

## Is Industrial Sector Really Superior In Central Java?

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### ABSTRACT

This research aimed to analyze typology and potential sector in Regency/City of Central Java Surakarta. Data employed was secondary one deriving from BPS (Central Bureau of Statistics) and Financial Balance Directorate of Financial Ministry. The method employed was Klassen's Typology analysis, Static Location Quotient (SLQ) and Dynamic Location Quotient (DLQ). The result of analysis using Klassen's Typology showed that there were 5 Regencies/Cities belonging to 1<sup>st</sup> quadrant or high growth and high income, 5 to 2<sup>nd</sup> quadrant or high income but low growth, 15 to high growth but low income, and 9 to 4<sup>th</sup> quadrant or low growth and low income regions. Meanwhile, the result of SLQ and DLQ analysis showed that Processing Industry Sector is the only sector belonging to Superior Category. Agricultural, Forestry, and Fishery sector, Wholesale and Retail Trading, automobile and motorcycle repairing belonged to prospective categories. Based on this research, it can be concluded that government should give special attention to non-base sectors in order to be more optimal. The way that the road of infrastructure so it can connect to District/Cities in Central Java for facilitating the distribution of goods needed by the community.

**Keywords:** Klassen's typology, Static Location Quotient, Dynamic Location Quotient, Economic Growth of Central Java

### INTRODUCTION

Local autonomy in Indonesia gives the regional head some of authority to determine program and activity corresponding to his/her people's need (Tiebout, 1956; Oates, 1999). Such regulation is included into the Law No.22 of 2014 about Local Government. The law contains a regulation about the region's right and the authority to organize and to plan its economy as maximally as possible.

Central Java is one of Provinces in Central Java flanked with two large provinces: West Java and East Java. Central Java lies between 5°40' and 8°30' South Latitude and between 108°30' and 111°30' East Longitude. Central Java consists of 35 Regencies/Cities: 29 Regencies and 6 Cities (BPS, 2018) .

**Figure 1.1 Map of Central Java**



**Source: Central Bureau of Statistics (2016)**

A region's potential economy should be explored and utilized effectively and efficiently to support economic development. Economic development, in addition to being concentrated qualitatively, also takes its qualitative aspect into account. Some factors contribute to the successful development qualitatively: human resource, production raw material, production performance, and etc. Todaro (2000) said that development has several objectives: to improve the availability and to expand the distribution of basic need products, to improve the human's standard of life, and to expand economic and social preferences for every individual.

Local economic development emphasizes on the policies building on the local resource potency, including human and natural resources existing in individual regions. The resource a region has is commonly attributed with two sectors: developed region with industrial sector and developing region with agricultural sector. In this case, developing countries like Indonesia should not abandoned agricultural sector because most of Indonesian areas have highly potential agricultural sector.

Agricultural and industrial sectors in Central Java have large potency to develop. During 2011 – 2015, agricultural sector contributed 15.66% of GDP. Meanwhile, industrial sector contributed 35.17% of GDP in Central Java during 2011-2015 (Central Bureau of Statistics, 2016). Agricultural sector is basic sector in GDP, but the contribution of industrial sector is higher than that of agricultural sector in Central Java. Fajar (2016) studying the superior sector in Waropen Regency found that the sectors contributing considerably to Waropen's economy are Agricultural, Services, and Construction sectors. Similarly, Zulha and Santoso (2013) in their study on the Regency/City's spatial correlation in East Java based on its superior sector found that there are three superior sectors: Agricultural, Processing Industry, and Trade.

Considering this phenomena, a study on economic potency in the form of superior sector should be conducted to plan the local development in Central Java in the future, particularly in implementing local autonomy or fiscal decentralization policy. For that reasons, this study aims to identify the economic condition of Central Java Province in local autonomy era; therefore this article is organized in two sections elaborating potential economy of Central Java using Klassen's Typology, Static Location Quotient (SLQ), and Dynamic Location Quotient

(DLQ) and analyzing potential sector in Central Java in local autonomy era. Finally, policy recommendations are given.

## THEORETICAL FRAMEWORK

### Literature Review

Alhowaish, et al. (2013) in his research entitled "Location Quotient Technique and Economy Analysis of Region: Tabuk Province of Saudi Arabia as a Case Study" explained that economic activity in Tabuk Province area, belonging to "High Location Rate" recommending the Ministry of Economy and Planning to focus on sectors that can help improve the growth in Tabuk Province.

Elysanti, et al.'s (2015) study entitled "Analysis on Typology and Potential Sector in Sub Districts in Jember Regency" using Klassen's typology found that the rapidly developing areas included: Kaliwates, Sumbersari and Patrang Sub District, but in late 2013, some sub districts experiencing improvement as indicated with the ever increasing growth rate and per capita GDP, thereby belonging to 1<sup>st</sup> quadrant were: Puger Wuluhan, Ambulu, Tanggul, Bangsalsari and Sumberbaru. However, there is also a sub district, the economy of which belongs to relatively underdeveloped category, namely Panti Sub District.

### Definition

#### *Economic Growth:*

Classical economists such as Thomas Robert Malthus, Adam Smith, David Ricardo and John Stuart Mill suggested that there are four factors affecting the economic growth: population number, capital good stock number, land width and natural wealth, and level of technology used (Sukirno, 2006).

#### *Basic and Non-basis Economic Theories*

There several main factors affecting a region's economic growth, one of which is the direct relation to product and service demand from outside area (Arsyad, 1999). There are two sectors in local economic structure:

Basic sector is an economic sector or activity catering to either domestic (internal) or external market. The region should be able to meet its own need and other region's need to be superior sector.

Non-basic sector is an economic sector that should be able to meet the local need or a non-superior sector.

Basic and non-basic sectors of a region can be identified using Location Quotient (LQ) analysis. LQ is used to find out the specialization level of basic or superior sector by means of comparing its role in local economy with the similar role of activity or industry in regional economy (Emilia, 2006).

#### *Potential Economic Sector*

Tjokroamidjojo (1993) suggested that potential economic or superior sector can be defined as economic sector or productive business activity developed as a potential development and can be a region's economic basis compared with other sectors in either direct or indirect relation.

#### *Political Economic Theory*

Strailand in Deliarnov (2006) suggested that political economy is a study on social theory and underdevelopment. Originally, political economy is intended to recommend the management of economic problem to the state's organizer. Political economy is defined by New Political

Economist as an economic analysis on political process. In this case, they study political institutions as the existence pertaining to political economic decision attempting to affect decision making and public choice, for either group's or community's interest.

### RESEARCH METHOD

This research employed quantitative approach with panel analysis instrument. All data obtained was processed and analyzed using Stata 13 program. The data employed in this study was secondary one obtained from Central Bureau of Statistics (BPS) and Financial Balance Directorate General of Financial Ministry.

#### Data Analysis

##### *Klassen's Typology*

An analysis using Klassen's Typology is an instrument analysis used to find out the representation of economic pattern and structure in some areas respectively (Sjafrizal, 2008). Klassen's typology is generally used to compare a region's development (advancement) level and others'.

Kuncoro (2015) suggested some criteria to be used in Klassen's Typology: high growth and high income, high income but low growth, high growth but low income, and low growth and low income regions.

##### *Static Location Quotient (SLQ)*

Static Location Quotient (LQ) analysis method is used to identify superior or basic sectors in a region by comparing its role in local economy with the role of similar activity or sector in national economy. SLQ formula is as follows:

$$SLQ = \frac{\frac{S_i}{S}}{\frac{N_i}{N}} \dots\dots\dots (1.0)$$

Where:

Slq: Location Quotient value

Si: GDP of i sector in Central Java Province

S: Total GDP in Central Java Province

Ni: national GDP of I sector

N: Total national GDP

Considering the result calculation using *Static Location Quotient (SLQ)* in the region, some criteria will be yielded:  $SLQ > 1$ , basic sector and  $SLQ < 1$ , non basic sector.

##### *Dynamic Location Quotient (DLQ)*

Dynamic Location Quotient (DLQ) is an analysis method used to determine the basis sector that will arise in the future in potential sector (Suyanto, 2000). DLQ formula is written as follows:

$$DLQ_{ij} = \left( \frac{(1 + g_{ij}) / (1 + g_i)}{(1 + G_i) / (1 + G)} \right)^t$$

Where:

$g_{ij}$  = Growth rate of i sector in j Province in X State

$g_i$  = Mean growth rate of all sectors in j Province

$G_i$  = Growth rate of i sector in X State

$G$  = Mean growth of all sectors in X State

$t$  = Difference between early and late years

**Criteria:**

DLQ > 1: meaning that the growth rate of  $i^{th}$  sector compared with the Region’s GDP still can be the basic one in the future.

DLQ < 1 : meaning that the growth rate of  $i^{th}$  sector compared with the Region’s GDP still can not be expected to be the basic one in the future.

DLQ = 1 : meaning that the growth rate of  $i^{th}$  sector is comparable to the Region’s GDP

A combination of SLQ and DLQ values provides the following criteria:

**Table 1.1 Combination of SLQ and DLQ Analysis**

		DLQ	
		>1	< 1
SLQ	>1	Superior	Prospective
	< 1	Mainstay	Less prospective

**DISCUSSION**

**Klassen’s Typology Analysis**

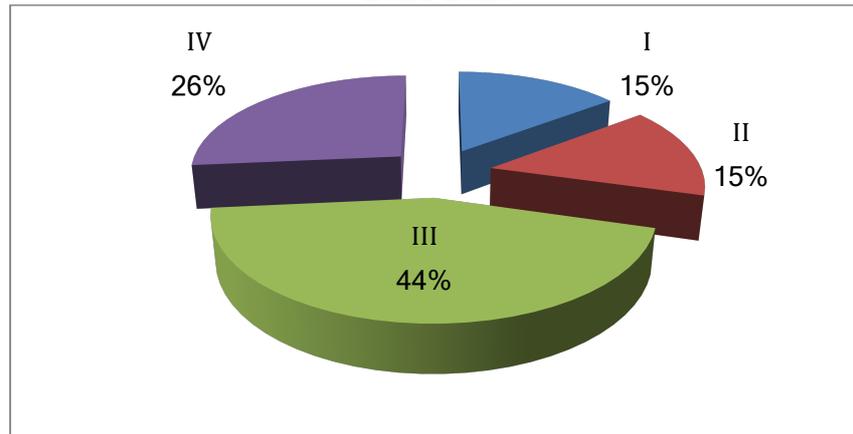
Klassen’s Typology analysis classifies Regencies/Cities in Central Java Province into four quadrants: high growth and high income, high income but low growth, high growth but low income, and low growth and low income regions. The result of analysis using Klassen’s Typology in Regencies/Cities in Central Java Province is presented in table below.

**Table 1.2 Result of Analysis on Klassen’s Typology of Regencies/Cities in Central Java Province during 2011-2015**

<p><b>1<sup>st</sup> Quadrant</b> Sukoharjo Regency, Semarang Regency, Kendal Regency, Magelang City, Tegal City. Surakarta City</p>	<p><b>2<sup>nd</sup> Quadrant</b> Cilacap Regency, Karanganyar Regency, Kudus Regency, Salatiga City, Semarang City</p>
<p><b>3<sup>rd</sup> Quadrant</b> Banyumas Regency, Banjarnegara Regency, Kebumen Regency, Purworejo Regency, Magelang Regency, Boyolali Regency, Klaten Regency, Sragen Regency, Pati Regency, Batang Regency, Pemalang Regency, Tegal Regency, Brebes Regency, Pekalongan City.</p>	<p><b>4<sup>th</sup> Quadrant</b> Purbalingga Regency, Wonosobo Regency, Grobogan Regency, Blora Regency, Rembang Regency, Jepara Regency, Demak Regency, Temanggung Regency, Pekalongan Regency,</p>

**Source: Result of Klassen’s Typology (Processed)**

Table 1.2 shows that there are several Regencies/Cities belonging to I, II, III, and IV quadrants in 2011-2015. Most Regencies/Cities in Central Java belong to 3<sup>rd</sup> quadrant (high growth but low income Region category). However several Regencies/Cities still belong to the 4<sup>th</sup> quadrant: Purbalingga, Wonosobo, Grobogan, Blora, Rembang, Jepara, Demak, Temanggung, and Pekalongan Regencies. The low economic growth and the high development discrepancy between Regencies/Cities make the economy relatively underdeveloped; therefore the government should develop those regencies in the future in order to obtain non-relatively low per capita income thereby can promote those regencies.

**Chart 1.1. Proportion of Klassen's Typology in Regencies/Cities in Central Java Province during 2011-2015**

**Source: Result of Klassen's Typology (processed)**

The result of Klassen's typology calculation on Regencies/Cities in Central Java Province during 2011-2015 shows that 3<sup>rd</sup> quadrant dominates Central Java Province with 44% or 15 Regencies/Cities of total Regencies/Cities number in Central Java Province. Meanwhile, 1<sup>st</sup> quadrant contains only 15% or 5 Regencies/Cities in Central Java Province: Sukoharjo Regency, Semarang Regency, Kendal Regency, Magelang City and Tegal City. Sukoharjo Regency belongs to 1<sup>st</sup> quadrant category as it is well-known for its agricultural productivity, craft, and medicinal herb (*jamu*) production. In addition, Sukoharjo Regency also has textile factory, Sritex.

#### **Static Location Quotient (SLQ) and DLQ (Dynamic Location Quotient) Analysis**

*Static Location Quotient* (SLQ) analysis is used to find out the role of a sector in a region compared with that at local level. The analysis is intended to find out whether the potency of a region belongs to basic or non-basic sector. If SLQ value  $> 1$ , the region belongs to basic or commodity sector, while if SLQ value  $< 1$ , the region belongs to non-basic or non-commodity sector.

Superior sector is varying between one region and another in the term of its number or types, dependent on (natural, human, capital, and other) resources and potencies a region has. In addition, infrastructure and supporting policy also affects the development of superior sector. Superior sector will contribute fairly to the local economic growth. The more the contribution of it to GDP, the larger is the role of the sector in its local development. The result of SLQ and DLQ analysis on Central Java Province is presented in the table below.

**Table 1.3 Mean SLQ and DLQ scores of Central Java Province during 2011-2015**

No.	Business Field	SLQ	DLQ
1	Agricultural, Forestry, and Fishery	1.09	0.77
2	Mining and Exploration	0.15	1.25
3	Processing Industry	2.57	1.15
4	Electricity and Gas Procurement	0.01	1.35
5	Water Procurement, Rubbish and Waste Management and Recycling	0.01	0.36
6	Construction	0.74	0.76
7	Wholesale and Retail Trades; Automobile and Motorcycle Repairing	1.07	0.94
8	Transportation and Warehousing	0.23	1.04
9	Accommodation, Food and Beverage	0.22	1.03
10	Information and Communication	0.27	0.95
11	Financial Service and Insurance	0.20	0.68
12	Real Estate	0.13	1.15
13	Company Service	0.02	1.10
14	Public Administration, Defense, and Compulsory Social Security	0.21	0.72
15	Education Service	0.25	1.79
16	Health Service and Social Activity	0.05	1.15
17	Other Services	0.11	0.68

**Source: Result of SLQ and DLQ analyses (processed)**

The result of combination between SLQ and DLQ analyses classifies economic sector into four categories: superior, prospective, mainstay, and less prospective. Processing industrial sector is the only sector belonging to Superior category. Agricultural, Forestry, and Fishery; Wholesale and Retail Trades, Automobile and motorcycle repairing sectors belong to prospective category. The mainstay sector in Central Java includes Mining and Exploration; Electricity and Gas Procurement; Transportation and Warehousing; Accommodation and Food and Beverage; Real Estate; Company Service; Education Service; Health Service and Social Activity sectors. Meanwhile, the sector belonging to less prospective category includes: Water Procurement, Rubbish, Waste Management, and Recycling; Construction; Information and Communication, Financial Service and Insurance; Public Administration, Defense, and Compulsory Social Security; and other services. Considering the elaboration above, the government should be able to improve the sectors belonging to less prospective category in order to improve the economic growth and to promote the region.

## CONCLUSION AND SUGGESTION

### Conclusion

- 1) The result of Klassen's typology of Regencies/Cities in Central Java Province during 2011-2015 shows 5 regencies/cities 5 belonging to high growth and high income, 5 to high income but low growth, 15 to high growth but low income, and 9 to low growth and low income regions.
- 2) Considering the result of calculation using SLQ and DQL formulas, economic sector is classified into four categories:
  - a) Superior category: Processing industrial sector is the only sector belonging to superior category
  - b) Prospective Category: Agricultural, Forestry, and Fishery; Wholesale and Retail trades, automobile and motorcycle repairing.
  - c) Mainstay Category in Central Java Province includes Mining and Exploration, Electricity and Gas Procurement; Transportation and Warehousing; Accommodation and Food and Beverage; Real Estate; Company Service; Education Service; Health and Social Activity Service.
  - d) Less prospective category includes: Water Procurement, Rubbish, Waste Management and Recycling; Construction; Information and Communication, Financial Service and Insurance; Public Administration, Defense and Compulsory Social Security; other services.

### Suggestion

The government should give special attention to non-base sectors in order to be more optimal. The way that the road of infrastructure so it can connect to District/Cities in Central Java for facilitating the distribution of goods needed by the community.

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