

An Analysis on Economic Structure and High Ranking Sectors of Deli Serdang Regency, Indonesia

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Abstract: The objective of the research was to determine regional economic and high ranking sectors in Deli Serdang Regency as the object of information and economic development planning. The data were secondary data with time series of Gross Domestic Product in Deli Serdang Regency, North Sumatera in the period of 2012-2016. The data were analyzed by using Klassen Typology, Location Quotient, and Shift Share analyses. The result of the research showed that the sectors which rapidly grow in the same sectors in Klassen Typology and Location Quotient analyses are procurement of electricity and gas, accommodation, and food and beverages. Klassen Typology is big commerce and retails, automobile and motorcycle repairs, financial service and insurance, and educational sector service. The other sectors in Location quotient are processing industry, construction sector, transportation, and housing. The result of shift share showed that the competitive sectors are forestry and fishery, agriculture, processing industry, electricity and gas procurement, construction sector, big commerce and retails, automobile and motorcycle repairs, transportation and housing, availability of alcoholic drink and food, financial service and insurance, real estate sector, government administration in commerce and social security, educational service sector, health service, and social activity.

Keywords: high ranking sector, klassen typology, location quotient, shift

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I. Introduction

Based on UU No.2 in 1999 that has changed with UUD No.32 in 2004 about the local government, it has the wide authority to manage the various affairs of government organizing for the important and the welfare of local society.

According to Sjafrizal (2008), he said that to measure the success of local economic development, there are several indicators which used as the instrument. The indicator which common used is PDRB (Produk Domestik Regional Bruto) or Gross Domestic Regional Product (GDRP). This indicator becomes the guidance of the performance economy as the measure of the regional progress. The other indicator is the growth rate, the income and the changes in economic structure.

Deli Serdang District is the one of thirty tree districts in Sumatera. Deli Serdang as the one of the autonomous area which has the authority to organize the government and the development along gives the service to the society. It represents the wide authority to manage, making plan and to exploit the potency economic optimally, that can be enjoyed to the whole community in Deli Serdang district.

Deli Serdang district consists of twenty two sub-district and 394 villages with the different potential in the each sub-district. The sub-districts are Gunung Meriah, Sinembah Tanjung Muda Hulu, Sibolangit, Kuta Limabu, Pancur Batu, Biru-Biru, Sinembah Tanjung Muda Hilir, Bangun Purba, Galang, Tanjung Morawa, Patumbak, Deli Tua, Sunggal, Hamparan Perak, Labuhan Deli, Percut Sei Tuan, Batang Kuis, Pantai Labu, Beringin, Lubuk Pakam and Pagar Mebau.

The economy of Deli Serdang district has dominated by the industrial sector as the main contributor which shown in the table 1 with the achievement 32% in 2016, and then it has followed by the construction sector 15,33%, the big and retail trading; the repairs of car and motorcycle 16,19% and the transportation and warehousing sector 9,24%. While, the other sectors have given the little contribution to the economy in Deli Serdang district (The central Agency of Statistics in Deli Serdang District, 2016).

Table 1. Disrtribution if Gross Domestic Regional Product at Applicable Price by Bussines Field in Deli Serdang District

No	Business Field	Year				
		2012	2013	2014	2015	2016
1	The Agriculture Forestry and Fishery	0,58	0,56	0,51	0,47	0,47
2	The Minning and Excavation	0,06	0,06	0,05	0,05	0,05
3	The Processing Industry	1,51	33,79	32,67	1,36	32
4	The Procurement of Electricity and Gas	0,01	0,01	0,01	0,01	0,01
5	The Water Supply, The Management of Waste and Recycle	0	0	0	0	0
6	The Construction	0,65	0,64	0,65	0,64	0,65
7	The Big and Retail Tranding; The Repairs of Car and Motorcycle	0,7	0,69	0,67	0,69	0,68
8	The Transportation and Warehousing	0,11	0,27	0,4	0,38	0,39
9	The Provision of Acomodation and Food Beverage	0,12	0,12	0,12	0,13	0,13
10	The Information and Communication	0,07	0,06	0,05	0,05	0,05
11	The Service of Financial and Insurance	0,14	0,13	0,14	0,14	0,15
12	Real Estate	0,14	0,15	0,15	0,16	0,17
13	The Service Company	0,03	0,03	0,03	0,03	0,03
14	The Government Administration of Trade and The Assurance of Social Compulsory	0,1	0,09	0,09	0,09	2
15	The Service of Education	0,09	0,09	0,08	0,08	0,08
16	The Service of Health and Social Activities	0,06	0,06	0,06	0,06	0,06
17	The Others Service	0,02	0,02	0,02	0,02	0,02
	PDRB	100	100	100	100	100

Source: The Central Bureau of Statistic in Deli Serdang District 2016

Deli Serdang districts have seventeen the bussines field which devided into three main sectors, they are the primary sector which consist of the agriculture forestry and fishery, the minning and excavation, the secondary sector consist of the processing industry, the procurement of electricity and gas, the water supply; the management of Waste and Recycle, the construction, and the last the tertiary sector consist of the big and retail tranding; the Repairs of car and motorcycle, the transportation and warehousing, the provision of acomodation and food beverage, the information and commutation, the service of financial and insurance, the real estate, the service of health and social activities, and the other service.

The shift of economic structure that happenend as the impact of the economic growth process. Wiwekanada (2016) said that the grade of structural changes and the high sectoral is related to the growth of economic process. The ecomony sector is not only give the impact to the Gross Domestic Regional Product and the absortion rate but also have the important role in the growth of economic process (Suharyadi, et.al., 2012).

The diversity of the area have caused unusual policy simultaneously in doing the development. In the setting of policy, it has needed the confirmations with the condition of local area dan the different treatment between area. The areas that has the potential to be developed, it must be indetified and recognized amog their regions, it have strengthened the chain of economic development, socio-cultural and sustainable and fair.

II. Research Method

The Scope of Research

This research was quantitative by using the time series data which predicted the chages of economic structure as well as the development for the leading sectors in Deli Serdang District, if it seen from the criteria of contribution to GDRP. This research was also to analyze the leading sectors that can be developed in order to had the higher compotitiveness in Deli Serdang District by using GDRP in 2012-2016.

Types and Source of The Data

The data used in this research was the secondary data, among others:

1. GDRP of DeliSerdang District in the period 2011-2016. The data used to analyze the classification of the growth sector, the change analysis, and the shift of economic sector and the base and the superior sector. The data wasa taken from the central bureau of statistic in Deli Serdang district.
2. In addition to the data of written reports, the data found from any informations and references, the various sources, mass media and internet.

III. Result and Discussions

The Sectors were Became The Base Sector and The Superior Sector in The Economy of Deli Serdang District

Location Quotient (LQ) analysis used to know which one of the economy sector was included in the base sector or had has the potentially export, and which one of the economy sector was included in the non-base sector. If the result of calculating showed that number more than one, ($LQ > 1$), it means the sector was in the base sector. Instead, if the result showed that number lees than one ($LQ < 1$), it means the sector was in the non-base sector. It can be seen in the following table.

Table 2. The Calculations of Index Location Quotient (LQ) in Deli Serdang District 2012-2016

Business Field	Year					LQ Average
	2012	2013	2014	2015	2016	
A The Agriculture Forestry and Fishery	0,54 (nb)	0,52 (nb)	0,5 (nb)	0,5 (nb)	0,5 (nb)	0,51 (nb)
B The Minning and Excavation	0,81 (nb)	0,65 (nb)	0,6 (nb)	0,6 (nb)	0,6 (nb)	0,67 (nb)
C The Processing Industry	1,74 (b)	1,6 8 (b)	1,6 (b)	1,7 (b)	1,6 (b)	1,67 (b)
D The Procurement of Electricity and Gas	1,02 (b)	1,10 (b)	1,1 (b)	1,1 (b)	1,1 (b)	1,10 (nb)
E The Water Supply, The Management of Waste and Recycle	0,51 (nb)	0,49 (nb)	0,5 (nb)	0,5 (nb)	0,5 (nb)	0,48 (nb)
F The Construction	1,29 (b)	1,23 (b)	1,2 (b)	1,2 (b)	1,2 (b)	1,22 (b)
G The Big and Retail Tranding; The Repairs of Car and Motorcycle	0,97 (nb)	0,95 (nb)	0,9 (nb)	0,9 (nb)	0,9 (nb)	0,95 (nb)
H The Transportation and Werehousing	0,45 (nb)	1,19 (b)	1,8 (b)	1,7 (b)	1,8 (b)	1,38 (b)
I The Provision of Acomodation and Food Beverage	1,21 (b)	1,17 (b)	1,2 (b)	1,2 (b)	1,2 (b)	1,17 (b)
J The Information and Communication	0,66 (nb)	0,63 (nb)	0,6 (nb)	0,6 (nb)	0,6 (nb)	0,62 (nb)
K The Service of Financial and Insurance	0,86 (nb)	0,91 (nb)	0,9 (nb)	0,9 (nb)	0,9 (nb)	0,88 (nb)
L Real Estate	0,80 (nb)	0,78 (nb)	0,8 (nb)	0,8 (nb)	0,8 (nb)	0,78 (nb)
M,N The Service of Company	0,52 (nb)	0,50 (nb)	0,5 (nb)	0,5 (nb)	0,5 (nb)	0,50 (nb)
O The Government Administration of Trade and The Assurance of Social Compulsory	0,61 (nb)	0,59 (nb)	0,6 (nb)	0,6 (nb)	0,6 (nb)	0,58 (nb)
P The Service of Education	0,88 (nb)	0,86 (nb)	0,8 (nb)	0,8 (nb)	0,9 (nb)	0,86 (nb)
Q The Service of Health and Social Activities	1,04 (b)	1,01 (b)	0,1 (nb)	1,0 (b)	1,0 (b)	0,83 (b)
R,S,T,U The Others Service	0,58 (nb)	0,56 (nb)	0,5 (nb)	0,5 (nb)	0,5 (nb)	0,55 (nb)

Source: CBS, GDRP Deli Serdang District

Gloss : (b) : The base sector
(nb) : The non-base sector

Based on the table above, it can be indentified that the sector whichever sectors in the base and non-base sector in Deli Serdang District. There are five sectors which is identified as the basis sector, the sector is the processing industry sector with an average LQ index of 1.67, the procurement of electricity and gas sector with an average LQ index of 1.10, the construction sector with LQ index of 1.22, the transportation and warehousing sectors with an average LQ index of 1.38, the accommodation and food beverage sector with an average LQ index of 1.17.

This indicates that the five sectors are the basis sector which illustrates that the sector possesses has a good economic strength and greatly affects to the economic growth of the Deli Serdang district, and these sectors are able to fulfill the needs in their areas that even have the potential to export. On the basis of the results of analysis above that these sectors are potential sectors to be improved into a better sector in the future.

The sectors as the non-base sector during the period 2012-2016 there are 12 sectors namely, the agriculture forestry and fishery with an average LQ of 0.51; the minning and excavation sectors with an average LQ of 0.67; the water supply, the management of waste and recycle with an average LQ of 0.48the big and retail trading; the repairs of car and motorcycle sectors with an average LQ of 0.95; the information and communication sector with an average LQ of 0.62; the service of financial and insurance sector with an average LQ of 0.88; Real Estate sector with an average LQ of 0.78; the Services of company sector with an average LQ of 0.50the government administration of trade and the assurance of social compulsory with an average LQ of 0.58; the services of education sector with an average LQ of 0.86; the service of health and social activities with an average LQ of 0.83; other sectors with an average LQ of .55. These twelve sectors in production still have not been able to meet the needs of the economy in Deli Serdang District even to meet the needs that are inside, it must import from outside the region, in order to cover or meet the needs that are inside.

The Shift of Economic Sector in Deli Serdang District

Shift Share analysis is used to know the growth of economic process of a region in relation to the regional economy with reference to its broader territory, in this case is the area of Deli Serdang District that is associated with the province of North Sumatera. To know the growth of economy process of an area by using Shift Share analysis, it uses the important variable like labor, population, and income. In this study used the income variable the Classification of economic growth in Deli Serdang District, it was GDRP to describe the growth of economic of Deli Serdang District.

Table 3. The Last Calculations of *Shift Share* (SS) The Economic Sector in Deli Serdang District Over The Constant Account 2012-2016

Business Field	National share (Ns)	Proportional Share (Ps)	Differential Shift (Ds)	Total Δ
A. The Agriculture Forestry and Fishery	367.472,68	-35.917,86	1.646.822,27	1.978.377,09
B. The Minning and Excavation	24.296,30	22.928,28	-4.900.749,38	-4.853.524,79
C. The Processing Industry	962.567,48	-249.037,41	4.922.660,69	5.636.190,75
D. The Procurement of Electricity and Gas	4.302,78	-1.925,87	19.568,12	21.945,02
E. The Water Supply, The Management of Waste and Recycle	1.319,25	212,04	-2.301.788,15	-2.300.256,86
F. The Construction	426.432,15	76.825,04	-308.888,84	194.368,35
G. The Big and Retail Tranding; The Repairs of Car and Motorcycle	476.171,38	23.883,46	1.391.515,05	1.891.569,89
H. The Transportation and Warehousing	168.885,93	22.614,30	1.665.840,40	1.857.340,63
I. The Provision of Acomodation and Food Beverage	73.441,94	21.233,35	171.675,30	266.350,59
J. The Information and Communication	43.739,14	17.074,58	-216.276,34	-155.462,62
K. The Service of Financial and Insurance	79.271,95	4.812,39	-36.616,87	47.467,47
L. Real Estate	91.079,21	15.185,68	457.064,67	563.329,55
M,N. The Service of Company	12.363,75	2.114,35	-223.719,57	-209.241,47
O. The Government Administration of Trade and The Assurance of Social Compulsory	55.302,61	-9.270,75	21.849,73	67.881,59
P. The Service of Education	49.071,69	6.353,82	128.718,58	184.144,10
Q. The Service of Health and Social Activities	20.090,34	9.959,56	111.418,65	141.468,55

R,S,T,U. Service	The Others	7.706,55	2.192,08	-15.592.540,47	-15.582.641,84
Total		2.863.515,14	-70.762,95	13.043.446,18	15.836.198,36

Source:: CBS, GDRP Deli Serdang District and Province of North Sumatera

Based on the table above that the growth of proportional shift component of Deli Serdang District in 2012-2016, it is neither positive nor negative. The positive value, it has the adequate economy Deli Serdang District which is specializing in the same sector with a fast growing in the economy in Province of North Sumatera. Conversely, the P_s value is negative, it means that the economy in Deli Serdang District is segmented in the same sector and experiencing the slow growth in the economy in Province of North Sumatera.

The Classification of The Growth Economic Sector in Deli Serdang District

The method of *Klassen* Tipology is used to know the grouping of economic sector in Deli Serdang District according to its growth sector. By using the *Klassen* matrix can be done four grouping sector by exploiting the growth rate and the contribution value.

The table shows that the sector with the largest average contribution to GRDP of Deli Serdang District is the processing industry sector, followed by The big and retail trading; the repairs of car and motorcycle, the Construction sector and the agriculture forestry and fishery. For the average growth, the Transport and Warehousing sectors, followed by the Services of Financial and Insurance sectors, the service of health and social activities sector, the Real Estate sector and the provision of accommodation and food beverage. While the sector has the smallest average growth, although nothing negative is the agriculture forestry and fishery. In Table 5, it can be classified the sector of GRDP Deli Serdang District Year 1995-2009 based on *Klassen* Tipology as listed in Table below.

Table 4. The Classification of GDRP Secotr Delia Serdang District in 2012-2016 based on *Klassen* Tipology

Quadrant I	Quadrant II
Developed Sector $S_i > s$ dan $s_k > s_k$	Stagnant Sector $s_i < s$ dan $s_k > s_k$
- The Procurement of Electricity and Gas Sector	- The Mining and Excavation Sector
- The Big and Retail Trading; The Repairs of Car and Motorcycle Sector	- The Processing Industry Sector
- The Provision of Acomodation and Food Beverage Sector	- The Construction Sector
- The Service of Financial and Insurance Sector	- The Transportation and Werehousing Sector
- The Service of Education Sector	- The Infomation and Communication Sector
	- The Service of Financial and Insurance Sector
	- The Other Service
Quadrant III	Quadrant IV
Developing Sector $s_i > s$ dan $s_k < s_k$	Undeveloped Sector $s_i < s$ dan $s_k < s_k$
- The Water Supply, The Management of Waste and Recycle Sector	- The Agriculture Forestry and Fishery
- Real Estate Sector	
- The Service Company Sector	
- The Government Administration of Trade and The Assurance of Social Compulsory Sector	

In accordance with the results of the analysis in Table 5 of GRDP of Deli Serdang district, there are five sectors that grow and progressive, namely the procurement of electricity and gas, the big and retail trading; the repairs of car and motorcycle, the provision of accommodation and food beverage, the service of financial and insurance, the service of education, as well as the potential sectors to advance as many as four sectors namely the water supply, the management of waste and recycle, Real Estate Sector, the Service Company, and The Government Administration of Trade and The Assurance of Social Compulsory Sector. Meanwhile, the sector that is advanced but depressed there is one sector that is the agriculture forestry and fishery sector. at the same time, there are 7 sectors in the sectors which are the minning and excavation sector, the processing industry, the construction sector, the transportation and werehousing sector, the information and communication sector, the service of health and social activities, other service sectors. From the results of the analysis above, it can be stated that the sectors which grow and develop in Deli Serdang district are mostly classified into the advanced and developing sectors as well as prospects to be developed, so it can be said as a relatively developed region.

IV. Conclusions

The research was conducted about the analysis of the determination of the sector of the regional economy of Deli Serdang District with the approach of the GDRP forming sector can be determined into some conclusions. That were:

1. For determination of the base and non base sector in region economy of Deli Serdang District by using the calculation result of *Location Quotient* (LQ), the sector which is base sector ($LQ > 1$), there were the processing industry sector, the procurement of electricity and gas sector, the construction, the transportation and warehousing sectors, and the sector of the accommodation and food beverage. Meanwhile, the sectors belonging to the non-base sector were the agriculture forestry and fishery sectors, the water supply; management of waste and recycle sectors, the big and retail trading; reparations of cars and motorcycles, the information and communications sector, and the services of financial and insurance sector. For sectors categorized into the leading sectors based on the results of analysis using three tools with sector criteria included in the category of advanced and growing rapidly, the basic and competitive sectors were the transportation and warehousing sectors, and the sector of accommodation and food beverage.
2. The result of shift share analysis showed that the sectors which were the competitive sectors, namely, the big and retail trading; reparations of cars and motorcycles, the transportation and warehousing sectors, the sector of accommodation and food beverage, real estate, the services sector, and the service of education sector, the service of health and social activities.
3. The classification of the growth of economic sector of Deli Serdang District by using result of Klassen Typology analysis method showed that advanced and fast growing sector (quadrant I) were the procurement of electricity and gas, the big and retail trade sector and repair of car and motorcycle, the sector of accommodation and food beverage, the services of financial and insurance sector, and the services of education sector. The advanced but depressed sectors (quadrant II) were the mining and excavation sector, the processing industry sector, the construction and warehouse sector, information and communication sector, the services of health and social activities, and other services sectors. Potential sector or still able to developing (quadrant III) were the water supply; the management of waste and recycle, real estate sector, the service of company and the government administration of trade and the assurance of social. The relatively lagging sectors (quadrant IV) was the agriculture of forestry and fishery sectors.

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