

The Transformation of Economic Structure in Gowa Regency

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Abstract

This study aims to analyze the transformation of Gowa's economic structure and determine the potential sectors by using the GDP of Gowa and South Sulawesi in 2010-2017. The analysis technique used is shift-share analysis and Location Quotient (LQ). The results of the shift-share analysis show that there has been an economic transformation from potential to progressive sectors. The agriculture, forestry, and fisheries is a potential sector and have the largest contribution to GDP but are classified as move slowly field, negative competitive advantage or no high competitiveness in the economic sector. The result of LQ analysis shows that the potential sectors in Gowa are the real estate and the electricity and gas procurement.

Keywords: *transformation of economic structure*

Introduction

The development of the regional economy is a process where the government and its people manage existing resources and form a partnership pattern between the locality government and the private sector to create new employment and stimulate the growth of economic activities in the area (Arsyad, 2009).

The construction of economic areas is an inseparable part of national development. Regional development is directed at increasing national income growth through its activities carried out by the central government. In the other words, national development will have a positive impact on progress in the area, in the form of increasing the Gross Regional Domestic Product as a tool that can be used to measure economic growth.

Local development is always aimed to increase the rate of economic growth and changes in economic structure. To achieve this goal, it is necessary to prioritize economic sectors that can support a fairly high rate of economic progress and changes in economic structure. Regional governments must be able to see sectors that have advantages and disadvantages in their areas (Prawira & Hamidi, 2013).

Greater authority granted to regions in the current era of autonomy requires that local governments and their communities must jointly take initiatives and use resources that exists correctly and is able to estimate the potential of resources or economic sectors that are owned to be used in arranging models of economic development that are most suitable with the area.

Samuelson (Tarigan, 2005) states that each country or region needs to look at sectors or commodities that they have great potential and can be developed quickly, both of natural resources or competitive advantage. Therefore, local governments must be more creative in exploring and developing economic potential to improve the regional economy. Also, local governments must be able to assess the potential of their resources to be used in the setting of economic development models that are most suitable for the area.

The economic sector will be experience changes during the development process. Some of the main components of the structural change include a gradual shift from the agricultural to the non-agricultural sector. This structural approach is supported by Lewis with the theory "labor surplus of two sectors" and Chery with his empirical analysis about "patterns of development" (Todaro & Smith, 2000).

In line with the theory of modern economic growth which represent that structural changes in modern economic growth include the transition from agricultural to non-agricultural activities, from industry to services, changes in the scale of productive units, and the transition from individual companies into legal entities with changes in status work of labor(Jhingan, 2004).

The result of research in 2004 stated that several provinces, including South Sulawesi, still relied on the agricultural sector. It absorbs most of the workforce even with lower wages than other economic sectors(Sitanggang & Nachrowi, 2004). One such area is Gowa. For more details, it can be seen in table 1.1 about the distribution of Gross Regional Domestic Product

Table 1 Distribution of GDP Based on Constant Prices on Business Fields in Gowa 2017

Number	Business Field	2010	2011	2012	2013	2014	2015	2016	2017
1	Agriculture, Forestry & Fisheries	36,8	35,51	34,10	32,16	32,07	31,14	30,52	29,74
2									
3	Mining and Quarrying	2,32	2,39	2,56	2,57	2,70	2,84	3,00	3,17
4	Processing Industry	6,81	6,74	6,60	6,50	6,40	6,39	6,43	6,50
5	Electricity & Gas Procurement	0,17	0,16	0,18	0,18	0,20	0,18	0,19	0,19
		0,16	0,17	0,16	0,15	0,14	0,14	0,13	0,13
6	Water Supply, Waste Management & Recycling	8,81	9,01	9,14	10,72	10,48	10,53	10,56	10,67
7	Construction	10,50	10,64	11,16	11,27	11,58	11,54	11,85	12,09
8	Wholesale and Retail Trade, Car & Motorcycle Repair	1,38	1,42	1,44	1,43	1,46	1,46	1,40	1,39
9	Transportation&Trade	2,39	2,38	2,36	2,35	2,39	2,39	2,39	2,46
10	Provision of Accommodation & Food and Drink	8,71	8,94	9,46	10,10	9,92	10,25	10,51	10,77
11	Information&Communication	1,92	2,17	2,38	2,32	2,29	2,31	2,46	2,33
12	Financial Service& Insurance	5,33	5,54	5,96	6,38	6,91	7,48	7,58	7,60
13	Real Estate	0,12	0,12	0,12	0,12	0,12	0,12	0,12	0,12
14	Company Services	7,03	6,81	6,39	5,91	5,66	5,50	5,22	5,09
15	Government Administration, Defense & Mandatory Social Security	4,79	4,80	4,80	4,72	4,52	4,52	4,46	4,51
16	Education Services	1,78	1,78	1,78	1,76	1,80	1,84	1,83	1,83
17	Health Services& Social Activities	1,42	1,41	1,41	1,36	1,35	1,36	1,36	1,41
	Another Services								

(Statistics of Gowa, 2019)

Table 1 shows that from 2010 to 2017 GDP of Gowa continues to experience growth. In general, each sector has an increase in the distribution of GDP from year to year. Over the past eight years, the agriculture, forestry, and fisheries sectors give the most contributed to Gowa. However, it fluctuates and even tends to decrease.

The contribution of sectors that have increased from year to year are the mining, quarrying, and real estate. The company's service sector has a fixed contribution of 0.12% annually to the formation of GDP. Meanwhile, the government administration, defense, and social security sectors has decreased from year to year. The wholesale

and retail trade sector, car and motorcycle repair tends to increase. It's just that in 2015, it decreased by 0.04%. However, starting in 2016 has increased again.

Base on the problem above, this research tries to describe the pattern of structural transformation in the economy and determine the sectors of the basis and other sectors in terms of the formation GDP so that it can be taken into consideration in the formulation of policies and planning development in Gowa.

Methods

This research is a descriptive study, namely the presentation and preparation of tables in the form of contextual exposure to the problem that would be analyzed. This study was conducted using GDP data of Gowa Regency and South Sulawesi Province 2010 and 2017 based on 2010 constant prices. The research method used was shift-share and Location Quotient (LQ) analysis.

1. According to (Abidin, 2015), analysis technique shift-share divides growth changes (Dij) into three components:
 - a. The effect of economic growth (Nij), which is measured by analyzing changes in aggregate work sectorally compared with changes in the same sector in the economy that is used as a reference.
 - b. The effect of industrial mix (Mij) which measures relative changes, growth or decline in the area compared to the larger economy. This measurement can determine whether the regional economy is concentrated in industries that are growing faster than the economy that is used as a reference.
 - c. The effect of differential competitive advantage (Cij), which determines how far the competitiveness of the local industry and the economy is used as a guide.

The general form of shift-share analysis is as follows:

$$Dij = Nij + Mij + Cij$$

$$Nij = Eij \cdot Rn$$

$$Mij = Eij (rij - rn)$$

$$Cij = Eij (rij - rin)$$

Note:

- i = researched sector
- j = region variables studied
- Dij = sector (i) changes in Gowa
- Nij = component of the national growth sector (i) in Gowa
- Mij = component of proportional growth sector (i) in Gowa
- Cij = competitive advantage of sector (i) in Gowa
- Eij = GDP of sector (i) in Gowa
- rij = growth rate of sector (i) in Gowa
- rin = growth rate of sector (i) in South Sulawesi
- rn = growth rate of GDP in Gowa

Assessment Criteria:

- 1) If $Mij > 0$, then sector (i) growth is fast in the district area
- 2) If $Mij < 0$, then sector (i) growth is slow in the district area
- 3) If $Cij > 0$, then sector (i) has good competitiveness compared to other district
- 4) If $Cij < 0$, then sector (i) do not have a good competitiveness compared to other district

Quadrant analysis by looking based on proportional Shift (PS) and Differential Shift (DS) components with the following conditions:

- a. Quadrant I (positive PS and DS) are sectors with very rapid growth
 - b. Quadrant II (negative PS and positive DS) are sectors with a depressed but develop
 - c. Quadrant III (positive PS and negative DS) are sectors with depressed growth velocity but tend to be potential
 - d. Quadrant IV (negative PS and DS) are sectors with a role in low regions and also have weak competitiveness.
2. The analysis method of LQ intended to identify and formulate the base and non-base sectors. This method identifies the internal potential that is owned in the area (Kuncoro, 2004)

$$LQ = \frac{S_i}{S} : \frac{N_i}{N}$$

Note:

- LQ = Location Quotient
- S_i = GDP of sector (i) in Gowa
- S = total GDP of Gowa
- N_i = GDP of sector (i) in South Sulawesi
- N = total GDP of South Sulawesi

Criteria:

- 1) LQ = 1, the role of sector (i) in the district is the same as in the province
- 2) LQ > 1, if the LQ value is greater than one accordingly the sector is a base and it can not only meet needs within the region but also needs outside, this sector has the potential to be developed
- 3) LQ < 1, the role of sector (i) in the district is smaller than in the province and indicates that the sector has a deficit in the area

Results and Discussion

1. Structural transformation in the formation of GDP in Gowa

Structural transformation in the economy is measured by using shift-share analysis. Structural transformation in the economy is measured by using analysis shift share. It is used to know the economic growth in Gowa by linking the GDP of South Sulawesi Province. The results of the shift-share analysis can be seen in table 2.1

Table 2 Shift Share Analysis of Gowa 2010 to 2017 (Million Rupiah)

Number	Sector	N _{ij}	M _{ij}	C _{ij}	NS
1	Agriculture, Forestry & Fisheries	1770244.81	-337213.36	-466331.72	-803545.08
2	Mining and Quarrying	112949.77	-54675.97	156106.45	101430.48
3	Processing Industry	331455.89	14384.94	-52067.27	-37682.33
4	Electricity & Gas Procurement	8140.67	2440.61	554.77	2995.38
5	Water Supply, Waste Management & Recycling	7656.05	-2783.53	-411.35	-3194.89
6	Construction	428558.77	32689.16	188245.35	220934.51
7	Wholesale and Retail Trade, Car & Motorcycle Repair	511087.39	134946.20	52734.15	187680.35

8	Transportation&Trade	66921.14	3956.42	-2219.05	1737.37
9	Provision of Accommodation & Food and Drink	116336.38	17752.88	-10504.72	7248.16
10	Information&Communication	423661.34	257980.15	-13150.33	244829.83
11	Financial Service& Insurance	93525.64	48520.95	-82.12	48438.83
12	Real Estate	259432.47	16135.91	253966.62	270102.53
13	Company Services	5647.04	-140.94	366.30	225.35
14	Government Administration, Defense & Mandatory Social Security	341854.38	-191348.66	-41395.43	-232744.10
15	Education Services	232884.65	237.68	-33989.84	-33752.16
16	Health Services& Social Activities	86538.24	22182.97	-16515.12	5667.84
17	Another Services	69145.92	6211.45	-7803.76	-1592.31
Total		4.866.040,54	-28.723,15	7.502,92	-21.220.23

Source: Result of Data Processing

The results of the shift-share analysis show that for eight years, the GDP value of Gowa has experienced change and development. Seen from a decrease of -21220.23 million rupiah. It is influenced by the components of national growth (Nij), proportional growth (Mij), and competitive advantage (Cij). The national growth component (Nij) shows that the GDP of Gowa has growth amounted to 4,866,040.54 million rupiah. This positive value shows that Gowa is still very dependent on the economy of South Sulawesi. In other words, the economic policies of South Sulawesi affect the economic course of Gowa.

The proportional growth component (Mij) states the large changes in the regional economy as a result of proportional growth. The analysis showed that proportional growth hurt the economic development of Gowa amounting to -28,723.15 million rupiah. Negative values indicate that in general the composition of the economic sectors in Gowa tends to lead to a slow economy. This is consistent with the results of the study (Marsuki, 2018) which states that the structure of the economy in South Sulawesi is correlated in Makassar City. The results of the regional economic welfare typology test show that Gowa is classified as a fast-developing area caused by high economic growth but per capita income is less than the provincial average.

In the economic sector, Gowa has some aspect that experienced rapid growth, like manufacturing, electricity and gas procurement, wholesale trade and retail repair of cars and motorcycles, real estate, and company services. Meanwhile, the slow-moving sectors like agriculture, forestry and fisheries, mining and quarrying, water supply, waste management, waste and recycling, the corporate service, and government administration, defense, and social security. Gowa is a semi-urban area so real estate development has begun to make. Likewise with the sectors that support the development of the real estate. Besides, Gowa is also one of the industrial centers in South Sulawesi.

The calculation value of the competitive advantage component (Cij) is 7,502.92 million rupiah. This value indicates that the competitive advantage generated will add to the economy in Gowa, and the influence of the competitiveness can drive economic growth.

In table 2, there are several sectors that have positive competitive advantages, like mining and quarrying, electricity and gas procurement, construction, wholesale and retail trade, car and motorcycle repair, real estate, corporate services. Meanwhile, the agriculture, forestry, and fisheries sectors have a negative competitive advantage and experience slow growth in South Sulawesi. Likewise with other sectors that have a negative (Cij) value. It is happening because agricultural land in Gowa is beginning to be converted into industrial land and real estate.

Based on the calculation of net shift (NS) in table 2.1, aggregate NS produces a negative value of -21,220.23 million rupiah. This shows that in general economic growth in Gowa is included in the nonprogressive group. However, several sectors are classified as progressive. While the agricultural sector which has the largest contribution to the formation of Gowa GDP includes non-progressive sectors, as well as other sectors.

The next is quadrant analysis to see the values in proportional and differential shift.

Table 3 Quadrant Analysis Proportional and Differential Shift in the Economy of Gowa 2010 to 2017

<p>Quadrant I</p> <ol style="list-style-type: none"> 1) Electricity and gas procurement 2) Construction 3) Wholesale and retail trade; Car and Motorcycle Repair 4) Real Estate 	<p>Quadrant II</p> <ol style="list-style-type: none"> 1) Mining and Quarrying 2) Company Services
<p>Quadrant IV</p> <ol style="list-style-type: none"> 1) Agriculture, Forestry, and Fisheries 2) Water Supply, Waste Management, Waste and Recycling 3) Government Administration, Defense and Social Security Mandatory 	<p>Quadrant III</p> <ol style="list-style-type: none"> 1) Processing Industry 2) Transportation and Warehousing 3) Provision of Accommodation and Food and Drink 4) Information and Communication 5) Financial Services and Insurance 6) Educational Services 7) Health Services and Social Activities 8) Other services

Source: Results of Data Processing, 2019

Base on table 3.1 above, we can say that quadrant I is a sector with very rapid growth consisting of electricity and gas procurement, construction, wholesale and retail trade, car and motorcycle repair, and real estate. Quadrant II is a stressed but growing sector (highly potential industry) consisting of mining and management. Quadrant III which is occupied by many sectors that are depressed but tend to be potential. Meanwhile, quadrant IV consisting of agriculture, forestry, and fisheries, water supply, waste management, waste and recycling, government administration, defense, and social security has weak competitiveness (depressed industry).

In line with the results of the study (Institute, 2018) which states that generally, the economy in South Sulawesi underwent a transformation from the dominance of the agricultural sector to the service sector, even though the transition of labor was slower than the development of its GDP.

The results of this study indicate that the Gowa underwent an economic transformation from the potential sector to the progressive. The agriculture, forestry, and fisheries is a potential sector and has the largest contribution to Gowa GDP but is classified as a slow-moving economic sector, negative competitive advantage or has no high competitiveness, and is classified as a non-progressive economic. Economic sectors that move quickly, positive competitive advantage or have high competitiveness and are classified as progressive sectors are the electricity and gas procurement, the wholesale and retail trade, car and motorcycle repair, and real estate. This is supported by the theory of W Arthur Lewis and Hollis B Chenery (Todaro & Smith, 2000).

2. Base and Non-Base Sector in Gowa

This LQ analysis is to broaden the Shift-share analysis. The amount of LQ can be used as an initial indicator to see economic sectors as potential sectors and which influence regional economic growth and sectors that are not potential.

Table 4 Location Quotient (LQ) Value in Gowa 2010 to 2017

No.	Sectors	Location Quotient (LQ)								Average
		2010	2011	2012	2013	2014	2015	2016	2017	
1	Agriculture, Forestry & Fisheries	1.58	1.56	1.56	1.51	1.47	1.44	1.41	1.40	1.49
2	Mining and Quarrying	0.32	0.37	0.41	0.42	0.43	0.45	0.51	0.55	0.43
3	Processing Industry	0.50	0.49	0.48	0.46	0.45	0.45	0.45	0.47	0.47
4	Electricity & Gas Procurement	1.99	1.89	1.93	1.91	1.97	1.98	2.03	2.04	1.97
5	Water Supply, Waste Management & Recycling	1.12	1.15	1.14	1.12	1.12	1.12	1.11	1.10	1.12
6	Construction	0.75	0.78	0.79	0.90	0.89	0.88	0.89	0.89	0.85
7	Wholesale and Retail Trade, Car & Motorcycle Repair	0.79	0.79	0.80	0.81	0.84	0.83	0.83	0.82	0.81
8	Transportation&Trade	0.38	0.38	0.37	0.37	0.40	0.40	0.38	0.38	0.38
9	Provision of Accommodation & Food and Drink	1.80	1.78	1.73	1.73	1.76	1.78	1.76	1.74	1.76
10	Information&Communication	1.67	1.66	1.58	1.60	1.59	1.64	1.67	1.66	1.63
11	Financial Service& Insurance	0.65	0.67	0.69	0.66	0.66	0.67	0.67	0.66	0.67
12	Real Estate	1.54	1.56	1.65	1.75	1.89	2.04	2.09	2.15	1.83
13	Company Services	0.27	0.27	0.28	0.28	0.28	0.28	0.28	0.28	0.28
14	Government Administration, Defense & Mandatory Social Security	1.32	1.29	1.29	1.25	1.26	1.21	1.24	1.23	1.26
15	Education Services	0.88	0.87	0.88	0.86	0.85	0.85	0.84	0.83	0.86
16	Health Services& Social Activities	0.99	0.99	0.97	0.95	0.95	0.95	0.94	0.92	0.96
17	Another Services	1.10	1.11	1.12	1.08	1.07	1.07	1.04	1.06	1.08

Source: Data Processing Results

Based on the results of data processing in table 2.1, several sectors that have an LQ value > 1 include agriculture, forestry and fisheries, electricity supply and n gas, water supply, waste management, waste and recycling, provision of accommodation food and drink, real estate, and government administration, defense and mandatory social security. These sectors are the base and have the potential to be developed as an economic driving force in Gowa.

While other sectors that have an LQ value of < 1 are sectors that are less potential to be developed as economic drivers in Gowa. Even though is a non-base sector, but these are needed to support the development of the base sector. Thus the integration between the base and non-base sectors is an important element in encouraging economic growth in Gowa in the future.

Conclusion

1. The shift-share calculation results show that Gowa underwent an economic transformation from the potential to progressive sectors. The agriculture, forestry and fisheries sector is a potential aspect and has the largest contribution to Gowa GDP but is classified as a slow-moving economic sector, negative competitive advantage or has no high competitiveness, and is classified as a non-progressive economic sector.
2. Gowa economic sector is classified as a potential aspect, fast-moving, positive competitive advantage or has high competitiveness, and that classified as a progressive economic sector is the real estate and the electricity and gas procurement.

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