



ANALYSIS OF ECONOMIC STRUCTURE TRANSFORMATION IN EAST KUTAI DISTRICT EAST KALIMANTAN PROVINCE 2012-2022

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Abstract

High economic growth is a sign of good social welfare. The total added value generated by all business units in an area is known as GRDP. Meanwhile, existing resources can be simplified and focused on the growth of sectors that have multiple impacts on other sectors during the regional economic development process.

This study aims to determine the potential of leading sectors, changes and shifts in industries, and the position of economic sectors based on their growth and contribution in East Kutai Regency for the 2012-2022 period. The techniques used are location quotient (LQ) analysis, shift share, and growth ratio model (MRP). This quantitative study used secondary data as time series of the Gross Regional Domestic Product (GRDP) of East Kutai Regency and East Kalimantan Province from 2012-2022.

The results of the Location Quotient analysis show that the mining and quarrying sector is the basic sector in East Kutai Regency. Based on the results of the shift-share study of the seventeen economic sectors, progress has been rapid from year to year, so there has been a shift in the financial industry. The results of the analysis of the growth ratio model (MRP) show that the dominant growth sectors are the agriculture, forestry, and fisheries sectors, the electricity and gas procurement sector, the water supply sector, waste processing, waste, the construction sector, the wholesale and retail trade sector, the transportation and warehousing sector. Accommodation provision sector, information and communication sector, financial and insurance services sector, real estate sector, corporate services sector, government administration sector, education services sector, health services sector and social activities, and other service sectors.

Keywords: Leading Sectors, Economic Structure, Economic Sector Growth, Location Quotient, Shift Share, Growth Ratio Model.

INTRODUCTION

To create new employment and encourage the growth of economic activity in the region, local governments and communities manage their current resources and establish patterns of collaboration with the private sector. This process is known as regional economic Development. Economic Development has four key components: growth, poverty alleviation, economic change or transformation, and sustainable transition from an agrarian to an industrial society. Increased and sustainable growth, poverty reduction, and support for sustainable Development depend on structural reform.

When the primary sector (agricultural) of the economy is reduced, the secondary sector (industry) is increased, and the tertiary sector (services) is also increased in step with economic growth, the economy is said to be changing structurally. Other connected financial industries are growing due to the regional economy's structure. A region is advanced if it is supported by high levels of human and technical Development and substantial natural resources handled by human resources. It has a strong potential for regional growth.

The regions still needed to be free to choose which industries or goods would be prioritized before regional autonomy. However, with regional autonomy, each area has more discretion in determining which sectors or products should get development priority—32 of 2014. The traditional society, the prerequisites for takeoff, the drive to maturity, and the period of high mass consumption, according to Rostow, are the five stages that make up the economic growth process.

According to Kuznets, changes in the composition of aggregate demand, foreign trade (exports and imports), and aggregate supply (production and use of production factors) as a result of the process of developing and sustainable economic growth are referred to as changes in economic structure, also known as structural transformation. The transition from agricultural to non-agricultural activities, from industry to services, changes in the size of productive units, the move from sole proprietorships to legal entities, and changes in the operational status of employees are structural changes in recent economic growth. Because industrialized nations making Development now have a competitive edge in manufacturing, the importance of industrial output in national production is growing.

LITERATURE REVIEW

Gross Regional Domestic Product (GRDP)

The Gross Regional Domestic Product (GRDP) is an indicator that shows the economic growth rate of a region by sector so that the causes of economic growth in the area can be seen. GRDP (Gross Regional Domestic Product) is the amount of value added produced by all business units in a particular region or is the total value of goods and services produced by all economic units.

Structural Change Theory

This theory focuses on the mechanism of economic transformation experienced by developing countries, which was originally more subsistence in nature and emphasized the agricultural sector towards a more modern economic structure and was dominated by the industrial and service industries.

W. Arthur Lewis

The structural transformation of a subsistence economy was formulated by the great economist W. Arthur Lewis. With his theory of the two-sector model, among others:

1. Traditional Economy

In this theory, Lewis assumes that rural areas with traditional economies experience a labor surplus. The formal economy is where the people's living level is at subsistence conditions; this is due to overpopulation and is characterized by marginal labor productivity equal to zero. It means that the production function in the agricultural sector has reached the level of the law of diminishing returns. This condition shows that adding variable inputs, such as labor, will reduce the total

production. On the other hand, a reduction in the agricultural sector's work will not reduce the current production level due to the proportion of variable labor input that is too large.

2. Industrial Economy

This economy is located in urban areas, where the industrial sector is important. The characteristic of this economy is the high productivity level of the inputs used, including labor. It implies that the marginal production value, especially of work, is positive. The urban economy will thus be a destination for workers from rural areas.

Chenery's Development Pattern Theory

The pattern of development theory analysis focuses on structural changes in the stages of economic instability, industry, and institutional structure of developing economies, which will transform from traditional agriculture to the main engine industrial sector as economic growth.

The Fei-Ranis (Ranis and Fei) Theory

This theory elaborates on concepts related to labor transfer from the agricultural sector to the industrial sector. The thesis deals with an underdeveloped country with a surplus of labor with a lack of resources, and part of the population is engaged in agriculture amidst severe unemployment, with a high population growth rate until Development starts again from reallocating surplus labor in agriculture, whose contribution to output is zero, to the more productive industrial sector at the same wages as in agriculture.

METHOD

This study uses quantitative research, which requires many numbers, starting with data collection, interpretation of the data, and the appearance of the results. Several data analysis methods are used. Namely, Location Quotient is used to determine the base and non-base sectors of East Kutai Regency, Shift Share analysis is used to determine changes and shifts in the economic sector of East Kutai Regency, Growth Ratio Model, and Overlay is used to see the leading industry and the growth of the contribution of each financial sector in East Kutai Regency.

Location Quotient (LQ) Analysis

The LQ method determines the base and non-base sectors in a certain area. According to Tarigan, the LQ method is carried out by comparing the portion of employment/value added for certain regional sectors and compared with the portion of employment/value added for the same industry nationally.

Shift Share Analysis

Shift Share Analysis is used to analyze and find out the shifts and roles of sectors in the economy in a region. This method is used to observe the structure of the economy and its changes by emphasizing sector growth in the area and compared with the same sector at a higher regional or national level.

Growth-Share Analysis

MRP analysis is used to look at descriptions of economic activity, especially in the economic structure of the study area, which emphasizes growth criteria, both externally and internally, looking at the economic sectors that exist in the economy of the study area compared to the site or region that is used as a reference.

RESULT AND DISCUSSION

Location Question (LQ)

The analysis is used to see the economic sectors in the GRDP that will be classified into basic and non-basic sectors in East Kutai Regency. If the LQ value > 1, it means that the role of the industry in East Kutai Regency is more prominent than the role of the sector in East Kalimantan and can be used as a pointer that East Kutai Regency has an advantage in the industry. If the sector becomes superior, then East Kutai Regency can export goods and services in the industry so that the needs of other regions can be met; East Kutai Regency can also get revenue from export activities to the other areas. Conversely, if the LQ value < 1, then the sector's role in East Kutai Regency is smaller than that of the industry in East Kalimantan. As a result, East Kutai Regency must import activities to fulfill this sector within its territory.

Table 1. Calculation Results for the Location Quotient (LQ) Index for the Economic Sector of East Kutai Regency in 2012-2022

Kategori	Business Field	LQ Analysis										
		2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
A	Agriculture, Forestry, and Fisheries	1,07	1,03	0,99	0,95	0,95	0,94	0,95	0,93	0,93	0,95	0,95
B	Mining and Quarrying	1,59	1,60	1,62	1,68	1,72	1,74	1,76	1,74	1,76	1,76	1,77
C	Processing Industry	0,11	0,11	0,12	0,12	0,12	0,13	0,14	0,14	0,14	0,14	0,14

D	Electricity and Gas Procurement	0,20	0,20	0,19	0,19	0,20	0,20	0,21	0,20	0,21	0,22	0,22
E	Water Supply, Garbage Treatment, Waste	0,30	0,29	0,30	0,29	0,29	0,28	0,27	0,27	0,26	0,27	0,26
F	Construction	0,31	0,30	0,29	0,28	0,28	0,25	0,24	0,22	0,23	0,23	0,26
G	Wholesale and Retail Trade, Car Repairs	0,35	0,35	0,35	0,35	0,34	0,34	0,34	0,32	0,33	0,34	0,34
H	Transportation and Warehousing	0,35	0,35	0,35	0,34	0,34	0,34	0,34	0,34	0,37	0,38	0,35
I	Provision of Accommodation and Drinking Food	0,29	0,29	0,29	0,28	0,28	0,27	0,27	0,26	0,27	0,28	0,28
J	Information and Communication	0,20	0,20	0,20	0,20	0,20	0,20	0,20	0,19	0,18	0,19	0,19
K	Financial and Insurance Services	0,12	0,11	0,11	0,10	0,11	0,11	0,11	0,11	0,11	0,12	0,11
L	Real Estat	0,43	0,42	0,40	0,39	0,39	0,39	0,40	0,39	0,40	0,42	0,42
M, N	Company Services	0,34	0,33	0,33	0,34	0,34	0,34	0,34	0,33	0,33	0,34	0,34
O	Government Adm, Defense & Compulsory Social Security	0,50	0,49	0,48	0,46	0,46	0,46	0,45	0,42	0,44	0,45	0,45
P	Education Services	0,64	0,62	0,66	0,64	0,65	0,65	0,65	0,64	0,64	0,66	0,66

Q	Health and Social Services	0,27	0,27	0,26	0,25	0,25	0,24	0,25	0,24	0,24	0,25	0,24
R, S, T, U	Other Services	0,32	0,32	0,32	0,30	0,30	0,30	0,29	0,28	0,29	0,29	0,29

Source: BPS, Data processed (2023)

Based on the LQ analysis calculation index that has been carried out, it can be seen that the dominating sector in East Kutai Regency is the mining and quarrying sector, with an average value of 1.70 or $LQ > 1$. It indicates that the contribution of the mining and quarrying sector to the economy of East Kutai Regency can meet its own needs and export the sector's needs to other areas in need. While the agricultural industry from 2012-2022 experienced a change from the previous $LQ > 1$ value to $LQ < 1$, this indicates that the farm sector was previously able to contribute greatly to the economy of East Kutai Regency. At the same time, the industrial and processing sector, electricity procurement, water procurement, construction, trade, transportation, provision of accommodation, information, financial services, real estate, corporate services, government administration, education services, health services, and other services have an LQ index value < 1 . It causes these sectors to contribute low and non-potentially to the economy.

Shift Share Analysis

Shift Share analysis is an analysis that describes the performance of sectors in a region compared to the national economy. If a part gains progress through its position in the national economy, it can be found that a shift in economic development results in that area. In addition, the growth rate of the sectors in a region is then compared with the speed of the national economy and all of its sectors. Furthermore, an analysis of the deviations from this comparison is carried out. If the variation is positive, it can be a competitive advantage for the sector in the region.

Table 2. Calculation Results of Shift Share Values for East Kutai Regency in 2012-2022

Category	Business Field	Nij	Mij	Cij	Dij
A	Agriculture, Forestry, and Fisheries	834494,85 14	5334394,69	- 384186,9088	5784702,636
B	Mining and Quarrying	11852404, 07	-33659363	12202890,75	-9604068,05
C	Processing Industry	310034,01 11	-3955824,9	698105,6187	-2947685,31
D	Electricity and Gas	827,51381	188633,784	1855,209435	191316,5074

	Procurement	39			
E	Water Procurement, Garbage, and Waste Management	1613,1651 45	82042,9738	- 927,9212027	82728,21772
F	Construction	279730,80 83	7103240,94	- 205106,5958	7177865,154
G	Wholesale and Retail Trade, Car Repairs	223914,45 67	7152395,3	17420,34826	7393730,108
H	Transportation and Warehousing	115253,60 6	3220279,14	78458,07218	3413990,819
I	Accommodation and Drinking Food Provision	26271,747 69	1323206,24	101,0730886	1349579,064
J	Information and Communication	31491,050 74	4122365,91	- 10435,12365	4143421,841
K	Financial Services and Insurance	21237,940 93	1639774,22	- 5881,632885	1655130,527
L	Real Estate	45402,080 56	573008,387	14963,64079	633374,1088
M, N	Company Services	8521,4297 99	59284,3378	3527,572898	71333,34053
O	Government Adm, Defense & Compulsory Social Security	111679,51 73	666606,532	- 46007,59403	732278,4555
P	Education Services	79037,997 91	3215838,44	86502,06831	3381378,51
Q	Health and Social Services	14755,503 42	2066483,56	- 13017,85024	2068221,211
R, S, T, U	Other Services	17751,968 46	867985,875	- 8287,144811	877450,6989
Total		13956669, 75	352,548704	12429973,58	26386995,87

Source: BPS, Data processed (2023)

The results of the Shift Share Analysis show that during the last ten years, from 2012-2022, the sectoral GRDP value of East Kutai Regency has experienced Development or change. The GRDP

value grew by IDR 27,700,346.5 million, and this Development was influenced by the components of national growth (Nij), industry mix (Mij), and competitive advantage (Cij).

For the industrial mix component (Mij), it is stated that the magnitude of changes in the regional economy results from the industrial sector's mix. Where the results of the analysis show that the industry mix negatively influences economic Development in East Kutai Regency in the 2012-2022 time period, namely IDR 35,254,870.42 million, this positive value indicates that the composition of the sectors in the GRDP of East Kutai Regency leads to an economy that will grow relatively well. The Mij value is positive, indicating that the economy of East Kutai Regency is specialized in the same sector and is growing rapidly in the economy of East Kalimantan Province. Meanwhile, if the Mij value is negative, it means that the economy of East Kutai Regency is specializing in the same sector and growing relatively slowly in the economy of East Kalimantan Province.

Sectors that have a proportional growth value or industry mix that has a positive value, namely, agriculture, electricity procurement, water supply, construction, trade, transportation, accommodation providers, information, financial services, real estate, corporate services, government administration, educational services, health services, and other services. While the sectors that have proportional growth values that are negative, namely, mining and processing industries.

The calculation value of the competitive advantage component (Cij) in the table is Rp. 12,429,973.58 million. This value indicates that the resulting competitive advantage can increase the economic Development of East Kutai Regency. The influence of East Kutai Regency's competitiveness has encouraged economic growth in East Kutai Regency. In addition to the data in the table, ten economic sectors have a positive competitive advantage value. In contrast, other sectors have a negative competitive advantage value, which means that the sectors with a negative value have relatively slow growth at the East Kalimantan Province level.

Net shifts are part of the shift-share analysis, which can be calculated from the sum of the Proportional Shift (Mij) and Differential Shift (Cij) in all economic sectors. If the value of $PB > 0$, it can be defined that the growth of the East Kutai Regency financial sector is included in the progressive (advanced) group. However, if the value of the net shift in a PB sector is < 0 , then growth in that economic sector is included in the sluggish group.

Table 3 Shift Share Analysis Table of Net Shifts

Category	Component		NS
	Mij	Cij	
Agriculture	5334394,693	-384186,9088	4950207,784
Mining	-33659362,86	12202890,75	-21456472,11
Processing Industry	-3955824,939	698105,6187	-3257719,321
Electricity Procurement	188633,7841	1855,209435	190488,9936
Water Procurement	82042,97377	-927,9212027	81115,05257

Construction	7103240,941	-205106,5958	6898134,345
Trade	7152395,303	17420,34826	7169815,652
Transportation	3220279,14	78458,07218	3298737,213
Accommodation Provision	1323206,243	101,0730886	1323307,316
Information	4122365,914	-10435,12365	4111930,79
Financial Services	1639774,218	-5881,632885	1633892,586
Real Estate	573008,3875	14963,64079	587972,0282
Corporate Services	59284,33784	3527,572898	62811,91073
Government Administration	666606,5322	-46007,59403	620598,9381
Education Services	3215838,444	86502,06831	3302340,513
Health Services	2066483,558	-13017,85024	2053465,708
Other Services	867985,8753	-8287,144811	859698,7304
Total	352,5487042	12429973,58	12430326,13

Source: Source: BPS, Data processed (2023)

Netto Shift value or net shift, sectorally, 15 sectors have a PB value > 0. It shows that the sector is progressive or advanced. Meanwhile, sectors with a PB value < 0 are the mining sector and the processing industry, so these two sectors fall into the category of relatively slow development sectors.

The table explains that there has been a shift in the economic sector in the economy in East Kutai Regency from 2012-2022. The economy in East Kutai Regency has been supported by ten economic sectors, which have positive values in the table above. One of the characteristics of a region that is starting to progress is that there has been a transformation of the economic structure. It is to the characteristics mentioned in the Kuznets hypothesis regarding growing areas, one of which is the structural growth rate.

Analysis of the Growth Ratio Model (MRP)

Analysis of the Growth Ratio Model (MRP) was carried out to see a description of economic activity, especially in the economic structure of a region that emphasizes growth criteria both externally (the preference area of East Kalimantan Province) and internally (the study area of East Kutai Regency).

Table 4 Growth Ratio Model for East Kutai Regency, East Kalimantan Province in 2012-2022

Category	GROWTH RATIO MODEL				
	Lapangan Usaha	RPr	Sign	RPs	Sign
A	Agriculture, Forestry, and Fisheries	1,88	+	1,77	+
B	Mining and Quarrying	0,21	-	1,21	+

C	Processing Industry	0,78	-	3,00	+
D	Electricity and Gas Procurement	4,10	+	11,56	+
E	WaterProcurement, Garbage, Waste Management	2,64	+	3,17	+
F	Construction	1,99	+	1,69	+
G	Wholesale and Retail Trade, Car Repairs	2,32	+	3,12	+
H	Transportation and Warehousing	2,17	+	3,43	+
I	Accommodation and Drinking Food Provision	2,60	+	3,67	+
J	Information and Communication	3,36	+	5,50	+
K	Financial Services and Insurance	2,14	+	2,41	+
L	Real Estate	1,72	+	2,31	+
M, N	Company Services	1,34	+	1,84	+
O	Government Adm, Defense & Compulsory Social Security	1,42	+	1,13	+
P	Education Services	3,32	+	6,81	+
Q	Health and Social Services	3,83	+	6,95	+
R, S, T, U	Other Services	2,69	+	3,40	+

Source: BPS, Data processed (2023)

The results of the Growth Ratio Model analysis in the table above show that by sector, those included in quadrants 1, 2, 3, and 4 are as follows:

Quadrant I: agriculture, forestry and fisheries sector, electricity and gas procurement sector, water supply sector, waste management, waste management, construction sector, wholesale and retail trade sector, transportation and warehousing sector, accommodation provision sector, information and communication sector, the financial and insurance services sector, the real estate sector, the corporate services sector, the government administration sector, the educational services sector, the health services sector and social activities, and other service sectors.

Quadrant II: -

Quadrant III is the mining and quarrying, and manufacturing industry sectors.

Quadrant IV: -

CONCLUSION

Based on the results of the discussion that has been carried out, it can be concluded as follows:

1. Calculating the Location Quotient index shows that the mining and quarrying industry is the basic sector.

2. Shift Share analysis results in competitive sectors: the agricultural industry, electricity procurement, water supply, construction, trade, transportation, accommodation providers, information, financial services, real estate, corporate services, government administration, educational services, health services, and others.
3. The results of the net shift-shift-share analysis show that the economic sector of East Luwu Regency over the past five years (2012-2022) has experienced a shift from the primary to the secondary or tertiary sector.
4. The results of the analysis of the Growth Ratio Model, the categories that grow faster than the Province include the agriculture, forestry, and fisheries sectors, the electricity and gas procurement sector, the water supply sector, waste processing, waste, the construction sector, the wholesale and retail trade sector, the transportation and warehousing sector, the accommodation provision sector, the information and communication sector, the financial and insurance services sector, the real estate sector, the corporate services sector, the government administration sector, the education services sector, the health services sector and social activities, and other service sectors.

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