economy in a comprehensive manner as to see the connection between economic sectors in the region as a whole. Thus, in case of changes in the level of production on a particular sector, the impact on other sectors. Moreover, this analysis is also related to the level of prosperity of the community through the primary input (value-added). That is, due to changes in the level of production in these sectors, it can be seen how much the prosperity of society increases or decreases. Each product must require input so that the product can be produced. The results of the product can be consumed directly or as an input to produce other products or inputs for the same product in the next round, for example seedlings. Input can be the output of other sectors that are often referred to as intermediate inputs in the form of raw materials and primary inputs such as labor, expertise, equipment, and capital. The participation of the factors of production will be rewarded the public revenue in accordance with the role or involvement. This illustrates that the sectors in the economy of a region intertwined with each other (Tarigan, 2006).

Input-output table is a matrix that photographing economic activity of a region or country at a particular time (1 year) of economic activity that records transactions related input output across sectors and was first introduced by W. Leontief (Nazara 1997 Budiharsono 2001, Muchdie 2002). Input-output table is able to estimate the impact of the development of a sector as in the study of income in the area / country as a whole to the public revenue (Miller & Blair 1985). Input output table consists of four quadrants: (1) Intermediate quadrant (Quadrant I) is a quadrant demand Between the flow of goods and services used in the production process, (2) Final demand (quadrant II or Gross Domestic Regional Product) is the end of the transaction request originated of production output and imported into a variety of uses, (3) Primary input quadrant (quadrant III = value added), i.e. the use of primary inputs that generate gross regional domestic product, and (4) Primary input-finals demand quadrant (quadrant IV) that the transaction Between the direct primary input to final demand without transmission mechanism (rarely used).

For line:

$$\sum_{i=1}^n X_{ij} + F_i = X_j \quad \forall i = 1, 2, 3, \dots, n \dots \dots \dots (1)$$

where: X_i = Number of total output of the i-th sector (row)
 X_{ij} = Total output of the i-th sector purchased the j-th sector
 F_i = Total final demand sector output ith

For column:

$$\sum_{j=1}^n X_{ij} + V_i + m_j = X_i \quad \forall j = 1, 2, 3, \dots, n \dots \dots \dots (2)$$

where: X_j = Number of total output of sector j (column)
 X_{ij} = Total output of the i-th sector are sold to sector j
 V_j = Total added value to the sector-j
 m_j = Import sector j
 $i = j = 1, 2, 3, \dots, n$

Flow between sectors can be transformed into the coefficients assuming fixed purchase amount.

$$ij = \frac{x_{ij}}{X_j} \dots \dots \dots (3)$$

Or

$$j = a_{ij} X_j \dots \dots \dots (4)$$

By inserting equation (4) into equation (1) obtained:

$$\sum_{i=1}^n a_{ij} x_j + F_i = x_j \quad \forall i = 1, 2, 3, \dots, n \dots \dots \dots (5)$$

In matrix notation the equation (5) can be written, as follows:

$$AX + F = X \dots \dots \dots (6)$$

Basic relationship of input output table:

$$(I-A)^{-1} F = X \dots \dots \dots (7)$$

Leontief inverse matrix $(I-A)^{-1}$, which is how the increase in the production of a sector will lead to the development of other sectors.

2.3. Revenue impact

To see the impact on the economy of Maluku revenue based on data input and output:
 Impact on Output formation (X_{fid})

$$a. \quad X_{fid} = (I-A)^{-1} (fid) \dots \dots \dots (8)$$

Impact on Employment (L_{ik})

$$b. \quad L_{ik} = e (I-A)^{-1} (fid) \dots \dots \dots (9)$$

Impact on income (I)

$$c. \quad I = \sum P x_i \quad \sum V x_i \quad x V_{fid} \dots \dots \dots (10)$$

in which:

- $(I-A)^{-1}$ = Leontief inverse matrix
- e = Coefficient matrix labor
- V = Matrix coefficient value added
- fid = Value of agricultural investment
- Px_i = Value of wages and salaries in the sector i domestic transactions matrix
- Vx_i = Gross value added sector i in domestic transactions matrix

3. Discussion

3.1. Income Multiplier 2004 and 2007

Direct effect is calculated from the input coefficients cannot describe the results of a multiplier as a basis in the preparation of a plan or development sector planning decisions. This is related to the input coefficient is yet able to provide an overview of the influence of the sector to the economy as a whole region. Thus shooting direct effect calculated from the results of the analysis of Input-Output tables are the results of the analysis multiplier (multiplier) derived from the Leontief inverse matrix table.

From the calculation of the income multiplier as shown in Table 1 and 2 seen some sectors that can give direct effect to the maximum to improve household incomes in the province of Maluku. The following may be displayed ten largest revenue multipliers sector by economic sector Maluku Province in 2004 and 2007 as shown in the table below:

Table 1. Ten Sector Income Multiplier Largest Economy by Sector Maluku province Year 2004

No	Code	Sector Description	Value (million IDR)
(1)	(2)	(3)	(4)
1	54	Building rental	4.0396
2	43	Building	2.8827
3	33	Plywood Industrial	2.3200
4	35	Manufacture of other goods from wood and other forest products	1.8823
5	29	Sugar Industrial	1.8641
6	34	Sawmill Industrial	1.7320
7	25	Rice milling industry	1.7057
8	31	Industri kain tenun	1.6486
9	39	Cement dan Non-metalic minerals	1.6159
10	27	Animal and vegetabes oils industrial	1.5744

Source : Input-Output table Maluku Province 2004. By tread

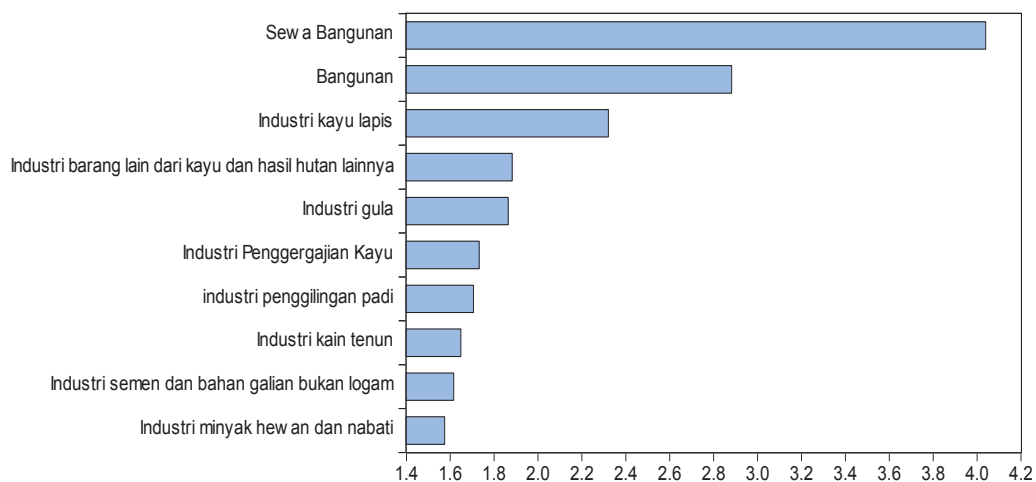


Figure 1. Ten Sector Income Multiplier by the Numbers Biggest of 2004

From the calculation of the income multiplier is seen that the sector can provide the maximum effect to the increase of income of the people in Maluku is building rental sector is equal to 4.0396. An increase in revenues of one unit in people who work in this sector will lead to the formation of public revenue as a whole amounted to 4.0396. While many sectors that do not provide sufficient effect, means to increase people's income but are still included in the group of 10 major industrial sectors of animal and vegetable oils. This sector has a multiplier value income amounted to only 1.5744. This means that if there is an increase in revenue of the units in this sector only affect the income of the people in Maluku at 1.5744.

Table 2. Ten Sector Income Multiplier Largest Economy by Sector Maluku Province in 2007

No	Code	Sector Description	Value (million IDR)
(1)	(2)	(3)	(4)
1	43	Construction	2.2993
2	35	Manufacture of other goods from wood and other forest products	2.0089
3	33	Plywood industry	1.8507
4	34	Sawmill Industrial	1.8345
5	25	rice milling industry	1.7446
6	54	rental Building	1.5701
7	31	Industrial woven fabric	1.5691
8	28	Industrial Bakery, biscuits and the like	1.5539
9	27	animal and vegetable oils industrial	1.5496
10	30	Other food and beverage industry	1.5344

Source: Input-Output table Maluku Province 2007. By tread

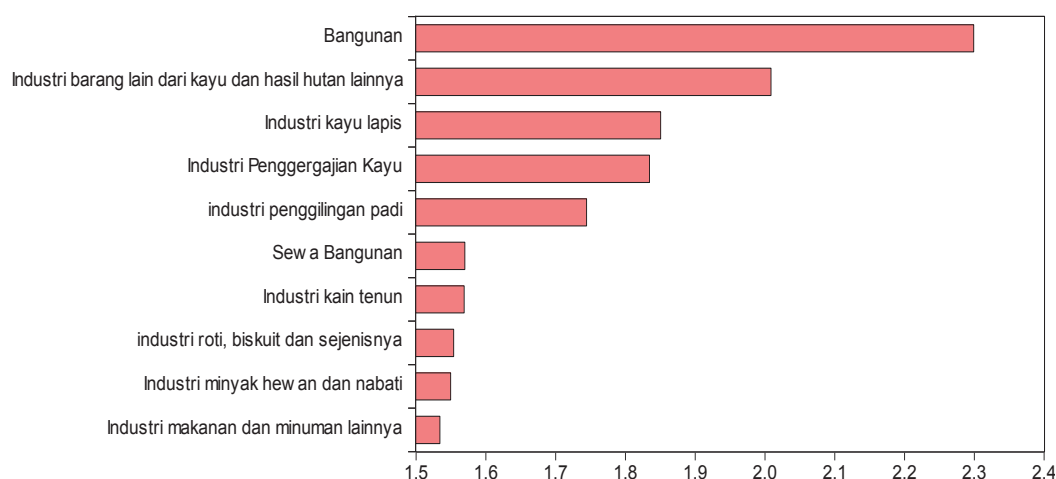


Figure 2. Ten Sector Income Multiplier By the Numbers Biggest Year 2007

Sectors that provide the maximum effect on people's income is based on the calculation of the income multiplier is the greatest: the construction sector (43) of 2.2993 this value gives the sense that if the value of the building sector income multiplier of 2.2993 then the sector will lead to the formation of public revenue overall amount of the building sector income multiplier. Likewise against nine other sectors as shown in Table 2. The sectors that have the greatest income multiplier indicates that, an increase in revenue of the unit on the people working in the sector will lead to the formation of public revenue overall amount of the income multiplier in the sector.

Accordance with the results of analysis of the income multiplier according to economic sectors Maluku seen some sectors that have the biggest income multiplier value. Sectors including ten largest sectors are: industrial sectors other items of wood and other forest products (35), the plywood industry (33), industrial sawmills (34), rice milling industry (25), the lease of the building (54), industrial woven fabric (31), industrial bread, biscuits and the like (28), animal and vegetable oil industry (27) and sectors of the food industry and other beverages (30). Economic sectors Maluku province that has the largest income multiplier value indicates that if there is an increase in revenue of the unit in these sectors will have an impact on improving people's income multiplier of income in the sector.

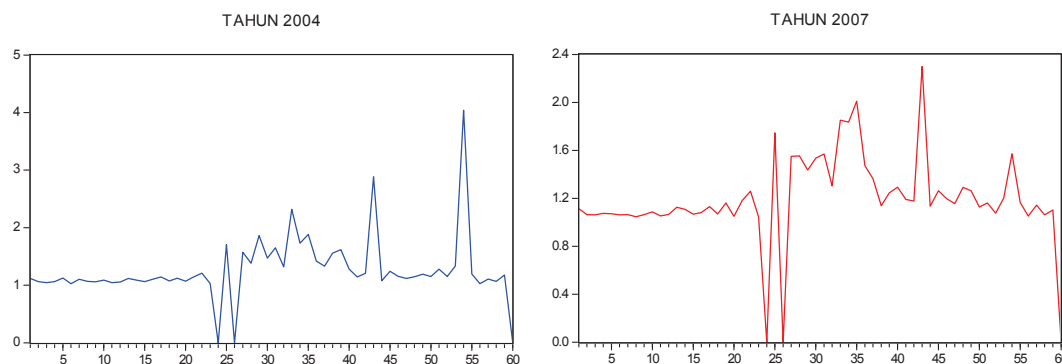


Figure 3. Structure Figures Income Multiplier Each Sector Type I

Maluku Province as an archipelago in various capacities or local potential (local specific) certainly has the ultimate goal of the development process does. For that if the local government wants to achieve a goal or a target goal to be achieved is to increase the income of the people of Maluku province and local governments should encourage each sector in accordance with the income multiplier value. As the field actors (stakeholders) society can allocate each unit earned income that can be spent to output the sectors that have the greatest income multiplier value. Thus if the income multiplier becoming a target or targets local governments must optimize the increase in revenue to the economy in the province of Maluku.

The impact of the final demand for the creation of income communities in Maluku had shown the same pattern with the creation of its output, influence the creation of public revenue in Maluku turns largely due to the influence of household consumption.

4. Conclusion

1. The sectors that have the greatest income multiplier indicates that, an increase in revenue of the unit on the people working in the sector will lead to the formation of public revenue overall amount of the income multiplier in the sector.
2. The problem of income distribution should also be a common concern. Therefore, it is necessary to build a clear framework, encouraging self-reliance of local communities so that the economy can be run as expected.

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