

**Determination of Leading Sector Sukoharjo Regency:
*Location Quotient and Shift Share Esteban Marquillas Approach***

Muhammad Raqib¹, Mohammad Rofiuddin²

¹Department of *Da'wah* Management, Faculty of *Ushuludin and Da'wah*, IAIN Surakarta

¹Email: raqib.muhammad@gmail.com

² Faculty of Islamic Economy and Business, IAIN Salatiga

²Email: mohammad.rofiuddin@iainsalatiga.ac.id

Abstract : The purpose of understanding the development of economic sector in 2012-2016 in order to develop and manage the potential of the region in Sukoharjo. The method used to analyze the leading sectors in this research is *location quotient and shiftshare analysis* of Esteban Marquillas. The result of the research shows that there are eleven sectors which are the basic sector ie. Manufacturing sector, Electricity and Gas sector, Large and Retail Trade sector, Automobile and Motorcycle Repair, Transportation and Storage sector, Accommodation and Food Service Activities sector, Information and Communication sector, Financial and Insurance Activities sector, Real Estate Activities sector, Business Activities sector, Human Health and Social Work Activities. Economic sectors are having a competitive advantage as well as specialization namely in the sectors of the Manufacturing; Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles; Transportation and Storage; Information and Communication; Real Estate Activities; and Human Health and Social Work Activities. Sectors are having the highest three positive values are the sectors of Manufacturing; Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles; and Information and Communication.

Keywords : *Development, Growth, Shift Share Esteban Marquillas*

1. Introduction

Growth and regional economic development becomes a very central matter to the welfare of society. In the past, land and natural resources are believed to be the only engine of economic growth and wellbeing even without a modern economy. However, in the present century, the main concern began to shift from the effort of controlling limited resources through force and conquest to the creation of possible prosperity in a modern economic system. It is characterized by an

increasing of output in the sectors of the economy.

Economic growth is a benchmark of the economy of a region. High and sustainable economic growth is a major condition or a necessity for the continuity of economic development and welfare improvement. In economic development in the region, the purpose of development itself is not far different from the national development goals. However, the development process in the region is much more specific (Tambunan, 2001).

Meanwhile, according to Arsyad (2010), regional economic development represents a process whereby local government and communities manage existing resources and form a partnership pattern between local government and the private sector to create new job and stimulates the development of economic activity within the region.

The successful of a regional economic development can be measured by several indicators commonly used as a measuring device. The commonly used indicator is the gross regional domestic product (GDP) which can be a general indicator of economic performance as a measure of the progress of a region. Other indicators are growth rates, per capita income and shifts or changes in economic structure (Sjafrizal, 2008).

Along with the prevailing of regional autonomy, each region must be able to explore the potential possessed by each region. In addition, the region should also

be able to make appropriate policies for regional development objectives to be achieved. The most important policy is the policy in determining the economic sector to be built to improve the gross regional domestic product of the region. Furthermore, regional economic development is emphasized on sectors are having a large contribution to gross regional domestic product.

Economic development in Sukoharjo Regency is emphasized on the development of sectors are having a great contribution in preparing gross regional domestic changes. Gross regional domestic product of Sukoharjo Regency is limited in seventeen economic sectors. Each economic sector has a significant contribution in determining and varying and in each year, its contribution is different. The contribution of economic sector of Central Java province as in Table 1.

Table 1. The Contribution of Gross Regional Domestic Product of Central Java Province at 2010 Constant Market Prices, 2012-2016

No	Sector	2012	2013	2014	2015	2016
1	Agriculture, Forestry and Fishing	15.41	14.98	14.09	14.11	13.69
2	Mining and Quarrying	1.99	2.01	2.03	1.99	2.24
3	Manufacturing	34.94	35.05	35.50	35.27	34.88
4	Electricity and Gas	0.11	0.11	0.11	0.11	0.11
5	Water supply, Sewerage, Waste Management and Remediation Activities	0.08	0.08	0.07	0.07	0.07
6	Construction	10.13	10.11	10.02	10.08	10.23
7	Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles	14.62	14.56	14.50	14.29	14.27
8	Transportation and Storage	3.01	3.13	3.25	3.32	3.37
9	Accommodation and Food Service Activities	3.02	3.00	3.07	3.11	3.14
10	Information and Communication	3.57	3.67	3.94	4.09	4.21
11	Financial and Insurance Activities	2.69	2.66	2.63	2.69	2.80
12	Real Estate Activities	1.73	1.77	1.80	1.84	1.86
13	Business Activities	0.30	0.32	0.33	0.34	0.36
14	Public Administration and Defence; Compulsory	2.95	2.88	2.76	2.75	2.67

Social Security						
15	Education	3.29	3.43	3.56	3.63	3.72
16	Human Health and Social Work Activities	0.72	0.73	0.77	0.78	0.82
17	Other Services Activities	1.45	1.51	1.56	1.52	1.57

Source: Statistics Indonesia, 2017

Table 1 shows the sectors are having a great contribution in the aggregate of Manufacturing sector consistently of its contribution is over than 24 percent, although this sector is very dynamic but in 2016 seen decreased. In addition, the Agriculture, Forestry and Fishing sector is over than 13 percent in overall contribution, and Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles sectors also has contribution are over than 14 percent. The sectors which are its contribution continues to increase are Transportation and Storage; Information and Communications; Real

Estate; Activities; Business Activities; Education; Human Health and Social Work Activities. The sectors are having the greatest and most consistent contribution namely Manufacturing; Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles; and Construction.

Similar to Central Java province, at the Regency level the structure of gross regional domestic product is not far different when it is seen from the sector that dominates the highest contribution value. The contribution of economic sector of Sukoharjo Regency as shown in Table 2.

**Table 2. Gross Regional Domestic Product of Sukoharjo Regency at 2010
Constant Market Prices, 2012-2016**

No	Sector	2012	2013	2014	2015	2016
1	Agriculture, Forestry and Fishing	10.27	9.86	9.02	9.14	8.55
2	Mining and Quarrying	0.46	0.44	0.44	0.43	0.41
3	Manufacturing	38.16	38.92	39.35	38.34	38.32
4	Electricity and Gas	0.15	0.15	0.15	0.13	0.13
5	Water supply, Sewerage, Waste Management and Remediation Activities	0.04	0.04	0.04	0.04	0.04
6	Construction	6.40	6.32	6.19	6.32	6.45
7	Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles	19.36	18.87	18.77	18.75	18.71
8	Transportation and Storage	3.17	3.29	3.40	3.51	3.59
9	Accommodation and Food Service Activities	3.70	3.63	3.67	3.71	3.75
10	Information and Communication	4.20	4.34	4.86	5.26	5.45
11	Financial and Insurance Activities	3.70	3.59	3.43	3.53	3.66
12	Real Estate Activities	2.30	2.35	2.37	2.42	2.47
13	Business Activities	0.32	0.35	0.36	0.37	0.38
14	Public Administration and Defence; Compulsory Social Security	2.48	2.39	2.26	2.25	2.21
15	Education	3.16	3.27	3.41	3.50	3.57
16	Human Health and Social Work Activities	0.78	0.79	0.85	0.89	0.90

17	Other Services Activities	1.35	1.40	1.44	1.41	1.41
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Source: Statistics Indonesia, 2017

Table 2 shows that the sector has a great contribution in aggregate namely the Manufacturing sector, which is consistently of its contribution is over than 38 percent. Although this sector is very dynamic, but in the last two years, in 2015 and 2016 has decreased in the value of contribution. As for the continued increase are Transportation and Storage; Information and Communication; Real Estate Activities; Company Services; Education; Human Health and Social Work Activities. The sector has greatest contribution and most consistent is Manufacturing.

Sukoharjo Regency, which is one of the regencies in Central Java which has superior and reliable sectors not only at the provincial level, but also at the national level. One of the sectors can be seen from its contribution is Agriculture, Forestry and Fishing sector, Manufacturing; and Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles. Meanwhile, if seen from its contribution in Central Java, the agricultural sector has a major contribution, but at the level of three major leading sectors. Of course, in the development of more sectors that have the potential or leading sector will give more impact on regional economic development, so there is a need for good management to manage the existing potential.

Based on the above economic potential differences, it is necessary to study the potential economic sectors grown in Sukoharjo Regency with the aim of understanding the development of economic sector in 2012-2016 in order to the development of Sukoharjo Regency.

2. Literature Review

According to Kuncoro (2000) economic development is a multidimensional process, due to economic development is not only a change in the economic structure of a country as indicated by the declining role of the agricultural sector and the increasing role of the industrial sector. The development paradigm, over the last few decades continues to experience shift and fundamental changes. Various paradigm shifts due to distortions of "failures (errors)" in applying the existing development models are as follows:

1. The shift from the situation must choose between growth, equality and sustainability as non-trade-off options to the necessity of achieving the goals of development in a "balanced".
2. The tendency of this approach tends to see the achievement of macro-measured development objectives into regional and local approaches.

Changes in economic structure are defined as a series of changes that are interconnected with one another in the composition of demand, foreign trade, production and use of production factors such as labor and capital needed to support the process of development and sustainable of economic growth (Kuznets in Kamaludin, 1998). Furthermore, regional economic development is defined as a process whereby local government and communities manage resources available and establish a partnership pattern between local government and the private sector to create new jobs and stimulate the development of economic activity within the region (Arsyad, 1999). In addition, regional economic development can also be

defined as a process that includes the establishment of new institutions, the development of alternative industries, the improvement of existing manpower capacity to produce better products and services, identification of new markets, knowledge, and development of new companies.

The Pattern of Regional Economic Development

Differences in local conditions bring implications that the applied style of development is different. The mere imitation of the pattern of wisdom has been applied and succeeded in an area, not necessarily provide the same benefits for other regions. If it will build an area, the policy should be in accordance with the conditions of the region concerned. Therefore, in-depth research on the situation of each region must be carried out to obtain data and information useful for determining the regional development planning concerned.

Planning of Regional Economic Development

Local economic development planning is commonly considered as planning to improve the use of public resources available in that region and to improve the capacity of the private sector to create the value of private resources responsibly (Arsyad, 1999). Efficient economic development requires a well-balanced planning in which the use of public resources, the private sector, small entrepreneurs, cooperatives, large entrepreneurs, and social organizations must have a role in the planning process. Through regional economic development planning, a region is considered on the whole as an economic unit in which there

are various elements that interact with each other.

Economic Base Theory

This economic base theory states that the main determinant of economic growth of a region is directly related to the demand for goods and services from outside the region. The growth of industries that use local resources, including labor and raw materials for export, will generate local wealth and creation of job opportunities (*job creation*). This model is useful for determining the balance between the types of industries and sectors needed by the society to develop economic stability (Arsyad, 1999).

Comparative Advantage and Competitive Advantage of a Region

Comparative advantage is only limited to the level of comparison that this product has advantages over other products. The meaning of "advantages" itself is not necessarily related to what the user needs of the product and also the price level. A new product is said to have a competitive advantage, if the elements of the advantages of a product can attract and manipulate the interests and needs of customers or users. The impact will be obvious against the level of sales (Sentana, 2006).

Competitive advantage will result in increased profit margin if the value chain concept can be applied in every step and element of 0 production from production planning to product in the middle of the market. Similarly, the functions that support it (Porter in Sentana, 2006). According to the theory of comparative advantage (*The Comparative Advantage*, a country will import if its comparative advantage is low

and will export if its comparative advantage is high (Ricardo, in Yasin and Elhicawati, 2007). Comparative advantage of the commodity of the country or a region is that commodity is more superior relatively to other commodities in its region (Tarigan, 2005).

Michael Porter (in Yasin and Elhicawati, 2007), *Competitive Advantage* of the country can be sourced from the following points.

1. The superiority (advantage) of a country is due to has factors of production,
2. The superiority is due to the large number of demands. The demand comes from domestic as well as demand from abroad. The large number of demands will encourage company or industrial sectors to increase their quantity of production.

3. The superiority is due to interrelationship between related industries.
4. The superiority of companies in a country due to the country is able to compete and produce efficiently.

3. Research Method

Research method to analyze sectors of economic and change of economic structure in this research using two approaches. First by using *location question* (LQ). *Location Quotient* (LQ) is a simpler economic development manner with all its advantages and weaknesses. The LQ technique is one of the most common approaches used in the economic base model as a first step to understand the sector of activity that becomes driving growth. The formula of *Location Quotient* (LQ) (Tarigan, 2005).

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where Y_{ij} is the added value of sector i in region j . The result of this coefficient calculation will be about one with the following understanding. If $LQ_{ij} > 1$ means the sector is the base sector and vice versa if $LQ_{ij} < 1$ then the sector is not a base and only as a supporting sector. In detail the results of LQ calculation yield three criteria that is:

$LQ > 1$: meaning that the sector becomes the basis or a source of growth. Sector/ commodity has a comparative advantage; its production not only can be meet the needs in the region concerned but also can be exported out of the region.

$LQ = 1$: meaning that the sector is classified as non-base, has no comparative advantage. Its

production is just sufficient to meet the needs of its own region and cannot be able to be exported.

$LQ < 1$: meaning that the sector includes of non-basis. Production of sectors/ commodities in a region cannot meet its own needs so need of supply or imported from outside.

Secondly, in order to analyze the leading sectors and changes in economic structure, *Shift Share* analysis device of Esteban Marquillas were used. Esteban Marquillas modified to the classical *shiftshare* analysis technique by redefining the position of competitive advantage as the third component of the classical *shift share* technique and creating the fourth *shiftshare* component of the allocation

effect (A_{ij}). The results of the modification of Esteban Marquillas to the classical *Shift Share* analysis can be formulated as follows (Hermanto, 2000).

$$D_{ij} = N_{ij} + M_{ij} + C'_{ij} + A_{ij}$$

Note:

D_{ij} : Changes of variable of gross regional income i of a region

N_{ij} : Componen of national growth sector i in region j

M_{ij} : Industry Mix of sector i in region j

C'_{ij} : Competitive advantage of sector i in region j

A'_{ij} : Measurement of advantage and disadvantage

Redefining of the third component of competitive advantage to be given C_{ij} notation is changed to C'_{ij} . C'_{ij} measures competitive advantage or disadvantage competitive in sector i in region j .

$$C'_{ij} = E'_{ij} (r_{ij} - r_{in})$$

Note:

C'_{ij} : gauge of advantage and disadvantage

E'_{ij} : job opportunities of sector i in region j (*homothetic employment*)

R_{ij} : rate of growth of sector i in region j

R_{in} : rate of growth of sector i in referenced region

The revised shift share equation contains a new element, namely *homothetic employment* in sector i in region j is to be given E'_{ij} notation, which is formulated as follows:

$$E'_{ij} = E_j (E_j : E_n)$$

Note:

E'_{ij} : *homothetic employment* of sector i in region j

In addition to redefining the components of competitive advantage, Esteban Marquillas also created a new component namely the effect of allocation as the fourth shift-share component. The effect of allocations for sectors in a region is formulated as follows:

$$A_{ij} = (E_{ij} - E'_{ij}) (r_{ij} - r_{in})$$

Note:

A_{ij} : Describe the effect of allocation for sector i in region j

$(E_{ij} - E'_{ij})$: Describe the level of specialization of sector i in region j

$(r_{ij} - r_{in})$: Describe the level of competitive advantage of sector i in region j

A_{ij} is part of the influence of traditional competitive advantage that indicates the existence of sector i specialization in region j . The effect of allocation has two possibilities are positive and negative.

4. Result And Discussion

Location Quotient (LQ) Analysis

Regional economies can be divided into two sectors, namely base activities and non-base activities. Base activities are activities that export goods or services to places outside the boundaries of the economics of the society concerned or those that market their goods or services to persons outside the boundaries of the economics of the society concerned. Non-base activities are those activities that provide the goods needed by persons residing within the boundaries of the economics of the society concerned. These activities do not export the goods, so the wide of its scope of production and of its particular market area is local.

The core logic base of *Location Quotien* is due to the base industry produces goods and services for markets in the region as well as outside the region concerned, then out-of-region sales will generate revenue (income) for that region. Furthermore, the presence of revenue flow from outside this region led to an increase in consumption and investment in that region. This will further increase revenue

and create new job opportunities. The increase in revenues should not only increase demand for base industries, but also increase demand for non-base (local) industries. This increase in demand will encourage increasing of investment in the industry concerned and other industries. The results of calculation of *Location Quotient* Sukoharjo Regency is as follows.

Table 3. Recapitulation of calculation of *Location Quotient* Result of Sukoharjo Regency

No	Sector	2012	2013	2014	2015	2016	Average
1	Agriculture, Forestry and Fishing	0.67	0.66	0.64	0.65	0.62	0.65
2	Mining and Quarrying	0.23	0.22	0.22	0.21	0.18	0.21
3	Manufacturing	1.09	1.11	1.11	1.09	1.10	1.10
4	Electricity and Gas	1.34	1.36	1.28	1.21	1.18	1.28
5	Water supply, Sewerage, Waste Management and Remediation Activities	0.53	0.53	0.53	0.53	0.55	0.53
6	Construction	0.63	0.62	0.62	0.63	0.63	0.63
7	Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles	1.32	1.30	1.29	1.31	1.31	1.31
8	Transportation and Storage	1.05	1.05	1.05	1.06	1.07	1.05
9	Accommodation and Food Service Activities	1.23	1.21	1.20	1.20	1.19	1.20
10	Information and Communication	1.18	1.18	1.23	1.29	1.29	1.23
11	Financial and Insurance Activities	1.38	1.35	1.30	1.31	1.30	1.33
12	Real Estate Activities	1.33	1.33	1.32	1.32	1.33	1.33
13	Business Activities	1.08	1.08	1.08	1.08	1.06	1.07
14	Public Administration and Defence; Compulsory Social Security	0.84	0.83	0.82	0.82	0.83	0.83
15	Education	0.96	0.95	0.96	0.96	0.96	0.96
16	Human Health and Social Work Activities	1.09	1.08	1.10	1.13	1.10	1.10
17	Other services Activities	0.93	0.93	0.93	0.93	0.90	0.92

Based on Table 3, there are eleven sectors, which are the basic sector namely Manufacturing sector (average is 1.10), Electricity and Gas sector (average is 1.28), Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles (average is 1.31), Transportation and Storage sector (average is 1.05), Supply of Accommodation and Food Service Activities sector (average is 1.20),

Information and Communication sector (average is 1.23), Financial and Insurance Activities sector (average is 1.33), Real Estate Activities sector (average is 1.33), Company Services sector (average is 1.07), Human Health and Social Work Activities (average is 1.10), with the value of LQ more than 1, meaning that the eleven sectors become the basis or become the source of growth, has a comparative

advantage, and the results do not only meet the needs in Sukoharjo Regency but also can be exported out of the region. The rest are non-basis sectors covering the sectors of Agriculture, Forestry and Fishing (average is 0.65), Mining and Quarrying sector (average is 0.21), Water Supply sector, Refuse Management, Waste and Recycling (average is 0.53), Construction sector (average is 0.63), Public Administration and Defence; Compulsory Social Security sector (average is 0.83), Education (average is 0.96), and other Services Activities sector (average is 0.92).

Shift Share Marquillas Analysis

Economic development in the present era also conform modern development and globalization without eliminating *local wisdom* in the region in particular. It is marked with regional autonomy in

Indonesia. Of course, it can be separated from the national economic development that will also affect changes in economic development in the region. So it needs for analysis related to changes in development and/or growth of a region.

Shift share analysis divides growth as a variable (D) of change in a region over a certain period of time into an influence of national growth (N), industry mix (M), and competitive advantage (C). Esteban Marquillas carried out modification to the classical *Shift-share* analysis technique by redefining the position of competitive advantage as the third component and creating the fourth *shift-share* component namely the effect of allocation (A_{ij}). The results of *shift-share* analysis Esteban Marquillas as follows:

Table 4. Results of *Shift Share Analysis* Esteban Marquillas Sukoharjo Regency, 2012-2016

No	Sector	N _{ij}	M _{ij}	C' _{ij}	A _{ij}	D _{ij}
1	Agriculture, Forestry and Fishing	430.46	-258.76	-153.65	51.29	69.34
2	Mining and Quarrying	19.11	13.12	-96.82	74.62	10.03
3	Manufacturing	1600.07	-14.92	151.52	13.98	1750.66
4	Electricity and Gas	6.12	1.14	-2.80	-0.96	3.50
5	Water supply, Sewerage, Waste Management and Remediation Activities	1.77	-1.17	0.87	-0.41	1.06
6	Construction	268.29	13.92	26.99	-9.94	299.27
7	Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles	811.58	-104.67	12.33	4.00	723.24
8	Transportation and Storage	132.81	84.13	21.73	1.13	239.80
9	Accommodation and Food Service Activities	155.27	33.39	-10.20	-2.31	176.14
10	Information and Communication	176.19	168.82	109.37	19.31	473.68
11	Financial and Insurance Activities	155.12	35.86	-24.89	-9.36	156.75
12	Real Estate Activities	96.61	41.32	3.35	1.12	142.40
13	Business Activities	13.61	13.36	-0.23	-0.02	26.72
14	Public Administration and Defence; Compulsory Social Security	104.10	-51.64	-2.61	0.41	50.26
15	Education	132.61	91.74	10.73	-0.42	234.65
16	Human Health and Social Work Activities	32.87	24.25	4.17	0.39	61.67
17	Other Services Activities	56.42	24.71	-6.36	0.48	75.25

Effect of Province Growth (N_{ij}) in Sukoharjo Regency

The result of the analysis in Table 4, showing the growth value of the province (N_{ij}) consistently affect the growth of Sukoharjo regency. All sectors have positive contribution to the regional domestic product of Sukoharjo Regency. From the data indicates that the contribution of provincial growth to the highest growth area in the sector of Manufacturing; Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles; and Agriculture, Forestry and Fishing. This shows that the three sectors become the dominant direction of development policy in Sukoharjo Regency. However, other sectors also contribute such as the Mining and Quarrying sector; Electricity and Gas Sector; Water Supply, Refuse Management, Waste and Recycling sector; Construction sector; Transportation and Storage sector; the Accommodation and Food Service Activities Sector; Information and Communication sector; the Financial and Insurance Activities sector; Real Estate Activities sector; Business Activities sector; the Public Administration and Defence; Compulsory Social Security Sector; Education sector; Human Health and Social Work Activities sector; other services activities sector. This result identifies that positively affect the change of economic growth in Sukoharjo Regency. The higher growth of the province will affect the higher value of changes in economic growth.

Industry Mix (M_{ij}) of Sukoharjo Regency

A *proportional shift* is indicating the relative change in performance of a sector

in a particular region of the same sector in the province reference. This measurement allows us to know whether the regional economy is concentrated to the industry that growing faster than the referenced economy. The results of the analysis show that the effect of sector growth is due to the industry mix in sectors in Sukoharjo Regency. The highest of three sectors that have the industry mix are the sectors of Transportation and Storage, Education, Information and Communication. The three sectors are having the highest negative mix value are on the sector Agriculture, Forestry and Fishing; Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles; Administration of Government, Defense and Mandatory Social Security. These results indicate that the sectors are having positive values will have a positive effect on the change of economic growth in Sukoharjo Regency, while the negative ones also negatively affect the economic growth in Sukoharjo Regency.

Competitive Advantage (C'_{ij}) of Sukoharjo Regency

The influence of competitive advantage explains the competition level of a particular activity/sector compared to the total of sector growth nationally. This component measures changes in an industry in a region due to differences between industrial growth in the area and the growth of the industry nationally. Positive value of *Differential Shifts* indicates that the activities of the sector are competitive. The results of the analysis show that three sectors of the economy with competitive advantage of high competitive are in the sector Construction;

Information and Communication; Manufacturing. While the three sectors that do not have dominant advantages namely the sector of Agriculture, Forestry and Fishing; Mining and Quarrying; Financial and Insurance Activities. Sectors are having positive values are identified as having competitive advantage and positively affect the change of economic growth in Sukoharjo Regency, while the negative ones have a negative contribution to the change of economic growth in Sukoharjo Regency.

The Effect of Allocation (A_{ij}) of Sukoharjo Regency

Analysis of allocation effect (A_{ij}) has two possibilities that are positive and negative which indicate the level of specialization and competitive advantage of economic sectors in a region. The results in Table 4 show the effect of allocations on

sectors are having the three greatest positive values namely the sector of Information and Communication; Agriculture, Forestry and Fishing; Mining and Quarrying. While the sector with the highest value of three negative of the effect of allocation includes the sectors of Construction; Financial and Insurance Activities; Accommodation and Food Service Activities.

Result of analysis of allocation effect of the economic sector of Sukoharjo Regency in 2012-2016 economic sector is having competitive advantage as well as specialization namely in the sectors of Manufacturing; Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles; Transportation and Storage; Information and Communication; Real Estate Activities; and Human Health and Social Work Activities. While the accumulated allocation effect as in Table 5.

Table 5. Summary of Accumulated Allocation Effect (A_{ij}) of Sukoharjo Regency

No	Sector	A_{ij}	$(E_{ij}-E'_{ij})$	$(r_{ij} \text{ in } r)$	Note
1	Agriculture, Forestry and Fishing	51.29	-943.54	-5.44%	No Spesialization No Competitive Advantage
2	Mining and Quarrying	74.62	-281.08	-26.55%	No Spesialization No Competitive Advantage
3	Manufacturing	13.98	591.40	2.36%	Spesialization in place Competitive Advantage in place
4	Electricity and Gas	-0.96	6.85	-14.05%	Spesialization in place No Competitive Advantage
5	Water supply, Sewerage, Waste Management and Remediation Activities	-0.41	-6.81	6.00%	No Spesialization Competitive Advantage in place
6	Construction	-9.94	-684.46	1.45%	No Spesialization Competitive Advantage in place
7	Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles	4.00	869.03	0.46%	Spesialization in place Competitive Advantage in place
8	Transportation and Storage	1.13	28.65	3.93%	Spesialization in place Competitive Advantage in place
9	Accommodation and Food Service Activities	-2.31	125.49	-1.84%	Spesialization in place No Competitive Advantage
10	Information and Communication	19.31	115.66	16.70%	Spesialization in place Competitive Advantage in place
11	Financial and Insurance Activities	-9.36	185.40	-5.05%	Spesialization in place No Competitive Advantage

12	Real Estate Activities	1.12	105.96	1.06%	Spesialization in place	Competitive Advantace in place
13	Business Activities	-0.02	4.18	-0.42%	Spesialization in place	No Competitive Advantage
14	Public Administration and Defense; Compulsory Social Security	0.41	-85.16	-0.48%	No Spesialization	No Competitive Advantage
15	Education	-0.42	-23.79	1.78%	No Spesialization	Competitive Advantace in place
16	Human Health and Social Work Activities	0.39	12.19	3.17%	Spesialization in place	Competitive Advantace in place
17	Other Services Activities	0.48	-19.97	-2.38%	No Spesialization	No Competitive Advantage

The sectors which have leading potential are sectors that having competitive advantage but cannot be specialization or otherwise have no competitive advantage but can be a specialization of those sectors namely in the sectors of Electricity and Gas Procurement; Water Supply, Refuse Management, Waste and Recycling; Construction; Accommodation and Food Service Activities; Financial and Insurance Activities; Company Services; and Education. While the sectors do not have competitive advantage and no specialization are in the sectors of Agriculture, Forestry and Fishing; Mining and Quarrying; Administration of Government, Defense and Mandatory Social Security; and other Services Activities.

Performance (D_{ij}) of Sukoharjo Regency

The performance of economic development in Sukoharjo Regency in this sectoral case indicates that the sector has the performance (D_{ij}) with the highest three positive value are in the sectors of Manufacturing; Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles; and Information and Communication. While the sector has a negative performance does not in place.

Those results also show that the performance of each sector in economic development in Sukoharjo Regency is very good in every sector.

5. Conclusion

Based on the results of *location quation* and *Esteban Marquillas* analysis, economic development of Sukoharjo Regency can be concluded that: 1) There are eleven sectors that are base sectors namely Manufacturing sector, Electricity and Gas sector, Large and Retail Trade sector, Automobile and Motorcycle Repairation sector, Transportation and Storage sector, Accommodation and Food Service Activities sector, Information and Communication sector, Financial and Insurance Activities sector, Real Estate Activities sector, Business Activities sector, Human Health and Social Work Activities Services sector. 2) Economic sector with economic sectors are having competitive advantage as well as specialization namely in the sectors of Manufacturing; Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles; Transportation and Storage; Information and Communication; Real Estate Activities; and Human Health and Social Work Activities. 3) Sectors are having performance with the highest value

of positive three are in the sectors Manufacturing; Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles; and Information and Communication.

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