

Analyzing Regional Potentialities to Encourage Economic Growth of Sidoarjo Regency

Khubbi Abdillah¹

¹*Doctoral Study Program, Faculty of Economics and Business,
Universitas Airlangga, Surabaya, Indonesia*

ABSTRACT

This study aims to analyze regional potentialities owned by Sidoarjo Regency by developing sectorial planning to identify which sectors are categorized as leading sectors and generating developmental strategies applied in the region. In this study, the writers apply Location Quotient (LQ) method, Specialization Index method, and Shift Share Analysis. The result of the analysis indicates that the air transportation sector is the highest leading sector owned by the region while wholesale, retail, and car and motor reparation are the most competitive sectors of the region. Based on result of analysis on each leading sector, Sidoarjo Government can generate developmental strategies for each sector so that these leading sectors can improve economic growth in the region.

Keywords: *Leading Sectors, Competence, LQ, Specialization Index, Shift Share Analysis*

I. INTRODUCTION

Economic growth cannot happen naturally. It requires consistent efforts made by all parties. Jhingan (2004) stated that the goal of economic growth is to develop an adequate scale capital tool to improve productivity in agriculture, mining, plantation, and industry sectors. The capital is also required to build infrastructure facilities, such as roads, drainage system, clean water, electricity, telephone line, etc. Among the challenges and obstacles in building infrastructures in many regions are high cost, low recovery rate cost, regional government allocates small amount of funding in building infrastructure, and problems in transferring land rights for infrastructure procurement.

Regional development can be carried out through sectoral approach focusing on choosing which economic sectors owned by the region can be used as motor that generates economic activities in the region. Every region has its own economic advantages and potentialities serving as sources of economic growth in the region. In order to assure that regional potentialities owned by a region are well developed according to the goals of regional development, the development of regional potentialities should be integrated and conducted continuously to improve economic productivity of the region. Ability to encourage the economic growth of a region depends on the advantages and competence owned by economic sectors of the region (Rustiadi et al, 2009). Economic growth of a region also correlates with comparative advantages and regional specializations to be explored and developed further to implement sustainable development for the region (Arsyad, 1999).

Sidoarjo Regency consists of 18 districts, namely Sidoarjo, Buduran, Candi, Porong, Krembung, Tulangan, Tanggulangin, Jabom, Krian, Balongbendo, Wonoayu, Tarik, Prambon, Taman, Waru, Gedangan, Sedati, and Sukodono. Sidoarjo Regency is the hinterland of Surabaya Municipality as the core region of East Java Province. Population of Sidoarjo Regency is unevenly distributed. Several districts are densely populated while the others are scarcely populated. Sidoarjo is one of the autonomous regions owning its own authorities to manage, plan, and utilize its own economic potentialities optimally.

Table 1.1: Economic Growth Rate Based on 2010 Constant Price and Gross Regional Domestic Product (GRDP) of Sidoarjo Regency (in thousand IDR) from 2011-2014

Year	Economic Growth	GRDP Per capita
2011	7,04	43972,76
2012	7,26	46377,29
2013	6,88	48791,68
2014	6,18	50940,64

Source : BPS Sidoarjo

Table 1.1 above indicates that the Gross Regional Domestic Product (GRDP) of Sidoarjo Regency increases annually as the increasing of its population. This indicator suggests that every resident of Sidoarjo

Regency contributes to GRDP of the region (i.e. each resident contributes a sum of gross value added as much as value per capita of economic activities he/she conducts). The economic condition in Sidoarjo Regency is recovering after influenced by the global economic crisis in 2008 as indicated by increasing GRDP and positive economic growth (BPS, 2015). GRDP refers to the total sum of gross value added as the result of economic activities carried out in a region. Therefore, the amount of GRDP in certain period often serves as an indicator in assessing economic performance of a region, especially related to the capability of a region in managing its own resources.

The aim of this study is to analyze regional potentialities based on the contribution of the leading sectors towards economic growth in Sidoarjo Regency. This goal becomes achievable by identifying the basis sectors of economics in Sidoarjo Regency and by identifying competitive advantages of economic sectors in Sidoarjo Regency.

II. THEORETICAL FRAMEWORK

Economic Base Theory

Economic base theory is established on the idea that economic growth rate of a region is determined by the increasing export rate of the region. Economic activities carried out by the residents of the region is categorized into basis activities and non-basis activities. Only the basis activities can encourage economic growth of the region (Tarigan, 2012: 28).

In terms of regional economy, export refers to selling products or services outside the region; either it is selling the products/services to other regions in the same country or selling the products/services abroad. Laborers domiciled in one region but working and get paid in another region includes as export category. Principally, export activities carried out by the producers and service providers that result in income from other regions are categorized as basis activities. Employment and income of the basis sectors are the function of exogenous demand (i.e. not depending on internal forces or local demand).

Location Quotient (LQ)

One of indicators describing the condition of basis sector is Location Quotient (LQ) index. LQ index is a simple indicator describing the potentiality or how strong the effect of certain sector in a region compared to the effect of the same sector on the other higher regions or the reference region. The LQ index of a sector within regional can be measured through value added or Gross Regional Domestic Product approach. The measurement can be expressed according to the following formula:

$$LQ = \frac{V_i/V_t}{Y_i/Y_t}$$

Note:

V_i = Gross Regional Domestic Product of the i sector in the lower region

V_t = Total Gross Regional Domestic Product in the lower region

Y_i = Gross Regional Domestic Product of the i sector in the higher region

Y_t = Total Gross Regional Domestic Product in the higher region.

Literatures on regional economy define the basis sectors that becomes potentiality of a region to export its products to other regions are the sectors with LQ index higher than 1 ($LQ > 1$). On the other hand, if the LQ index of a sector is lower than 1 ($LQ < 1$) indicating that the sector imports the products from other regions. Meanwhile, if the LQ index equals to 1 ($LQ = 1$) the sector tends to be closed because of carrying out transactions in the region and on to other regions. However, this condition is very rare on regional economy (Kuncoro, 2014).

Specialization Index (SI)

Specialization Index (SI) analysis is one of methods in measuring general behavior of economic activities, for example measuring the rate of Gross Regional Domestic Product in certain region. The approach applied in measuring SI is similar to the approach applied in measuring LQ index, namely through the value added. The conclusion drawn from SI is that the higher SI the higher sectoral specialization rate within the region concentrated in sectors with positive differentiation percentage (Daryanto & Hafizrianda, 2010: 23).

Shift Share Analysis (SSA)

Shift Share Analysis (SSA) accommodates similarities and differences among the regions. The analysis assumes that deviations on regional income, regional production or laborer rate are composed of three components, namely: regional growth component, proportional or industrial mix growth component, and regional share growth component (Widodo, 2006).

Principally, SSA attempts to divide or decompose the difference (deviation) of values added in t-year (measured through value added approach) and value added obtained in the base year, usually notated as ΔY_t . There are three decomposing variables serving as the components of ΔY_t , namely Regional Growth (RG) component, Proportional Growth (PG) component, and Regional Share Growth (RSG) component. These components are formulated into the following mathematical expression:

$$\Delta Y_t = RG_{ij} + PG_{ij} + RSG_{ij}$$

III. FINDINGS AND DISCUSSION

A sector with LQ index > 1 is categorized as basis sector. The basis sectors become a strength (potentiality) to export its products to the other regions. Higher LQ index indicates greater potentiality owned by the basis sector. Air transport, manufacture of gas and production of ice, transportation and storage, electricity and gas, and construction are the basis sectors or the most dominant sectors owned by Sidoarjo Regency. The highest LQ index is found on the air transport sector, contributed by Juanda Airport as the biggest airport in East Java Province, which has been expanded into two terminals serving both domestic destinations and international destinations. Manufacturing of gas and production of ice sectors contribute the second highest LQ index for Sidoarjo Regency as the result of Lapindo mud volcano erupted since 2006 in Porong District. Transportation and storage sector contributes the third highest LQ index for Sidoarjo Regency because Sidoarjo Regency is located in the hinterland of Surabaya. There are many warehouses in Waru and Gedangan Districts storing goods, motorcycles, and cars. Based on this condition, it can be said that Sidoarjo Regency experiences the trickle-down effect of the development in Surabaya.

Table 1.2: Result of Average LQ Index Analysis on the Basis Sectors in Sidoarjo Regency (2010-2014)

No	Basis Sector	Mean LQ
1	Air transport	11,98
2	Manufacture of gas and production of ice	3,79
3	Transportation and storage	3,00
4	Electricity and gas	2,85
5	Manufacturing	1,70
6	Wholesale and retail trade and repair of motor vehicles and motorcycles	1,03
7	Construction	1,01

Source : Gross Regional Domestic Product of East Java Province by Industrial Origin 2010-2014, analyzed

Table 1.3 below describes the specialization index in Sidoarjo Regency is low. This condition indicates that the concentration of economic sectors are not well distributed across the region. There are three sectors serving as concentration of economic growth. They are manufacturing industry, transportation and storage, and air transport. Manufacturing industry is concentrated in Sidoarjo Industrial Estate Berbek (SIEB) as the center of industrial sites in Sidoarjo. The importance of SIEB is eminent as reflected by GRDP resulted from manufacturing industry in the region.

Table 1.3: Result of Analysis on Average Specialization Index (SI) in Sidoarjo Regency (2010-2014)

No	Sector	Mean IS
1	Manufacturing	20,53633019
2	Air transport	6,409083472
3	Transportation and storage	5,63334367

Source: BPS Jatim, analyzed

Based on the components of Regional Growth (RG) presented on Table 1.4 below, it turns out that economic sector in Sidoarjo Regency that grows faster than average economic sectors in East Java Province is manufacturing industry as much as 113,52,071. Meanwhile, wholesale and retail trade; repair of motor vehicles and motorcycles sector and wholesale trade and retail trade except of motor vehicles and motorcycles sector are the second and the third fastest sector in Sidoarjo Regency with the growth rates as much as 3349.805 and 2248.719 respectively, followed by construction sector with a growth rate as much as 2081. 970. On the other

hand, forestry and logging industry sector is the economic sector with the smallest growth rate in the region (as much as 0.165). Based on these data, the most effective way to improve regional economic growth of Sidoarjo Regency in the future is enhancing the growth of manufacturing industry sector.

Table 1.4: Regional Growth of Sidoarjo Regency (2010-2014)

Sector	Regional Growth	Sector	Regional Growth
Manufacturing	11352,071	Other mining and quarrying	5,383
Wholesale and retail trade; repair of motor vehicle and motorcycle	3349,805	Agriculture services and hunting	2,554
Wholesale trade and retail trade except of motor vehicles and motorcycles	2248,719	Railways transportation	1,016
Construction	2081,970	Financial supporting service	0,357
Transportation and storage	1808,065	River, lake, and ferry transport	0,247
Air transport	1483,987	Forestry and logging	0,165

Source: BPS Jatim, analyzed

Although electricity and gas procurement sector seems to grow rapidly, the result of Shift Share Analysis indicates that the sector is not categorized as a leading sector in Sidoarjo Regency. Table 1.5 below depicting proportional Growth (PG) of economic sectors in Sidoarjo Regency reflects this condition by negative proportional growth -264.835. Similarly, not almost all sub-sectors of agricultural sector is leading sector, as indicated by negative PG indexes (except for fishery sector with PG index 135.130). The potentiality of fishery sector is mainly caused by many fishponds in Sidoarjo Regency producing fishery commodities, such as milkfish, mussels, and prawns. Conceptually, PG component increases as the result of subsector difference of final product demand, raw material availability, and industrial policies (i.e. policies on marketing, tax institution, subsidy, price support, etc.). Real estate activities sector has PG index 61.070. The sector with the lowest proportional growth is manufacture of gas and production of ice sector with PG index -347.335. Therefore, in order to improve the sector in the future, Sidoarjo Government (alongside with National Gas Company (PGN)) needs to improve gas supply either through transportation process, distribution process, and provide all kind of gas fuel through pipe system.

Table 1.5: The Analysis on Proportional Growth in Sidoarjo Regency (2010-2014)

Sector	Proportional Growth	Sector	Proportional Growth
Information and communication	564,829	Real estate activities	61,070
Transportation and storage	465,221	manufacturing	-116,510
Wholesale trade and retail trade except of motor vehicles and motorcycles	462,321	Agriculture, livestock, hunting, and agriculture services	-133,917
Wholesale and retail trade; repair of motor vehicles and motorcycles	457,687	Agriculture, forestry, and fishing	-209,300
Construction	183,739	Electricity and Gas	-264,835
Air transport	179,285	Public administration and defence; compulsory social security	-331,333
Fishery	135,130	Manufacture of gas and production of ice	-347,335

Source: BPS Jatim, analyzed

Not all economic sectors in Sidoarjo Regency are competitive in their own region. Table 1.6 below reflects that the Regional Share Growth of agriculture, livestock, hunting and agriculture services sector are small as indicated by negative index. Transportation and storage sector and agriculture sector have the lowest RSG Indexes, namely -157.686 and -89.259 respectively. These sectors lose in competition against products from other regions entering Sidoarjo. Not all regional market shares are covered by these two domestic sectors. Regional Share Growth (RSG) of transportation and warehousing sector is negative due to the availability of transportation means for people and goods are low. People tend to use private transportation although Sidoarjo Government has imposed progressive tax for a household with two or more vehicles. The government needs to

provide comfortable public transportation to minimize traffic jam, traffic accident, and criminality rate. Agriculture sector are losing the competition because many farmland in Sidoarjo Regency are transferred into housing areas or factories. Global warming also reduces the productivity of farmland in Sidoarjo where most of the farmland undergo crop failure recently. RSG rate of the medical and social service sector is negative due to lacking of medical practitioners, poor medical service, and lacking of social activities carried out by the government, for example free medication or free medical check-up. Oddly, social activities are often held during legislative or regional executive elections. Meanwhile, among the most eminent sectors with highest competitive potentiality in regional market share are wholesale and retail trade; repair of motor vehicles and motorcycles sector and wholesale and retail trade and repair of motor vehicles and motorcycles sector with RSG component rates 1136.808 and 732.611. The total RSG component rate of agriculture, forestry, and fishery sectors are 84.052 while the electricity procurement sector has positive competitive potentiality rate as much as 1.666.

Table 1.6: Regional Share Growth of Economic Sectors in Sidoarjo Regency (2010-2014)

Sector	Regional share growth	Sector	Regional share growth
Wholesale and retail trade; repair of motor vehicles and motorcycles	1136,808	Human health and social work activities	-17,076
Wholesale and retail trade and repair of motor vehicles and motorcycles	732,611	Construction	-58,809
Wholesale trade and retail trade except of motor vehicles and motorcycles	436,060	Manufacturing	-71,661
Manufacturing of gas and production of ice	295,679	Land transport	-82,715
Electricity and Gas	218,414	Real Estate activities	-85,440
Air transport	103,328	Agriculture, livestock, hunting, and agriculture services	-89,259
Electricity	1,666	Transportation and storage	-157,686

Source: BPS Jatim, analyzed

According to turnpike growth theory (as cited in Tarigan, 2012) among the ways in enhancing development in underdeveloped regions is each region should be able to identify the sectors or commodities that have the highest potentiality and able to develop these sectors as fast (turnpike) as possible. In order to identify these potential sectors, the government may assess comparative potentiality (i.e. Location Quotient/LQ) and competitive potentiality or positive shift share. A sector is categorized as a leading sector if the sector own comparative potentiality and comparative potentiality. Table 1.7 below shows that there are four sectors that are considered as leading sectors in Sidoarjo Regency. They are electricity and gas, manufacturing of gas and production of ice, wholesale and retail trade and repair of motor vehicles and motorcycles, and air transport. These findings are not very surprising because of gas production potentiality provided by mud volcano in Porong District and many businesses in car and motorcycle trading and spare parts industry that opens job opportunity for Sidoarjo residents and enhances production outputs. These sectors encourage Regional Economic Growth of Sidoarjo Regency.

Table 1.7: Leading Sectors in Sidoarjo Regency According to Average LQ Index and Average Shift Share Index (2010-2014)

Sector	Mean LQ	Regional Share Growth	Leading Sector
Electricity and gas	2,848	218,414	+
Manufacture of gas and production of ice	3,791	295,679	+
Wholesale and retail trade and repair of motor vehicles and motorcycles	1,034	732,611	+
Air transport	11,979	103,328	+

Source: BPS Jatim, analyzed

IV. CONCLUSION AND RECOMMENDATIONS

Conclusion

1. Based on the result of LQ analysis, the leading sectors in Sidoarjo Regency are: construction sector, wholesale and retail trade and repair of motor vehicles and motorcycle, manufacturing industry, electricity and gas, transportation and storage, manufacture of gas and production of ice, and air transport sector.
2. There are 18 sectors with positive competitive potentiality (shift share growth) in Sidoarjo regency. However, only six of them are considered as leading sectors. They are: wholesale and retail trade; repair of motor vehicles and motorcycles, wholesale and retail trade and repair of motor vehicles and motorcycles, wholesale trade and retail trade except of motor vehicles and motorcycles, manufacturing of gas and production of ice, electricity and gas, and air transport.
3. Overlay result of combined analysis on LQ index and shift share rate comes into ideal sectors with positive comparative and competitive potentiality. There are four ideal sectors considered as leading sectors. They are electricity and gas sector, manufacture of gas and production of sector, wholesale and retail trade and repair of motor vehicles and motorcycles sector, and air transport sector.

Recommendations

1. By considering the leading sectors owned by Sidoarjo Regency, the local government can developmental plan for each economic sector. The developmental plan is expected to be able to encourage the growth of underdeveloped sectors and direct the sectors toward economic development.
2. The government should prioritize economic development on the leading sectors that highly contribute on the regional economic growth of Sidoarjo Regency so that the sectors could provide multiplier effect on its outputs, income, and employment rate.
3. Developmental strategies should be directed towards infrastructure development and management, especially on administration, repairing damaged roadways due to excessive load vehicles using the roadways, slow disbursement of local government budgets, and overlapping authorities in managing roadways between the State (central government), Provincial government, local government and sub-districts. Proper infrastructure (roadways) shall support the growth of industries both in production and service providers. The local government should also be able to simplify permission granting bureaucratic procedure, enact Regional Regulation to facilitate investment in the region, and shortening marketing chain by forming working groups.
4. Sidoarjo local government should be able to encourage economic growth without enlarging fiscal disparity. Fiscal balance transfer and village allocation fund are expected to become solution in reducing poverty rate and income imbalance in Sidoarjo Regency. However, these funds also cause moral hazard for regional apparatuses and dependency towards the funds without making an effort in improving Regional Own-Source Revenue as one of Regional self-sufficiency indicators.

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