

Analysis of the Role of Leading Sectors on Economic Growth in Ponorogo Regency, East Java Province

Marseto¹, Tituk Diah Widajantie², Riko Setya Wijaya³

^{1,2,3} Development Economics Study Program, Faculty of Economics and Business, UPN Veteran East Java, Indonesia

Abstract

The goal of this study is to identify the sectors that are the leading and non-leading sectors in Ponorogo Regency, the advanced and trailing sectors in Ponorogo Regency, and the base sector's contribution to economic growth in Ponorogo Regency. The research was carried out using a quantitative descriptive approach, where the data collected will be analyzed according to the specified method, then the results of the analysis will be described or interpreted which will then become the results and conclusions in this study to determine the role of the base sector for economic growth in Ponorogo Regency. The data population used in this study is the Gross Regional Domestic Product (GRDP) of Ponorogo Regency. The analytical method in this study uses location quotient (LQ), shift share analysis and classen typology analysis. Based on the results of data processing, analysis and studies conducted, it can be concluded that: Through the results of data processing of 17 sectors in Ponorogo Regency, there are ten leading sectors namely the agricultural sector, the water supply sector, the construction sector, the communication and information sector, the financial services sector, the real estate sector, the government administration sector, the education services sector, the health services sector, and other service sectors. In Ponorogo Regency there are six sectors which are classified as advanced sectors, namely the agricultural sector, the water supply sector, the financial services sector, the education services sector, the health services sector, and other service sectors. However, there are also sectors in the lagging category, namely the mining sector. Of the ten leading sectors out of seventeen sectors in Ponorogo Regency, there are three sectors which are advanced sectors and play a role in sector growth at a higher level, namely, the agricultural sector, the government administration sector, and other service sectors.

Keywords: Leading Sector, Base Sector, Economic Growth

JEL Classification : C10, J24, J64

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Introduction

Indonesia is a country that has abundant resources, both natural and human. This raises good economic potential for developing countries like Indonesia (Ekananda, 2022). However, this needs to be realized through dynamic and sustainable collaboration between the government, the private sector, and the community in order to create the right development plan systems and objectives so that they have an impact on significant economic growth starting from the regional level (Hosseinzadeh, Samadi Foroushani, & Sadraei, 2022). Economic growth is one of the indicators to measure economic conditions in an area. This relates to the progress of

infrastructure, economic activity, and the prosperity of the population in an area (Widarni & Bawono, 2022).

Regional economic growth and development must be adapted to conditions and the availability of existing resources, both natural and human (Holmberg & Sandbrook, 2019). Thus the regional government prioritizes regional development in order to optimize and accelerate development by utilizing existing resources (Saleh, Surya, Annisa Ahmad, & Manda, 2020). Local government can be said to be successful if the Gross Regional Domestic Product (GRDP) of an area according to constant prices and current prices has increased, this is because GRDP is one indicator of the success of regional economic development (Palermo, Bertoldi, Apostolou, Kona, & Rivas, 2020). GRDP shows the condition of the economic sectors in a region which is calculated based on the added value of goods and services due to economic activity (Magdalena & Suhatman, 2020). With known sector conditions, the government needs to determine the sector priority scale to be developed to realize sustainable economic development. In this case, the government needs to carry out a more in-depth analysis to be able to determine the policies and systems that will be used to realize the regional development it wants to achieve by taking into account the problems, wishes and conditions of each region (Chollisni, Syahrani, Shandy, & Anas, 2022).

Ponorogo Regency in 2020 has an area of 1,371.78 km² and a population of 949,318 people (Indraswari, 2022). Judging from the demographic structure, Ponorogo Regency has a young population (0-14 years) of 176,989 residents or 18.64% of the total population, productive age (15-64 years) of 657,084 residents or 69.21% of the total population, while for old age (65+) of 115,245 or 12.13% of the total population. At productive age it is divided into two, namely the labor force (employed and open unemployment) of 71.52% and the non-labor force (schools, managing the household, and others) of 28.48%. Under these conditions it can be said that Ponorogo Regency has the potential to play a role in creating national economic development, especially in East Java Province (Zarkasyi, Kuniawan, & Darma, 2021).

The above shows that there is a promising potential in Ponorogo Regency to realize economic development and has a high probability for the welfare of its people. This is because in 2016 to 2019 GRDP according to constant prices always increases, even though in 2020 it decreases, but the decrease is not lower than the GRDP in the previous two years, namely GRDP in 2018 (Sumarsono, Arti, & Soesilo, 2020). As for economic growth, Ponorogo Regency has a high growth rate. fluctuated but tended to be stable from 2016 to 2019 and experienced a significant decline in 2020 due to unexpected external factors, namely the co-19 pandemic which disrupted the global economy (Nadiah & Farida, 2022). Because of the potential in Ponorogo Regency, the researchers chose this area to see which sectors have the potential to realize regional economic growth and have national competitiveness. In addition, this research was conducted to provide information for local governments to determine policies, strategies and operational systems in planning development in an effort to increase regional economic growth. The goal of this study is to identify the sectors that are the leading and non-leading sectors in Ponorogo Regency, the advanced and trailing sectors in Ponorogo Regency, and the base sector's contribution to economic growth in Ponorogo Regency.

Theoretical basis

Economic growth is a process of improving the economic condition of a region which is dynamic during a predetermined period of time (Charfeddine & Kahia, 2019). The production system that influences total output growth consists of three elements, namely:

- Natural resources in the form of land or land are the initial capital or basis for starting production activities
- Human resources, this relates to the population in a region.
- Capital stock, the more abundant the available capital stock, the greater the level of productivity per capita.

In this case, Adam Smith argues that market potential will reach its maximum level if the community has the authority to improve market conditions through improved regulations and laws and is given the freedom to carry out economic transactions (Graafland & Wells, 2021).

Smith argues that the population growth rate has a positive relationship with wage rates. This is related to the ability and economic needs of individuals, if they get wages above the necessities of life then economic capacity will increase, so that a person's interest in getting married even at a young age will tend to increase, thus the birth rate will increase (Croes, Ridderstaat, Båk, & Zientara, 2021).

Economic Development Theory

Growth, economic development can be said to be successful if the output of economic development can be felt by all levels of society without exception (Kolesnikov, Zernova, Degtyareva, Panko, & Sigidov, 2020). In his theory, David Ricardo classifies the population into three groups, namely:

- Residents of the first class are positioned as beneficiaries of investment returns. Residents in this group usually have a business (entrepreneur) so that he gets benefits from the results of his business.
- Residents of the second group are positioned as energy contributors.
- Residents in this group get benefits in the form of salaries or wages because they work as workers. Wages received fluctuate because it depends on the availability of capital.
- Residents of the third class are in the position of land owners. Residents in this group benefit from residents of the first group because of the land that is leased to them.

Development basically has two main elements, the first is the element of how to generate profits which will later be divided according to needs and priorities, and the second is the human element as the main driver of the economy (Watkins, Qi, Kawakatsu, Pickersgill, Horton, & Jamison, 2020). It can be interpreted that development is a series of processes of changing conditions and quality of society to reach a point where the process can be said to be successful, but in the development process it is necessary to pay attention to the continuation of the process and change so that the process that was built from the beginning can produce dynamic success Regional development (Werdhiastutie, Suhariadi, & Partiwı, 2020).

Comparative Advantage and Competitive Advantage

According to David Ricardo in his theory, comparative advantage will be achieved if a country performs or increases the level of time and cost efficiency in producing goods and services so that the goods produced produce cheaper prices compared to other countries (Michaelides & Papadakis, 2023). With this theory, David Ricardo has several opinions about comparative advantage, namely:

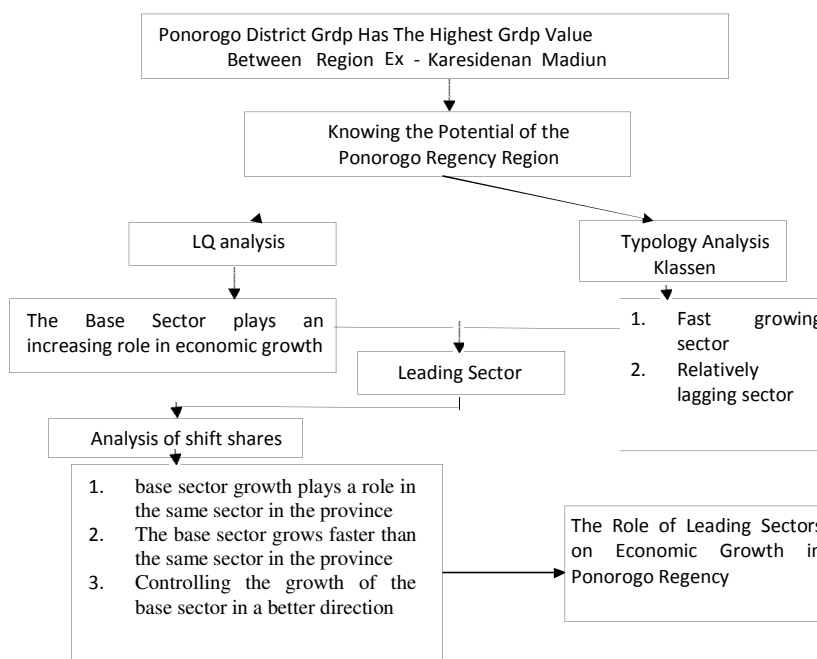
- International trade is only carried out by two countries.
- International trade only involves two products/goods/commodities in trade transactions.
- Price differences in international trade are caused by differences in the level of efficiency possessed by each country.

If the level of efficiency in two countries has the same value for the same products/goods/commodities between the two countries then international trade will not occur. Knowledge and understanding of comparative advantage can be beneficial for a region to increase potential sectors to lead to sector production efficiency changing the structure of the regional economy to prioritize comparative advantage over the production results of available sectors. That way, the sector development process can run faster than market mechanisms which often experience obstacles (Machado & Trigg, 2021).

Competitive advantage is the advantage of a product produced by a company because of the ability to place the right strategy on something so as to create an advantage that is not owned by other companies. So that it triggers a reaction of satisfaction from consumers because they feel benefited from using or buying a product from our company compared to other companies (Malik, 2019). In today's modern era, the competition that arises in trading activities is very high, therefore every company must increase the level of efficiency, especially at the time to gain competitive advantage. Because companies that can produce the same quality products as other companies with a faster time will become superior companies. Therefore companies must carry out technological innovations to assist in the process of production, distribution, promotion, as well as research and development of new products (Ellitan, 2020).

Mindset

The following is the relationship that this research wants to show, which can be seen through the scheme below:



Research Hypothesis

H1: It is suspected that there are leading and non-leading sectors in Ponorogo Regency

H2: It is said that Ponorogo Regency has both developed and underdeveloped sectors.

H3: It is suspected that there is a role for the base sector in economic growth.

Research Method

The research was conducted using a quantitative descriptive approach, to determine the role of the base sector on economic growth in Ponorogo Regency.

Ponorogo Regency economic growth research variable as the dependent variable (Y). The independent variable (X) is a. Gross Regional Domestic Product (GDP), b. Economic Sectors, c. Base Economic Sector, d. Non-Basic Economic Sector

Data collection was obtained from secondary data which is a time series from 2016 to 2020. The data used is the Gross Regional Domestic Product (GRDP) of Ponorogo Regency according to business field at constant prices. and Gross Regional Domestic Product (GRDP) of East Java Province according to business sector at constant prices.

Location Quotient (LQ) analysis method

The location quotient (LQ) analysis method is used to determine the base and non-base sectors owned by an area. This analysis is carried out in order to determine the sector specialization of a region by comparing it to the magnitude of the output value of a sector in an area with the same sector at the national or regional level with a higher position.

Shift Share

According to shift share analysis is used to see the contribution/role of a sector and find out the shift of a sector in an area towards the same sector at a higher regional level.

Tipologi Klassen

The Klassen typology analysis method is used to see a picture of how the condition of the economic sector is in a region. With this analysis we can identify which sectors in an area are sectors included in quadrant 1, quadrant 2, quadrant 3, and quadrant 4.

Table 1. Classification According to Klassen Typology

Quadrant I ($y_i > y$, $r_i > r$) Developed, potential, and sectors have fast growth	Quadrant II ($y_i < y$, $r_i > r$) Advanced sector, potential, however stressed
Quadrant III ($y_i > y$, $r_i < r$) Possibilities for development in some industries	Quadrant IV ($y_i < y$, $r_i < r$) Lagging sectors

Results and Discussion
Research Data Results
Location Quotient

Table 2. Location Quotient Calculation Results Ponorogo Regency

GRDP Sub Sector (2010 Series)	Year					Average LQ	Information
	2016	2017	2018	2019	2020		
Agriculture, Forestry and Fisheries	2,36	2,32	2,39	2,37	2,37	2,36	Base
Mining and excavation	0,43	0,43	0,43	0,44	0,42	0,43	Non Base
Processing industry	0,24	0,24	0,24	0,25	0,25	0,24	Non Base
Procurement of Electricity and Gas	0,28	0,29	0,31	0,33	0,33	0,31	Non Base
Water Procurement, managing waste, recycling waste	0,98	1,00	1,02	1,05	1,02	1,01	Base
Construction	1,00	1,02	1,03	1,05	1,00	1,02	Base
Retail and wholesale business; auto and motorcycle repair	0,96	0,98	0,99	1,01	1,00	0,96	Non Base
Transportation and Warehousing	0,96	0,98	0,99	1,01	1,00	0,99	Non Base
Provision of Accommodation and Food and Drink	0,58	0,60	0,61	0,65	0,67	0,62	Non Base
Information and Communication	1,53	1,56	1,56	1,58	1,52	1,55	Base
Financial Services and Insurance	1,20	1,23	1,24	1,25	1,21	1,23	Base
Real Estate	1,54	1,55	1,58	1,59	1,53	1,56	Base
Business Services	0,57	0,58	0,58	0,59	0,58	0,58	Non Base
Public administration, Defense and mandatory social security	2,40	2,43	2,43	2,42	2,35	2,41	Base
Education Services	3,16	3,26	3,28	3,31	3,22	3,24	Base
Services for health and social interaction	1,20	1,21	1,22	1,23	1,20	1,21	Base
other services	1,43	1,45	1,47	1,51	1,46	1,46	Base

Source: Data processed

It is found from the table above that there are ten basic sectors and seven non-base sectors in Ponorogo Regency in the period 2016-2020. The base sectors where the LQ value > 1 include the agricultural sector,

the water supply sector, the construction sector, the communication and information sector, the financial services sector, real estate sector, government administration sector, education service sector, health service sector, and other service sectors. The sector that has the highest LQ score is the education sector with an average LQ score of 3.24.

For non-base sectors where the LQ value <1 includes the mining sector, the manufacturing sector, the gas procurement sector, the wholesale trade sector, the transportation sector, the food and beverage accommodation sector, and the corporate services sector. The sector that has the lowest LQ value is the manufacturing sector with an LQ value of 0.24.

Table 3. Results of Ponorogo District Shift Share Calculations

GRDP Sub Sector (2010 Series)	PR	>/<	ΔQ_{ij}	PS	DS
Agriculture, Forestry and Fisheries	132429,349	>	37281,452	-105677,6252	10529,72821
Mining and excavation	11397,27259	>	4359,994	409,1282603	-7446,40685
Processing industry	34335,90454	<	53689,998	5729,412846	13624,68061
Procurement of Electricity and Gas	440,5646804	<	459,894	-449,9728088	469,3021284
Water Procurement, Waste Management, Waste and Recycling	471,8242406	<	739,142	172,647208	94,6705515
Construction	44883,66759	<	50710,862	4327,07873	1500,115684
Retail and wholesale business; auto and motorcycle repair	87030,07205	<	102038,086	-7980,320591	22988,33454
Transportation and Warehousing	8416,480639	<	12296,36	-4593,783999	8473,66336
Provision of Accommodation and Food and Drink	14644,34907	<	16123,114	1206,250963	272,5139691
Information and Communication	42468,86494	<	87298,844	46985,43615	-2155,45709
Financial Services and Insurance	15451,71497	<	15501,868	-1132,02509	1182,178117
Real Estate	12944,35843	<	17891,564	4626,939353	320,2662135
Company Services	2179,668133	>	2115,606	-342,6700522	278,6079189
Government Administration, Defense and Compulsory Social Security	26208,1588	>	18175,37	-6769,222934	-1263,56587
Education Services	41125,07584	<	65901,96	17648,01581	7128,868353
Health Services and Social Activities	3869,912541	<	7638,056	3569,123135	199,0203241
other services	10062,76581	>	3929,002	-7788,872739	1655,108927

Source: Data processed

The table above shows the form of a shift in economic elements which is the result of Shift Share data processing in Ponorogo Regency, where there are five sectors that have PR criteria $> \Delta Q_{ij}$ concluding that the sector is an advanced sector that has a role in the development of the same industry at the provincial level. There are also twelve sectors that have a $PR < \Delta Q_{ij}$, thus concluding that these sectors are likely to be sectors that hinder the development of the same industry at the provincial level. Furthermore, there is a proportional value that shows the condition of the development of the sectors in Ponorogo Regency. For a PS value > 0 there are nine sectors, these results show that this sector has good development and is quickly compared to the same sector in other regions. There are also six sectors that have a PS value < 0 which indicates that these sectors have lagging and slow development compared to similar sectors in other regions.

Elements of the differential shift in Ponorogo Regency are fourteen sectors that have a DS value > 0 , which means that these sectors can control sector growth in a better direction so that they are not left behind when compared to the same sectors in other regions. However, there are still three sectors that have a DS value < 0 , which means that these sectors have not been able to increase sector growth so that it is faster than similar sectors in other regions.

Table 4. Results of the Klassen Typology Calculations for Ponorogo Regency

GRDP Sub Sector (2010 Series)	Regency. Ponorogo		Province East Java		Quadrant
	ri	yi	R	Y	
Agriculture, Forestry and Fisheries	0,551149	26,03214	0,308418	11,01023	I
Mining and excavation	1,09461	2,199484	1,402684	5,149617	IV
Processing industry	5,318673	7,292129	3,790858	29,81899	III
Procurement of Electricity and Gas	3,368796	0,090941	-0,14287	0,296282	III
Water Procurement, managing waste, recycling waste	5,41293	0,100721	4,387745	0,10057	I
Construction	3,421498	9,139803	3,348305	9,150815	III
Retail and wholesale business; auto and motorcycle repair	3,539934	17,83744	2,541451	18,13429	III
Transportation and Warehousing	4,35307	1,757006	0,946105	2,790985	III
Provision of Accommodation and Food and Drink	3,091299	2,971427	2,763206	5,203494	III
Information and Communication	6,768873	9,401658	6,91661	6,161492	II
Financial Services and Insurance	2,611607	3,150785	2,309386	2,606378	I
Real Estate	4,328952	2,734981	4,335372	1,78596	II
Company Services	2,76636	0,441035	2,380038	0,764749	III
Government Administration, Defense and Compulsory Social Security	1,652456	5,244688	2,008555	2,205471	II
Education Services	5,025898	8,802369	4,445293	2,758593	I
Health Services and Social Activities	6,713198	0,858048	6,520273	0,71303	I
other services	0,631411	1,945339	0,089663	1,349059	I

Source: Data processed

In the table above the results of categorizing sectors in Ponorogo Regency through calculations using the classen typology method, there are six sectors that fall into quadrant I, namely the agricultural sector, the water supply sector, the financial services sector, the education services

sector, the health services sector, and other service sectors. Furthermore, for the category of quadrant II there are three sectors, namely the information sector, the real estate sector, and the government administration sector. Then the sectors belonging to quadrant III include the manufacturing sector, the electricity supply sector, the construction sector, the wholesale trade sector, the transportation sector, the accommodation provision sector, the corporate services sector. Finally, for the fourth quadrant category, there is only one sector, namely the mining sector.

Hypothesis test

Hypothesis 1: There are sectors which are leading and non-leading sectors in Ponorogo Regency.

It is carried out using the Location Quotient (LQ) method to test the first hypothesis, which produces leading sectors and non-leading sectors in Ponorogo Regency.

There are 10 sectors in the Ponorogo Regency that have an LQ value of more than one and satisfy the requirements to be considered leading sectors, namely:

1. The agricultural sector with an LQ value of $2.36 > 1$, thus, it qualifies to be told as a leading industry in the Ponorogo Regency.
2. The water supply sector has an LQ value of $1.01 > 1$, thus, it qualifies to be told as a leading industry in the Ponorogo Regency.
3. The construction sector with an LQ value of $1.02 > 1$, thus, it qualifies to be told as a leading industry in the Ponorogo Regency.
4. The communication and information sector with an LQ value of $1.55 > 1$, thus, it qualifies to be told as a leading industry in the Ponorogo Regency.
5. The financial services sector with an LQ value of $1.23 > 1$, thus, it qualifies to be told as a leading industry in the Ponorogo Regency.
6. The real estate sector with an LQ value of $1.56 > 1$, thus, it qualifies to be told as a leading industry in the Ponorogo Regency.
7. The government administration sector with an LQ value of $2.41 > 1$, thus, it qualifies to be told as a leading industry in the Ponorogo Regency.
8. The education services sector with an LQ value of $3.24 > 1$, thus, it qualifies to be told as a leading industry in the Ponorogo Regency.
9. The health services sector with an LQ value of $1.21 > 1$, thus, it qualifies to be told as a leading industry in the Ponorogo Regency.
10. Other service sectors with an LQ value of $1.46 > 1$, thus, it qualifies to be told as a leading industry in the Ponorogo Regency.

Hypothesis 2: There are developed and lagging sectors in Ponorogo Regency.

To test the second hypothesis in this study, the Klassen Typology analysis method was used by categorizing the advanced sector in quadrant I and the underdeveloped sector in quadrant IV. So that later you can see which sectors are categorized as advanced and lagging sectors in Ponorogo Regency with the following details:

In Ponorogo Regency there are six sectors which are developed sectors with the categorization of sectors into quadrant I, namely

1. The agricultural sector

2. Water supply sector
3. The financial services sector
4. Education services sector
5. Health services sector
6. Other service sectors

Whereas for sectors that fall into the underdeveloped sector with the sector category into quadrant IV there is only one sector, namely: Mining sector

Hypothesis 3: There is a role for the base sector for economic growth in Ponorogo Regency.

In testing the third hypothesis, two analytical tools are used, namely LQ to determine the base sector and Shift Share to determine the role of the base sector in economic growth in Ponorogo district. In Ponorogo Regency there are 10 basic sectors and the following is the role of these sectors in economic growth in Ponorogo Regency:

1. Agriculture Sector

In the shift share test, this sector has a PR value $> \Delta Q_{ij}$ which is an indication that this sector is an advanced sector that has a role in sector development at the provincial level. Furthermore, the PS value shows < 0 so that sector development tends to be slow compared to other regions. Finally, the DS value > 0 indicates that this sector can control sector growth in a better direction.

2. Water Supply Sector

In the shift share test, this sector has a PR value $< \Delta Q_{ij}$ which is an indication that this sector is likely to be a sector that is an obstacle to sector development at the provincial level. Furthermore, the PS value shows a number > 0 so that the development of the sector can be said to be good and fast compared to other regions. Finally, the DS value > 0 indicates that this sector can control sector growth in a better direction.

3. Construction Sector

In the shift share test, this sector has a PR value $< \Delta Q_{ij}$ which is an indication that this sector is likely to be a sector that is an obstacle to sector development at the provincial level. Furthermore, the PS value shows a number > 0 so that the development of the sector can be said to be good and fast compared to other regions. Finally, the DS value > 0 indicates that this sector can control sector growth in a better direction.

4. Communication and Information Sector

In the shift share test, this sector has a PR value $< \Delta Q_{ij}$ which is an indication that this sector is a sector that is likely to become an obstacle to sector development at the provincial level. Furthermore, the PS value shows a number > 0 so that the development of the sector can be said to be good and fast compared to other regions. Finally, the DS value < 0 indicates that this sector has not been able to control sector growth in a better direction.

5. Financial Services Sector

In the shift share test, this sector has a PR value $< \Delta Q_{ij}$ which is an indication that this sector is a sector that is likely to become an obstacle to sector development at the provincial level. Furthermore, the PS value shows < 0 so that sector development tends to be slow compared to

other regions. Finally, the DS value > 0 indicates that this sector is controlling sector growth in a better direction.

6. Real Estate Sector

In the shift share test, this sector has a PR value $< \Delta Q_{ij}$ which is an indication that this sector is likely to be a sector that is an obstacle to sector development at the provincial level. Furthermore, the PS value shows a number > 0 so that the development of the sector can be said to be good and fast compared to other regions. Finally, the DS value > 0 indicates that this sector can control sector growth in a better direction.

7. Government Administration Sector

In the shift share test, this sector has a PR value $> \Delta Q_{ij}$ which is an indication that this sector is an advanced sector that has a role in sector development at the provincial level. Furthermore, the PS value shows < 0 so that sector development tends to be slow compared to other regions. Finally, the DS value < 0 indicates that this sector has not been able to control sector growth in a better direction.

8. Education Services Sector

In the shift share test, this sector has a PR value $< \Delta Q_{ij}$ which is an indication that this sector is likely to be a sector that is an obstacle to sector development at the provincial level. Furthermore, the PS value shows a number > 0 so that the development of the sector can be said to be good and fast compared to other regions. Finally, the DS value > 0 indicates that this sector can control sector growth in a better direction.

9. Health Services Sector

In the shift share test, this sector has a PR value $< \Delta Q_{ij}$ which is an indication that this sector is likely to be a sector that is an obstacle to sector development at the provincial level. Furthermore, the PS value shows a number > 0 so that the development of the sector can be said to be good and fast compared to other regions. Finally, the DS value > 0 indicates that this sector can control sector growth in a better direction.

10. Other Services Sector

In the shift share test, this sector has a PR value $> \Delta Q_{ij}$ which is an indication that this sector is an advanced sector that has a role in sector development at the provincial level. Furthermore, the PS value shows < 0 so that sector development tends to be slow compared to other regions. Finally, the DS value > 0 indicates that this sector is controlling sector growth in a better direction.

Discussion

Leading and Non-leading Sectors in Ponorogo Regency

The discussion regarding the determination of leading and non-leading sectors in Ponorogo Regency used an analytical tool, namely the Location Quotient (LQ) with the condition that the leading sector $LQ > 1$ and the non-leading sector $LQ < 1$.

Ten of Ponorogo Regency's 17 sectors are leading sectors with an LQ value > 1 , as can be observed from the results of processing the location quotient data in the table, namely the agricultural sector with a worth of 2.36, the water supply sector with a worth of 1.01, the construction sector with a worth of 1, 02, the information and communication sector with a

worth of 1.55, the financial services sector with a worth of 1.23, the real estate sector with a worth of 1.56, the government administration sector with a worth of 2.41, the education services sector with a worth of 3.24, the service sector health with a worth of 1.21, and other service sectors with a worth of 1.46.

Advanced and Underdeveloped Sectors in Ponorogo Regency

The discussion regarding the categorization of developed sectors and lagging sectors in Ponorogo Regency used the Klassen Typology analysis method by entering each sector into levels or quadrants based on the results of calculations and data processing that had been carried out. Quadrant I is a category or level of a sector that has fast growth and progress, quadrant II is a category or level of a sector that has progress but has pressure, quadrant III is a category or level of a sector that is still developing, the last is quadrant IV which is a category or level of a sector left behind.

After processing the data and showing it in the table, out of the 17 sectors, there are six developed sectors, namely the agricultural sector, the water supply sector, the financial services sector, the education services sector, the health services sector, and other service sectors. As for lagging sectors, there is only one sector, namely the mining sector.

The Role of the Base Sector on Economic Growth in Ponorogo Regency

In discussing the role of the base sector for economic growth in Ponorogo Regency, two methods of analysis are used, namely Location Quotient (LQ) to determine the base sector ($LQ > 1$) and Shift Share to determine the role of the sector for economic growth in Ponorogo Regency by looking at the PR value, ΔQ_{ij} , PS, DS. To determine the implementation of the Shift Share results, the following criteria are needed, $PR > \Delta Q_{ij}$, concluding that the sector is an advanced sector that has a role in the development of the same sector at the provincial level, if the PR value $< \Delta Q_{ij}$, then the industry is probably one that prevents the growth of the same industry at the provincial level. For a PS value > 0 it indicates that the sector has good and fast development compared to the same sector in other regions, there is also a PS value < 0 which indicates that the sector has lagging and slow development compared to the same sector in other regions. For a DS value > 0 , it means that the sector can control sector growth in a better direction so that it is not left behind when compared to the same sector in other regions. However, if the DS value < 0 , it means that the sector has not been able to increase sector growth so that it is faster than similar sectors in other regions.

After processing the data and displaying it in tables and tables, there are ten basic sectors and the role of the ten sectors can be explained as follows, the first is the agricultural sector. In the shift share test this sector has a PR value (132429.34) $> \Delta Q_{ij}$ (37281,45) which is an indication that this sector is an advanced sector that has a role in sector development at the provincial level. Furthermore, the PS value of -105677.62 indicates a number < 0 so that sector development tends to be slow compared to other regions. Finally, the DS value (10529.72) > 0 indicates that this sector can control sector growth in a better direction. The second is the water supply sector, this sector has a PR value (471.82) $< \Delta Q_{ij}$ (459.89) which is an indication that this sector is likely to be a sector that is a barrier to sector development at the provincial level.

Furthermore, the PS value shows the number 172.64 > 0 so that the development of the sector can be said to be good and fast compared to other regions. Finally, the DS value (94.67) > 0 indicates that this sector can control sector growth in a better direction. Then there is the construction sector, this sector has a PR value (44883.66) $< \Delta Q_{ij}$ (50710.86) which is an indication that this sector is likely to be a sector that is a barrier to sector development at the provincial level.

Furthermore, the PS value shows the number $4327.07 > 0$ so that the development of the sector can be said to be good and fast compared to other regions. Finally, the DS value $(1500.11) > 0$ indicates that this sector can control sector growth in a better direction. The fourth sector is the communication and information sector which has a PR value $(42468.86) < \Delta Q_{ij} (87298.84)$ which is an indication that this sector is a sector that is likely to be an obstacle to sector development at the provincial level. Furthermore, the PS value shows the number $46985.43 > 0$ so that the development of the sector can be said to be good and fast compared to other regions. Finally, the DS value $(-2155.45) < 0$ indicates that this sector has not been able to control sector growth in a better direction. Then there is the financial services sector, in the shift share test this sector has a PR value $(15451.71) < \Delta Q_{ij} (15501.86)$ which is an indication that this sector is a sector that is likely to be an obstacle to sector development at the provincial level. Furthermore, the PS value shows the number $-1132.02 < 0$ so that sector development tends to be slow compared to other regions. Finally, the DS value $(1182.17) > 0$ indicates that this sector is controlling sector growth in a better direction. Sixth, there is the real estate sector that has a PR value $(12944.35) < \Delta Q_{ij} (17891.56)$ which is an indication that this sector is likely to be a sector that is an obstacle to sector development at the provincial level. Furthermore, the PS value shows the number $4626.93 > 0$ so that the development of the sector can be said to be good and fast compared to other regions. Finally, the DS value $(320.26) > 0$ indicates that this sector can control sector growth in a better direction. Seventh, there is a government administration sector that has a PR value $(26208.15) > \Delta Q_{ij} (18175.37)$ which is an indication that this sector is an advanced sector that has a role in sector development at the provincial level.

Furthermore, the PS value shows $-6769.22 < 0$ so that sector development tends to be slow compared to other regions. Finally, the DS value $(-1263.56) < 0$ indicates that this sector has not been able to control sector growth in a better direction. Furthermore, there is the education services sector, this sector has a PR value $(41125.07) < \Delta Q_{ij} (65901.96)$ which is an indication that this sector is likely to be a sector that is a barrier to sector development at the provincial level. Furthermore, the PS value shows the number $17648.01 > 0$ so that the development of the sector can be said to be good and fast compared to other regions. Finally, the DS value $(7128.86) > 0$ indicates that this sector can control sector growth in a better direction. Furthermore, the health services sector, this sector has a PR value $(3869.91) < \Delta Q_{ij} (7638.05)$ which is an indication that this sector is likely to be a sector that is a barrier to sector development at the provincial level. Furthermore, the PS value shows the number $3569.12 > 0$ so that the development of the sector can be said to be good and fast compared to other regions. Finally, the DS value $(199.02) > 0$ indicates that this sector can control sector growth in a better direction. The last one is the other service sector which has a PR value $(10062.76) > \Delta Q_{ij} (3929.002)$ which is an indication that this sector is an advanced sector that has a role in sector development at the provincial level. Furthermore, the PS value shows $-7788.87 < 0$ so that sector development tends to be slow compared to other regions. Finally, the DS value $(1655.10) > 0$ indicates that this sector is controlling sector growth in a better direction.

Conclusions

Through the results of data processing on 17 sectors in Ponorogo Regency, there are ten leading sectors, namely the agricultural sector, water supply sector, construction sector, communication and information sector, financial services sector, real estate sector, government administration sector, education services sector, health services, and other service sectors. And seven non-leading sectors were also found, including the mining sector, the manufacturing sector, the gas procurement sector, the wholesale trade sector, the transportation sector, the food and beverage

accommodation sector, and the corporate services sector. In Ponorogo Regency there are six sectors which are classified as advanced sectors, namely the agricultural sector, the water supply sector, the financial services sector, the education services sector, the health services sector, and other service sectors. However, there are also sectors in the lagging category, namely the mining sector. Of the ten leading sectors out of seventeen sectors in Ponorogo Regency, there are three sectors which are advanced sectors and play a role in sector growth at a higher level, namely, the agricultural sector, the government administration sector, and other service sectors. Moreover, six of the nine industries namely, the sectors of water supply, building, information, real estate, education services, and health services are established sectors with particularly rapid growth and development when compared to other regions. Also, eight out of ten of the top sectors; agriculture, water supply, construction, finance, real estate, education, health, and other service sectors can better manage their sector's growth. These sectors are also in the top ten in terms of overall economic output.

Recommendations

The findings of this study provide hope for the government, especially the regional government of Ponorogo Regency as material for consideration and evaluation so that later it can be used to increase the growth of sectors that are not yet leading sectors so that later they can develop and grow into superior sectors. The balance between sectors is an important factor for increasing collaboration between sectors in order to create synergistic and dynamic economic growth and development. This will have a good impact on economic growth because it will generate interest from investors which in turn will have an impact on increasing employment opportunities and creating product efficiency through collaboration between the government and the private sector to manage existing resources.

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