



PERFORMANCE AND COMPARISON 40 BANDUNG INDUSTRIAL SECTOR BASED ON GROWTH RATIO MODEL

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ABSTRACT

Implementation of regional autonomy, is a momentum for the start of the implementation process of local economic development policies. The enactment of regional autonomy has implications for the region to issue and develop its capability in mobilizing and managing the production, allocation and distribution of its resources so that it becomes a superior product that has the advantage of comparative and competitive competitiveness, both for regional, national even international market. To that end, the local government should make good planning, correct evaluation, and the implementation of appropriate policies, so that economic growth in the region can increase, so that development can be realized. Development of Bandung city as an integral part of regional and national development, is essentially an integrative process both in the level of planning, implementation and control are done continuously in order to realize the welfare of society. The purpose of this study is to classify industrial sectors, so that will be described which industries are able to compete and which are still weak. Of the 40 industry sectors in Bandung city, 67.5% are able to compete with other industries at both the city and provincial levels. As much as 30% of the industry sector, its growth is higher than similar industries at the provincial level but not able to compete with other industries in Bandung city. While 2.5% of the industrial sector, growth is lower both at the city level and at the provincial level.

Key Words: output input model, Growth Model, industry classification, backward and forward linkages

1. INTRODUCTION

Economic growth is the growth of all activities of business activities that in real terms an addition to the ability to produce goods and services. Therefore, the growth of the region is the addition of the real capability of any economic activity existing in the region in producing goods

and services. High regional growth in an area, indicating the successful development of the area. As the capital city of the province and one of the big cities in Indonesia, Bandung City has been quite successful in utilizing the existing resources, so the economic growth rate of the last five years tends to increase, even higher than West Java Province, where the average difference of five years Last 2.04%, seen in Table 1.

Table 1: Economic Growth Rate of Bandung and West Java 2011-2015 (%)

<i>Year</i>	<i>Bandung City</i>	<i>West Java</i>
2011	7.91	6.50
2012	8.53	6.50
2013	7.84	6.34
2014	7.71	5.06
2015	7.63	5.03

Source: The Central Bureau of Statistics

Implementation of development carried out in a region is basically a series of development process implementation process. In Law no. 32 of 2004 said that the effort of giving great authority to the region is expected to create community empowerment, cultivate initiative and creativity and increase community participation. In addition, granting greater authority to regions (in the form of wider autonomy) is expected to encourage economic growth and increase the level of efficiency in development (Suwandi,2002)

The development process is expected to be faster with regional autonomy. Regional autonomy can be a driver of economic growth and the rapid growth of the welfare of Indonesian society. This can be done if development in the region refers to the potential of the region (Sukarti in Alhemp, 2014). Therefore, the implementation of regional autonomy, is a momentum for the start of the implementation process of local economic development policies. The enactment of regional autonomy has implications for the region to issue and develop its capacity to mobilize and manage the production, allocation and distribution of its resources. To that end, the local government should make good planning, correct evaluation, and the implementation of appropriate policies, so that economic growth in the region can increase, so that development can be realized.

Development of Bandung city as an integral part of regional and national development is essentially an integrative process both in the level of planning, implementation and control are carried out continuously in order to realize the welfare of society. Therefore, the city of Bandung should be able to issue and develop its capability in mobilizing and managing the production, allocation and distribution of its various resources to produce products that have comparative and

competitive advantages, whether local, regional, national even international markets. One of the tools that can be used to perform the analysis is the input output model.

Reform of the current government system led to a shift in the orientation of regional development from sector-oriented development to regional development. Development based on regional development views the importance of intersectoral and interspatial integration between development actors in the regions and between regions (Tatiana, 2015). Therefore, the purpose of this study is to analyze the comparison of industrial sectors in Bandung city and West Java Province, so it can be classified any industry that can compete and which industries are still weak.

2. INPUT OUTPUT ANALYSIS

For the purposes of planning and evaluation of overall development outcomes on a national scale as well as a smaller scale, the regional development planning approach model can use an input-output analysis model. Through output input analysis model can be seen interrelationship between sectors in the economy so it can know the performance of a sector in the economy and appropriate economic policy measures in development (Amir 2005).

The input-output analysis is based on the input-output table. Along the columns shows the input structure used by each sector in its production activities, while the rows in the table shows the composition of supply and demand of a sector. Supply may come from domestic output (X) and imports for similar products (M). While the demand consists of demand between (Z) and the final demand (F). The entries along the column of the table show the input arrangement used in the production process by a sector. The input factor consists of the input between (Z) and the primary input (V). The relationship of all variables is described as follows:

$$\text{Output side:} \quad Z+F=M+X$$

$$Z+(F-M)=X$$

$$Z+Y=X$$

$$\text{Input side:} \quad Z+V=X$$

Suppose the economy consists of two economic sectors, then the relationship variable is expressed as follows:

$$\left. \begin{array}{l} \text{Output side:} \quad \begin{pmatrix} z_{11} & z_{12} \\ z_{21} & z_{22} \end{pmatrix} + \begin{pmatrix} C_1 + G_1 + I_1 + E_1 - M1 \\ C_2 + G_2 + I_2 + E_2 - M2 \end{pmatrix} = \begin{pmatrix} X_1 \\ X_2 \end{pmatrix} \\ \text{Input side:} \quad \begin{pmatrix} z_{11} & z_{12} \\ z_{21} & z_{22} \end{pmatrix} + \begin{pmatrix} L_1 & L_2 \\ N_1 & N_2 \end{pmatrix} = \begin{pmatrix} X_1 \\ X_2 \end{pmatrix} \end{array} \right\} \quad (1)$$

with:

C = household consumption, G = government spending, I = investment

E = export, M = import, L = labor, N = value added

2.1 Growth Ratio Model

The growth ratio model (MRP) can describe economic activities, especially economic structures that emphasize growth criteria both external and internal. The MRP analysis approach is divided into: (1) the region growth ratio (RP_R) and (2) the growth rate of the study area (RP_S). RP_R compares the growth of each sector / industry in the context of the region with the GRDP of the region concerned. If the RP_R value is greater than 1, it is said (+), and if less RPR than 1 it is said (-). From the analysis of the MRP will be obtained the real value and nominal value, then based on the combination will be obtained description of potential economic activities at the level of the region consisting of 4 classifications, namely: (1) Sectors growing prominent at the reference level and regional; (2) Sectors with reference levels have prominent growth but at the regional level are not yet prominent; (3) Sector at the regional level has a prominent growth but at the reference level is not yet outstanding; (4) Sectors at both the reference level and at the regional level have low growth.

The growth ratio model (MRP) can describe economic activities, especially economic structures that emphasize growth criteria both external and internal. From this analysis will be obtained the real value and nominal value then based on the combination will be obtained description of potential economic activities at the level of region consisting of 4 classifications, namely:

- a) Classification 1, which is a positive value in the reference region growth ratio (RP_R) and study area (RP_S). This indicates that the sector has remarkable growth both at the regional level and at the reference level.
- b) Classification 2, positive value on RP_R and negative on RP_S . This means that the industry is growing prominently in reference areas but not yet prominent in the study area.
- c) Classification 3, negative value on RP_R and positive on RP_S . This means that the growth industry is not prominent in reference areas but stands out in the study area. Viewed from the position of the study area, such industries are expected to play a role in contributing to the growth of reference areas, so that such industries are potential to be developed in reference areas.
- d) Classification 4 is negative both in RP_R and RP_S . Means that the industry growth is not prominent either in the reference area or in the study area.

The values required for RP_R and RP_S model are as follows:

ΔE_{ij} = Changes in output / added value of the sector / industry in the region in the initial period (t) and the final period (t + n).

ΔE_{iR} = Change of output / added value of the sector / industry i in the reference region in the initial period (t) and the final period (t + n).

ΔE_R = Change of output / added value of sectors / industries in the reference region in the initial period (t) and end period (t + n).

E_{ij} = Output / added value of sector / industry i in region.

E_{iR} = Output / value added of the sector / industry i in the reference area.

E_R = Total output / added value in the reference region.

Of these values will be obtained:

- a) Growth Ratio of Reference Areas (RP_R). RP_R Growth Ratio of Reference Areas (RPR). RPR is the ratio of growth rate of activity i of reference region to total growth rate of reference region.

$$P_{ij} = \left[\frac{\Delta E_{iR}}{E_{iR(t)}} - \frac{\Delta E_R}{E_{(t)}} \right] E_{ij(t)}$$

$$\frac{P_{ij}}{E_{ij(t)}} = \left[\frac{\Delta E_{iR} E_{R(t)}}{E_{iR(t)} E_{R(t)}} - \frac{\Delta E_R E_{iR(t)}}{E_{(t)} E_{R(t)}} \right]$$

$$\frac{P_{ij}}{E_{ij(t)}} = \left[\frac{\Delta E_{iR} E_{R(t)}}{E_{iR(t)} E_R} - 1 \right] \frac{\Delta E_{iR}}{E_{R(t)}}$$

$$\frac{E_{R(t)} P_{ij}}{\Delta E_R E_{ij(t)}} + 1 = \frac{\Delta E_{iR} E_{R(t)}}{E_{iR(t)} E_R} = \frac{\Delta E_{iR} / E_{iR(t)}}{\Delta E_R / E_{R(t)}}$$

$$\text{Growth Ratio of Reference Areas (RP}_R) = \frac{\Delta E_{iR} / E_{iR(t)}}{\Delta E_R / E_{R(t)}} \quad (2)$$

- b) Growth Ratio of Study Areas (RPS). RPS is the ratio of growth rate activity i region with growth rate activity i reference region.

$$D_{ij} = \left[\frac{\Delta E_{ij}}{E_{ij(t)}} - \frac{\Delta E_{iR}}{E_{iR(t)}} \right] E_{ij(t)}$$

$$D_{ij} = \Delta E_{ij} - \frac{\Delta E_{iR} E_{j(t)}}{E_{iR(t)}}$$

$$D_{ij} = \left[\frac{\Delta E_{ij} E_{iR(t)}}{E_{iR} E_{ij(t)}} - 1 \right] \frac{\Delta E_{iR} E_{ij(t)}}{E_{iR(t)}}$$

$$\frac{E_{iR(t)} D_{ij}}{\Delta E_{iR} E_{ij(t)}} + 1 = \frac{\Delta E_{iR} E_{ij(t)}}{E_{iR} E_{ij(t)}} = \frac{\Delta E_{ij} / E_{ij(t)}}{\Delta E_{iR} / E_{iR(t)}}$$

$$\text{Growth Ratio of Reference Areas (RPs)} = \frac{\Delta E_{ij} / E_{ij(t)}}{\Delta E_{iR} / E_{iR(t)}}$$

(3)

3. Result and Discussion

The study was conducted for 40 industrial sectors contained in Bandung city and West Java Province. Bandung city is declared as study area and West Java as reference area. The analysis is based on the input-output table of Bandung City. Furthermore each sector is classified based on the value of growth ratio of the study area and reference area as the basis for comparison analysis of industry sector performance in Bandung city to reference region. The full results are shown in Table 2 and Figure 1.

Table 2: Value of Growth Ratio RP_R and RP_S of Bandung

Code	Industry/Sector	RP_R		RP_S		Classification
		Value	Sign	Value	Sign	
22	Trading	0.120	+	0.360	+	1
7	Textile, Apparel, Leather and footwear industries	0.141	+	0.210	+	1
17	Other Processing Industry	0.157	+	0.061	+	1
6	Food, Beverage and Tobacco Industry	0.095	+	0.057	+	1
26	Road Transportation Services	0.052	+	0.045	+	1
20	Construction	0.044	+	0.037	+	1
24	Restaurant	0.015	+	0.031	+	1
29	Communication Services	0.008	+	0.025	+	1
18	Electricity	0.022	+	0.017	+	1
27	Air Transport Service	0.006	+	0.017	+	1
40	Personal and Household Services, other services	0.020	+	0.017	+	1
1	Food Crops	0.073	+	0.012	+	1

32	Real Estate and Business Rental	0.005	+	0.011	+	1
9	Paper and Paper Industry	0.004	+	0.008	+	1
14	Manufacture of Plastic Goods except Furniture	0.009	+	0.008	+	1
2	Livestock, Poultry, and the results	0.015	+	0.007	+	1
33	General Government Services	0.021	+	0.006	+	1
13	Rubber industry and rubber goods	0.008	+	0.003	+	1
36	Private Education Services	0.005	+	0.003	+	1
5	Mine Goods	0.016	+	0.002	+	1
11	Oil Refining Industry	0.037	+	0.002	+	1
3	Fisheries and Other Fishery Products	0.009	+	0.001	+	1
4	Other Agricultural Products	0.008	+	0.001	+	1
19	Clean water	0.000	+	0.001	+	1
25	Railway Transport Service	0.001	+	0.000	+	1
34	Government Education Services	0.009	+	0.000	+	1
39	Recreation, Culture and Sports Services	0.000	+	0.000	+	1
8	Wood, Bamboo, Rattan and Furniture Industry	0.006	+	- 0.030	-	2
10	Printing and Publishing Industry	0.000	+	- 0.004	-	2
12	Chemical Industry and Chemical Goods	0.038	+	- 0.001	-	2
15	Manufacture of non-metal goods	0.006	+	- 0.001	-	2
21	Motor vehicle industry, car body and equipment	0.093	+	- 0.006	-	2

23	Hotel	0.003	+	- 0.061	-	2
28	Transport Support Services	0.001	+	- 0.001	-	2
30	Bank and Financial Institutions	0.010	+	- 0.012	-	2
31	Company Services	0.003	+	- 0.001	-	2

Table 2 (continued)

<i>Cod e</i>	<i>Industry/Sector</i>	<i>RP_R</i>		<i>RP_S</i>		<i>Classificati on</i>
		<i>Valu e</i>	<i>Sig n</i>	<i>Valu e</i>	<i>Sig n</i>	
35	Government Health Services	0.005	+	- 0.002	-	2
37	Private Health Services	0.004	+	- 0.002	-	2
38	Other Private Social Services	0.000	+	- 0.002	-	2
16	Basic Metal Industry	- 0.071	-	- 0.001	-	4

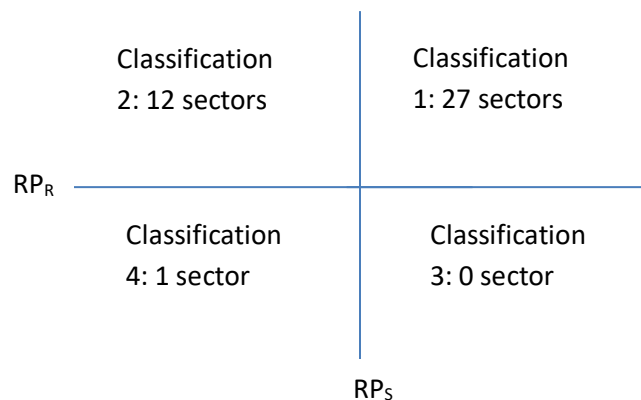


Figure 1: Classification of RP_R and RP_S of Bandung City

In the city of Bandung as many as 27 industrial sectors classified into category 1, meaning that the output growth of these sectors stand out in the city of Bandung and in the province of West Java. This indicates that 67.5% of industries in Bandung City are able to compete in Bandung city and West Java, even higher than the provincial level. This is in line with Yanti's (2013) research, where 5 sectors of the 27 sectors in classification 1, have forward linkages and backward linkages above the average, ie Trade industry (other commodity trading industry and agricultural trade industry), Services Road transport, Personal & household services, other services, Air transport services, and Electricity. Where the highest is the other commodity trading sectors. The sector will increase output by 40.19 rupiah if final demand across sectors increases by 1 rupiah, and if the sector increases the demand for 1 rupiah then it will push the output of all sectors to increase by 2.74 rupiah. In addition, based on research Yanti (2013), 27 sectors including the leading sector in the city of Bandung, because it has a composite index value above the average, where the most superior sector is the industry Trade (other commodity trading industry), the sector has forward linkages Highest of 17.67 and share of GRDP by 35%.

12 industry sectors in Bandung are unable to compete with other industries in the region, but are able to compete with similar industries at the provincial level, in other words 30% of the industry output growth is higher than similar industries at the provincial level but unable to compete with other industries In the city of Bandung. These sectors are: Wood, Bamboo, Rattan and Furniture Industry; Printing and Publishing Industry; Chemical and Chemical Goods Industries; Manufacture of non-metal goods; Motor vehicle industry, its caroseries, and its equipment; Hotel; Transport Support Services; Bank's and Financial Institutions; Company Services; Government Health Services; Private Health Services; Other Private Social Services. This is supported by research Yanti (2013) where the sectors are not among the leading industries of Bandung. 5 of the 12 industry sectors are weak sectors, because they have low backward and forward linkages. The six sectors are: Non-metallic mining industry; Hotel; Banks and Financial Institutions; Government Health Services; Other Private Social Services (Yanti, 2013). Metal industry into classification 4, where growth is not prominent both at the provincial level and in the city of Bandung. In line with the results of the Yanti (2013) study, the metal industry composite index is well below the industry-wide average in Bandung city. There is no one sector in Bandung city that entered into classification 3, which is prominent in the city but weak at the provincial level.

In general, trade and services industry in Bandung City, can compete at city and provincial level. One cause is the city of Bandung as one of the main tourist destinations in West Java. In addition Bandung as the center of government, economic center, trade center in West Java, so the service sector and trade growing rapidly in the city of Bandung. The abundance of heritage sites, educational tours, shopping and culinary tours, recreation and entertainment, as well as other tours will have an impact on the increasing needs of goods and services. So worthy of Bandung other than dubbed the city of services and tourism as well as trade city. With regard to it the Government of Bandung should always maintain and improve facilities and services to the community and tourists, as well as improve the skills of the community for the service sector and trade continues to grow.

Still weak industry produced by natural resources, due to limited natural resources in the city of Bandung. Of 1400 hectares of land in the city of Bandung, every year there is a reduction, switching functions from rice fields into offices and housing. The government has a way to overcome this, among others, to buy existing fields, so as not to switch functions. Bandung City Government should involve the community to conduct cultivation of agriculture that does not require extensive land, one of the methods of hydroponic cultivation.

4. Conclusion

The output growth of 40 industrial sectors in Bandung City is 67.5% able to compete with other industries in Bandung, even the growth is higher than some other cities at the provincial level. As much as 30% growth is lower than similar industries at the provincial level but not able to compete with other industries in the city of Bandung. As much as 2.5% of industrial sector, its growth is higher both in Bandung city level and at provincial level. Although there are many industry sectors that can compete with other industry sectors in Bandung, or with similar industries in West Java, but there are some industries that have not optimal performance, therefore the city of Bandung should implement the appropriate planning and policy, for the entire industry In the city of Bandung increased its growth and in turn will improve the welfare of the community.

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