Mimbar Agribisnis: Jurnal Pemikiran Masyarakat Ilmiah Berwawasan Agribisnis
P-ISSN: 2460-4321, E-ISSN: 2579-8340
Volume 11, Nomor 1, Januari 2025: 1378-1387

Measuring the Competitiveness of Ciamis Regency Using Location Quotient and Shift Share Analysis

Mengukur Daya Saing Kabupaten Ciamis Menggunakan Analisis Location Quotient dan Shift Share

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(Diterima 12-12-2024; Disetujui 23-01-2025)

ABSTRACT

Increased economic growth shows that economic activity in a region is running well. The economic capabilities of each region are different, so this research was conducted with the aim of analyzing the competitiveness of the economic sectors in Ciamis Regency. This research uses secondary data obtained from the Central Statistics Agency for West Java Province and Ciamis Regency in 2020-2023. The analysis used in this research is location quotient analysis and shift share analysis. The research results of statistic location quotient and dynamic location quotient combination shows that the sectors included in the basic and prospective sectors are the agriculture, forestry, and fisheries sectors, construction, education services, warehousing transportation, provision of accommodation and food and beverages, and the information and communication sector, while the results of the shift share analysis show that the sectors that are growing rapidly and have competitiveness are the real estate sector, corporate services, health services and social activities, and other services.

Keywords: competitiveness, location quotient, shift share

ABSTRAK

Pertumbuhan ekonomi yang meningkat menunjukkan bahwa aktivitas perekonomian di suatu wilayah berjalan dengan baik. Kemampuan perekonomian di setiap daerah berbeda-beda, sehingga penelitian ini dilakukan dengan tujuan untuk menganalisis daya saing yang terdapat pada sektor-sektor perekonomian di Kabupaten Ciamis. Penelitian ini menggunakan data sekunder yang diperoleh dari Badan Pusat Statistik Provinsi Jawa Barat dan Kabupaten Ciamis tahun 2020-2023. Analisis yang digunakan pada penelitian ini yaitu analisis location quotient dan analisis shift share. Hasil penelitian kombinasi statistic location quotient dan dynamic location quotient menunjukkan bahwa sektor-sektor yang termasuk sektor basis dan prospektif yaitu sektor pertanian, kehutanan, dan perikanan, konstruksi, jasa pendidikan, transportasi pergudangan, penyediaan akomodasi dan makan minum, serta sektor informasi dan komunikasi, sedangkan hasil analisis shift share menunjukkan bahwa sektor-sektor yang pertumbuhannya cepat dan memiliki daya saing yaitu sektor real estate, jasa perusahaan, jasa kesehatan dan kegiatan sosial, serta jasa lainnya.

Kata Kunci: daya saing, location quotient, shift share

INTRODUCTION

One indicator to see the economic success of a country is to look at its economic growth. According to Marcal *et al.*, (2024), economic growth is a reflection of the conditions that occur in the financial and economic sectors in a country. The welfare of a country is directly proportional to its economic growth. This is in accordance with the opinion of Pribadi and Nurbiyanto (2021), that positive economic growth reflects that the economy in a country is experiencing improvement. This growth will have an impact on improving community welfare.

Economic growth has a strategic role in increasing society's material output through expanding the business sector and employment opportunities, increasing and encouraging regional development, strengthening, equalizing, maximizing people's income and reducing poverty (Juardi *et al.*, 2024).

Regional development is carried out by optimally utilizing existing resources, starting with sectors that will become priorities for economic growth (Isyanto *et al*., 2019).

The comparative advantage, specialization and economic potential of a region basically influences its economic growth. Therefore, to realize sustainable economic development, top priority needs to be given to exploring and maximizing economic potential (Amalia, 2024).

Increasing economic growth in a region indicates that economic activity in that region is getting better. The economic growth of a region can be expressed through its GDP growth rate. Increasing social welfare can be achieved through economic growth if there are one or more leading economic sectors in the region (Amalia *et al.*, 2024). The Gross Regional Domestic Product (GRDP) of Ciamis in 2020-2023 can be seen in Table 1.

Table 1. Gross Regional Domestic Product of Ciamis Regency 2020-2023

Business Field	GRDP Based on Constant Prices of Ciamis Regency 2010 (Billion Rupiah)		
	2021	2022	2023
Agriculture, Forestry and Fisheries	4.589,58	4.690,18	4.747,35
Mining and Quarrying	41,84	42,03	42,92
Processing industry	1.795,13	1.921,84	1.986,24
Procurement of Electricity and Gas	17,59	19,62	20,95
Water Supply, Waste Management, Waste and Recycling	9,91	10,14	10,48
Construction	2.125,55	2.123,18	2.210,85
Wholesale and Retail Trade; Car and Motorcycle Repair	4.761,81	5.043,84	5.303,57
Transportation and Warehousing	2.661,68	2.892,89	3.176,25
Provision of accommodation and food and drink	870,35	970,87	1.034,16
Information and Communication	1.486,59	1.575,91	1.680,55
Financial Services and Insurance	852,60	904,71	947,11
Real Estate	918,16	972,30	1.030,29
Company Services	205,47	230,80	252,62
Government Administration, Defense and Mandatory Social Security	668,57	659,30	689,78
Education Services	1.119,96	1.151,63	1.203,77
Health Services and Social Activities	224,26	236,10	256,10
Other services	425,88	473,55	518,71
Amount	22.774,93	23.918,89	25.111,70

Source: Central Statistics Agency of Ciamis Regency (2024)

The economic potential of each region is different, in other words, each region certainly has superior economic components that are different from other regions. Therefore, to encourage independence and maximize regional potential, a regional economic planning model is needed that is practical and easy to implement. According to Isyanto et al., (2018), regional competitiveness is one way to measure sustainable development. The level of welfare of a region's people is proportional to its level of competitiveness.

According to Aida & Alvaro (2021), the calculation of several economic analysis tools for regional development, including the Location Coefficient (Location Quotient or LQ), Specialization Coefficient (Coefficient of Specialization or CS), Industrial Concentration Index (Industrial Concentration Index or ICI), Shift Share Analysis, and Input Output Analysis.

P-ISSN: 2460-4321, E-ISSN: 2579-8340
Volume 11, Nomor 1, Januari 2025: 1378-1387

According to Paizal et al., (2023), there are several ways to analyze the economy, namely location quotient analysis and shift share analysis. Location quotient analysis used to analyze base sectors and non-base sectors, while shift share analysis used to analyze shifts in economic market share.

Based on the description above, this research was conducted to identify potential economic sectors to be developed in Ciamis Regency. Once the basic sectors are identified, the regional government is expected to be able to determine appropriate steps to encourage regional economic growth.

RESEARCH METHOD

Within the regional economic framework, the development of various economic sectors can show the economic growth of a country. A sector can be considered an economic base sector if it is able to provide needs in that area and then export it outside the production area. On the other hand, there are sectors that are considered non-basic sectors, namely sectors that can only provide the need for goods and services in one region (Pribadi & Nurbiyanto, 2021).

This quantitative research focuses on Ciamis Regency to examine leading sectors or on a regional basis. In this case, data analysis and calculation methods are carried out Location Quotient, Dynamic Location Quotient, and Shift Share. This research uses secondary data obtained from the Central Statistics Agency of West Java Province and Ciamis Regency using data in the form of a time series, namely data from 2020 to 2023 to provide an overview of the extent of changes that have occurred in each sector and in aggregate. This LQ method has two ways, namely Static and Dynamic. The difference is, DLQ includes growth rates in its calculations while SLQ focuses on GDP values only. Shift share analysis itself is used to determine the extent of a sector's competitiveness regarding regional and regional economic growth (Azaki, 2024).

Location Quotient

a. Statistic Location Quotient

Statistic Location Quotient Formula (Isserman, 1997) as follows:

$$SLQ = \frac{\frac{Vi}{\overline{Vt}}}{\frac{Yi}{\overline{Yt}}}$$

Where:

Vi = Sectoral GRDP Value of Ciamis Regency

Vt = Total GDP Value of Ciamis Regency

Yi = Sectoral GDP Value of West Java Province

Yt = Total GDP Value of West Java Province

RV = total GRDP at provincial/reference district level j

The results of the LQ calculation have the meaning of each value, namely (Rawung et al., 2023):

- SLQ exceeds one, it is included in the base sector. This sector has a competitive advantage, has become the basis or source of regional development, because its production not only provide regional needs but can also be sold outside the region.
- SLQ = 1, it is included in the non-base sector, because this sector does not have a competitive advantage. Its production cannot provide its own demand, its requiring supplies or imports from elsewhere.
- SLQ less than one, it is included to the non-base sector, has no competitive advantage.

b. *Dynamic Location Quotient*

The DLQ method uses the formula:

$$DLQij = \left(\frac{IPPSij}{IPPSt}\right)t$$

$$IPPSij = \frac{(1+gij)}{(1+gj)}$$

$$IPPSt = \frac{(1+Gi)}{(1+G)}$$

Where:

DLQij = Sectoral Dynamic Locatio Quotient in Ciamis Regency
IPPSij = Index of potential development of sector i in Ciamis Regency
IPPSt = Index of the development potential of sector i in West Java Province
t = The difference between the final year and the initial year used in the study
gij = Sectoral growth rate in Ciamis Regency
gj = Average sector growth in Ciamis Regency
Gi = Sectoral growth rate in West Java Province
G = Average sector growth in West Java Province

The results of the DLQ analysis calculations are (Azaki, 2024):

- DLQ exceeds one, then the sector is prospective
- DLQ is less than one, then the sector is not prospective

c. Klassen Typology Analysis

Klassen typology is used to analyze the classification of economic sectors in a region (Rajab & Rusli, 2019). The Klassen Typology Chart combines SLQ and DLQ values as a basis for reflecting each economic activity which is divided into four quadrants which can be seen in Table 2.

Table 2. Klassen Typology Chart

Quadrant I Base Sector, Prospective SLQ > 1, DLQ > 1	**Quadrant III** Basic Sector, Non Prospective SLQ > 1, DLQ < 1
Quadrant II Non-Basic Sector, Prospective SLQ < 1, DLQ > 1	**Quadrant IV** Non-Basic, Non-Prospective Sector SLQ < 1, DLQ < 1

Source: Pribadi and Nurbiyanto (2021)

d. *Shift Share*

Shift share analysis formula:

Effects of regional economic growth

$$Nij = Eij.\ Rn$$

Proportional shift/sector mix

$$Mij = (Rin - Rn).\ Eij$$

Level of sector competitiveness or competitive advantage

P-ISSN: 2460-4321, E-ISSN: 2579-8340
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$$Cij = (Rij - Rin) \; . \; Eij$$

Impact of Regional Economic Growth

$$Dij = Nij + Mij + Cij$$

where:

Eij: Value of GDP Sector *I* at the District level

Rij: GDP growth rate of Sector *i* in Sragen Regency

Rin: GDP growth rate of Sector *i* in Prov. Central Java

Rn: Average GDP growth at the Prov. Central Jav

If the Dij value is greater than zero or positive, it indicates that the sector's growth is included in the progressive group, conversely if the Dij value is greater than zero or negative, then it can be said that the sector's growth is included in the non-progressive group. Classification of sectors by growth and competitiveness using shift share analysis can be grouped into four quadrants as in Table 3.

Table 3. Shift Share Analysis Quadrant

Quadrant I Fast Growth, Competitive Mij(+), Cij (+)	**Quadrant III** Fast Growth, Uncompetitive Mij (+), Cij (-)
Quadrant II Slow Growth, Competitive Mij (-), Cij(+)	**Quadrant IV** Slow Growth, Uncompetitive Mij (-), Cij (-)

Source: Pribadi and Nurbiyanto (2021)

RESULTS AND DISCUSSION

Analysis Location Quotient

Statistic Location Quotient

The result of Statistic Location Quotient in Ciamis Regency can be seen in Table 4.

Table 4. Analysis Results *Statistic Location Quotient*

Business Field	SLQ			SLQ Average
	2021	2022	2023	
Agriculture, Forestry and Fisheries	2,80	2,75	2,79	2,78
Mining and Quarrying	0,12	0,12	0,12	0,12
Processing industry	0,19	0,19	0,18	0,19
Procurement of Electricity and Gas	0,21	0,22	0,24	0,22
Water Supply, Waste Management, Waste and Recycling	0,46	0,46	0,47	0,46
Construction	1,11	1,12	1,10	1,11
Wholesale and Retail Trade; Car and Motorcycle Repair	1,43	1,45	1,47	1,45
Transportation and Warehousing	2,59	2,55	2,52	2,55
Provision of accommodation and food and drink	1,49	1,50	1,47	1,49
Information and Communication	1,07	1,07	1,06	1,07
Financial Services and Insurance	1,45	1,55	1,57	1,52
Real Estate	2,76	2,81	2,80	2,79
Company Services	2,24	2,24	2,28	2,25

Government Administration, Defense and Mandatory Social Security	1,69	1,70	1,74	1,71
Education Services	1,65	1,66	1,65	1,65
Health Services and Social Activities	1,17	1,17	1,20	1,18
Other services	0,87	0,89	0,90	0,89

Source: processed data (2024)

Statistic Location Quotient classifies sectors which are divided into two parts, namely basic and non-basic sectors. Analysis results Statistic Location Quotient in Ciamis Regency, it shows that agriculture, forestry and fisheries, construction, wholesale and retail trade; car and motorbike repair, transportation and warehousing, provision of accommodation and food and drink, information and communication, financial and insurance services, *real estate*, corporate services, government administration, defense and mandatory social security, educational services, as well as health services and social activities have SLQ values greater than one. This shows that these sectors are included in the basic sectors and have comparative advantages. Meanwhile, the mining and quarrying sector, processing industry, water supply, waste management, waste and recycling, and other services have SLQ values that are smaller than one. This shows that these sectors are included in the non-basic sectors and do not have comparative advantages.

Dynamic Location Quotient

The results of Dynamic Location Quotient in Ciamis Regency can be seen in Table 5.

Table 5. Analysis Results *Dynamic Location Quotient*

Business Field	DLQ
Agriculture, Forestry and Fisheries	1,57
Mining and Quarrying	0,03
Processing industry	1,22
Procurement of Electricity and Gas	0,05
Water Supply, Waste Management, Waste and Recycling	0,75
Construction	1,65
Wholesale and Retail Trade; Car and Motorcycle Repair	0,48
Transportation and Warehousing	1,45
Provision of accommodation and food and drink	1,18
Information and Communication	1,16
Financial Services and Insurance	0,05
Real Estate	0,67
Company Services	0,71
Government Administration, Defense and Mandatory Social Security	0,12
Education Services	1,04
Health Services and Social Activities	0,59
Other services	0,58

Source: processed data (2024)

P-ISSN: 2460-4321, E-ISSN: 2579-8340
Volume 11, Nomor 1, Januari 2025: 1378-1387

Dynamic Location Quotient classifies sectors into two parts, namely prospective and non-prospective sectors. Prospective sectors can be said to be sectors that have the potential to support the level of economic growth if these prospective sectors are given attention and development support (Pribadi & Nurbiyanto, 2021). Dynamic Location Quotient analysis result in Ciamis Regency shows that the agricultural, forestry and fisheries sectors, processing industry, construction, transportation and warehousing, provision of accommodation and food and drink, information and communication, and educational services have a DLQ value of more than one, these sectors are included in the prospective group , so it can be said that these sectors have great potential to continue to be developed, while for the mining and quarrying sector, electricity and gas procurement, water supply, waste management, waste and recycling, wholesale and retail trade; car and motorbike repair, financial and insurance services, real estate, corporate services, government administration, defense and mandatory social security, health services and social activities, and other services have a DLQ value of less than one, meaning these sectors are included in the non-prospective group.

Klassen Typology Chart

After getting the results of the SLQ and DLQ analysis, they can be combined and classified into four quadrants of the Klassen Typology. The results of the Klassen Typology in Ciamis Regency are in Table 6.

Table 6. Typology The class

Kuadran I **Base Sector, Prospective**	**Quadrant III** **Basic Sector, Non Prospective**
- Agriculture, forestry and fisheries - Construction - Warehousing transportation - Provision of accommodation and food and drink - Information and Communication - Education Services	- Wholesale and retail trade; car and motorbike repair - Financial and insurance services - *Real estate* - Company Services - Government administration, defense and mandatory social security
Quadrant II **Non-Basic Sector, Prospective**	**Quadrant IV** **Non-Basic, Non-Prospective Sector**
- Processing industry	- Mining and quarrying - Procurement of electricity and gas - Water supply, waste management, waste and recycling - Other services

Shift Share Analysis

Table 7. Shift Share Analysis Result

Business Field	**Analisis Shift Share**							
	Nij		**Mij**		**Cij**		**Dij**	
	Billion	**%**	**Billion**	**%**	**Billion**	**%**	**Billion**	**%**
Agriculture, Forestry and Fisheries	492,12	10,72	-284,59	-6,20	-49,76	-1,08	-334,35	-7,29
Mining and Quarrying	4,49	10,72	-4,68	-11,18	1,27	3,04	-3,41	-8,14

Processing industry	192,49	10,72	24,26	1,35	-25,64	-1,43	-1,38	-0,08
Procurement of Electricity and Gas	1,89	10,72	-0,90	-5,11	2,37	13,49	1,47	8,38
Water Supply, Waste Management, Waste and Recycling	1,06	10,72	-0,54	-5,43	0,05	0,46	-0,49	-4,97
Construction	227,92	10,72	-114,20	-5,37	-28,41	-1,34	-142,62	-6,71
Wholesale and Retail Trade; Car and Motorcycle Repair	510,59	10,72	-93,41	-1,96	124,57	2,62	31,17	0,65
Transportation and Warehousing	285,40	10,72	333,05	12,51	-103,88	-3,90	229,17	8,61
Provision of accommodation and food and drink	93,32	10,72	89,24	10,25	-18,75	-2,15	70,49	8,10
Information and Communication	159,40	10,72	55,18	3,71	-20,62	-1,39	34,56	2,32
Financial Services and Insurance	91,42	10,72	-65,86	-7,72	68,95	8,09	3,09	0,36
Real Estate	98,45	10,72	1,24	0,14	12,44	1,35	13,68	1,49
Company Services	22,03	10,72	21,02	10,23	4,10	1,99	25,12	12,22
Government Administration, Defense and Mandatory Social Security	71,69	10,72	-67,62	-10,11	17,14	2,56	-50,48	-7,55
Education Services	120,09	10,72	-30,78	-2,75	-5,50	-0,49	-36,28	-3,24
Health Services and Social Activities	24,05	10,72	2,91	1,30	4,88	2,18	7,79	3,48
Other services	45,67	10,72	32,75	7,69	14,42	3,39	47,16	11,07

Components of National Growth (Nij)

Table 7 shows that the national growth value shows a positive value in all business sectors. This shows that economic growth in Ciamis Regency is positive. The business fields that receive the greatest impact from economic growth are the wholesale and retail trade sectors; car and motorbike repairs, while the smallest are the water supply, waste management, waste and recycling sectors.

Proportional Growth Components (Mij)

The proportional growth component reflects the comparison between the growth of each economic sector and the total growth at the provincial level. The Mij component has an impact on the growth of the economic sector at the lower level. Table 7 shows that there are eight business sectors that have positive value, namely the processing industry sector, transportation and warehousing, providing accommodation and food and drink, information and communication, *real estate*, company services, health services and social activities, as well as other services. A positive value (Mij > 0) indicates rapid growth. On the other hand, there are 17 business sectors that have negative values (Mij < 0). This shows that sectors with negative values experience slow growth.

Components of Regional Growth (Cij)

The regional share growth component shows the competitiveness of economic sectors at the lower level against economic sectors at the upper level. A positive Cij value (Cij > 0), indicates that the economic sector has good competitiveness against regions at the top level, conversely, if the Cij value is negative

P-ISSN: 2460-4321, E-ISSN: 2579-8340
Volume 11, Nomor 1, Januari 2025: 1378-1387

(Cij < 0), it indicates that the economic sector does not have competitiveness against regions at the top level. Table 7 shows that there are 12 sectors in the economic business sector in Ciamis Regency that have competitiveness, namely the mining and quarrying sector, electricity and gas procurement, water supply, waste management, waste and recycling., wholesale and retail trade; car and motorbike repair, financial and insurance services, *real estate*, company services government administration, defense and mandatory social security, health services and social activities, as well as other services. Meanwhile, other sectors do not have competitiveness.

Net Shift Components (Dij)

The net turnover component is the sum of the Mij and Cij components, the Dij value indicates a sector with progressive growth. Table 7 shows that there are 10 economic sectors that have positive values, namely the electricity and gas procurement sector, wholesale and retail trade; car and motorbike repair, transportation and warehousing, provision of accommodation and food and drink, information and communication, financial and insurance services, *real estate*, company services, health services and social activities, as well as other services. Meanwhile, 5 other sectors had negative net shift values.

Table 8. Quadrant of Shift Share Analysis Result

Quadrant I	Quadrant III
● *Real Estate* ● Company Services ● Health Services and Social Activities ● Other Services	● Processing industry ● Transportation and Trade ● Provision of accommodation and food and drink ● Information and Communication
Quadrant II	**Quadrant IV**
● Mining and Quarrying ● Procurement of Electricity and Gas ● Water Supply, Waste Management, Waste and Recycling ● Wholesale and Retail Trade; Car and Motorcycle Repair ● Financial Services and Insurance ● Government Administration, Defense and Mandatory Social Security	● Agriculture, Forestry and Fisheries ● Construction ● Education Services

CONCLUSION

1. There are 17 business sectors that have statistic location quotient value more than one, namely the agriculture, forestry and fisheries sectors, construction, wholesale and retail trade; car and motorbike repair, transportation and warehousing, provision of accommodation and food and drink, information and communication, financial and insurance services, *real estate*, corporate services, government administration, defense and mandatory social security, educational services, as well as health services and social activities.
2. There are 7 business sectors that have dynamic location quotient value more than one, namely the agricultural, forestry and fisheries sectors, processing industry, construction, transportation and warehousing, provision of accommodation and food and drink, information and communication, and educational services.

3. Shift share analysis result shows that the sectors that are growing rapidly and have competitiveness are *real estate*, company services, health services and social activities, as well as other services sectors.

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