

Strengthening of National Resilience:

Leading Sector Mapping for Digital Economy In Indonesia

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Abstract—Economic growth in Indonesia in general has experienced rapid progress where Indonesia's economic growth has increased every year. The development of a digital economy echoed by the government requires appropriate strategies and identification to be able to answer the economic needs of each region. Proper identification will help formulate government policies so that they support programs to accelerate economic growth and support the strengthening of national economic resilience. The research method used in this study is a quantitative study using Location Quotient (LQ) analysis as an analysis tool to identify leading sectors in each region throughout Indonesia. Observations were made in all regions in Indonesia using BPS data based on regional categorization consisting of Sumatra, Java, Kalimantan, Sulawesi, Nusa Tenggara, and Maluku-Papua. The results of the analysis show that each region has different leading sectors from each other. The government can prepare a digital economic development plan by taking into account the economic potential in each region so as to create economic development that is right on target and supports strengthening national economic resilience.

Keywords—Indonesia, leading sector, digital economy, economic resilience

I. INTRODUCTION

Economic development is one of the government's programs to encourage the improvement of people's welfare in an area in the long term along with institutional reform. The economy of a region or a country in essence requires sustainable economic development in order to create stability and prosperity in the country or region. Arsyad defines economic development as an interrelated and influential process between factors that produce economic development that can be seen and analyzed, both nationally and regionally [1].

Changes in the structure and characteristics of economic activity in economic development are processes that follow economic growth. Rahardja and Manurung [2] said that if economic growth can go well, there will be economic growth accompanied by changes in the distribution of output and economic structure, increased contribution of the industrial and

service sectors, and increased education and skills of the workforce.

Structured economic development will increase income per capita, while economic growth will not necessarily be followed by an increase in per capita income. Research conducted by Mahesa states that the increase in economic growth and equity is optimally directed at a systematic and structured development process. Indicators that can be observed to measure the success of an area's development are through increased economic growth [3].

Implementation of national development planning in an area that is adjusted to the ability of Human Resources (HR), social, economic level and applicable regulations is through regional economic development. Radianto in Nugraha states that regional economic development is carried out with the aim of increasing the rate of economic growth and changing economic structures in an area. Changes in economic structure can occur in the form of a transition from agriculture to non-agriculture, industry to services, changes in productive units, and changes in the work status of workers [4].

Improving community welfare is the goal of economic growth in an area. Increasing economic growth in a sustainable manner is needed by the community to achieve improved community welfare. Economic development by local governments must be in line with the availability of resources and the developing strategic environment in the region. Utilization of available resources will not run optimally when the development does not accommodate the potential and aspirations that develop in the area. Sun'an and Senuk convey that the regional approach as a basis for regional development planning must be oriented to the ability to act locally in a global framework, taking into account current feasibility in future considerations, more flexible and dynamic in a definite framework [5].

Indonesia's national interests are to maintain the establishment of the Republic of Indonesia based on the Pancasila and the 1945 Constitution of the Republic of Indonesia as well as ensuring the smooth development of national development in order to realize the national goals contained in the opening of the 1945 Constitution of the

Republic of Indonesia. The Indonesian Ministry of Defense lays out efforts to realize national interests in the Indonesian Defense White Paper (BPPI) by paying attention to the three main principles, namely the national and state life arrangements based on the Pancasila and the 1945 Constitution of the Republic of Indonesia, sustainable national development, environmentally sound, and national resilience based on the Archipelago's Insight and utilizing facilities, potential and national strength as a whole and in an integrated manner [6].

The indicator of a development activity is the occurrence of economic growth (economic growth) which is illustrated by an increase in output or national income (national income). The success of development in a country will have an impact in the

form of changes in other aspects of *gatra* such as politics, culture, social, and others. Economic stability in agriculture and industry is one of the long-term development goals in the field of economic growth [7]. Regional development is a component that cannot be separated from national development. Regional development can be carried out in various aspects of *Astagatra* through the implementation of development in the economic field. The main objective of regional economic development is to improve the standard of living of the people and equal employment opportunities, if development can work well in each region, then the national development objectives will be simultaneously achieved. Regional economic development is the main key to the success of a country's development [8].

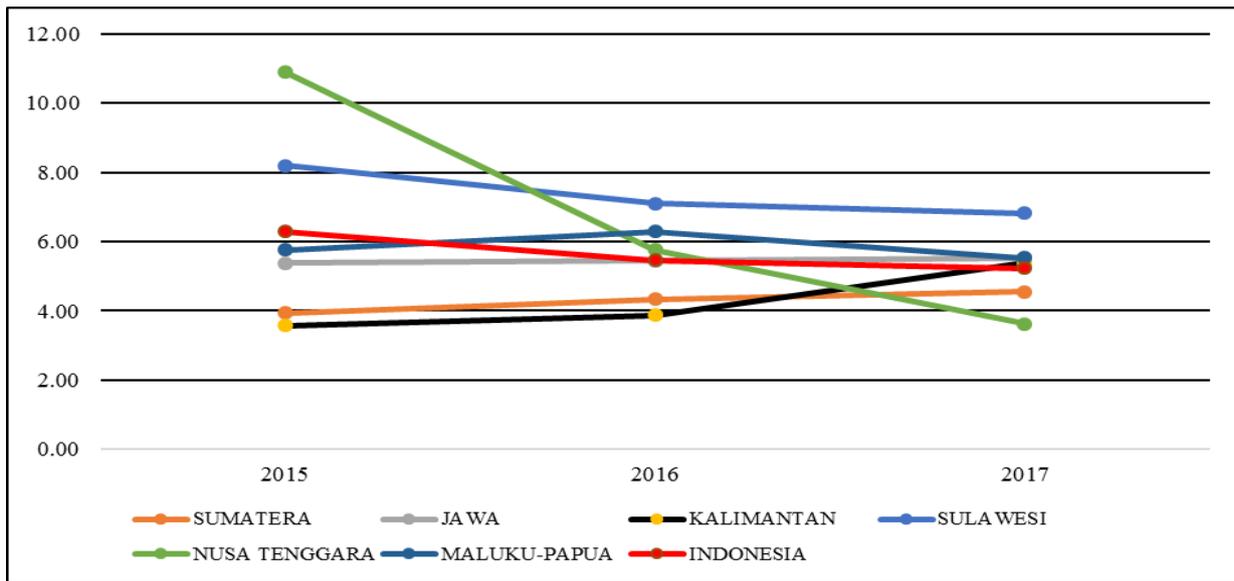


Fig. 1. Economic Growth of Indonesia (2015-2017) [9].

Indonesia is an archipelago located between two oceans and two continents. Indonesia's strategic position is an economic potential that can be developed in order to increase Indonesia's economic growth. Geographically, Indonesia consists of six regions with different regional potentials in each region. The area consists of Java, Sumatra, Kalimantan, Sulawesi, Nusa Tenggara and Maluku-Papua. The existence of scattered economic sectors in Indonesia produces economic output in seventeen economic sectors and contributes to the economy in Indonesia. The difference in the number of contributions from each sector to the Gross Domestic Product (GDP) in each region in Indonesia indicates that Indonesia has a variety of potential that can be utilized to maintain regional economic security in Indonesia.

Data of BPS shows that economic growth in each region in Indonesia fluctuates varied, where the regions of Sumatra, Jawa, and Kalimantan experience rapid economic growth every year, but other regions experience a decline in economic growth. The average economic growth in the Sulawesi region is above the national economic growth. Figure 1 shows that the

Indonesian economy has fluctuated, this shows that the Indonesian economy is still not stable but is still in normal condition.

One of the goals and ideals of the Indonesian people formulated by the nation's founders 74 years ago in the text of the Proclamation of Independence of the Republic of Indonesia and stated in the Preamble of the 1945 Constitution of the Republic of Indonesia is to advance public welfare based on social justice. The general welfare that Indonesia seeks to achieve is welfare in the economic, social and welfare aspects as a whole human being.

Indonesia's development policy direction focuses on meeting the achievement of high economic growth targets. High economic growth can increase people's income while increasing the production capacity of the Indonesian economy. Departing from the above premise, Indonesia's national development policy strategy based on the assumption of high economic growth will create equitable prosperity for all classes of society in harmony with the trickle-down effect theory. The

trickledown effect theory states that economic growth obtained by a group of rich people will have an impact in the form of drops of economic growth to poor people through expansion of employment opportunities and other economic potentials. The droplet effect will have a positive impact on various conditions thereby increasing economic output and creating economic equity.

The main objective of efforts to achieve inclusive economic growth is to reduce poverty and economic inequality that occurs in society. Inclusive growth is influenced by three main factors which consist of the success in optimizing economic potential; social security; and guarantees equitable access to employment opportunities for all classes of society. The basic component is the foundation of inclusive development where the foundation depends on the ability of institutions and governance [10]. Rusastra has another concept of inclusive development where the concept states that basically the perspective of inclusive growth is development that is pro-poor, the level of economic growth, and sustainable development where the three paradigms have a strong connection to each other. Sustainable economic growth will spur the government's efforts to improve the level of income distribution [11].

The various definitions and concepts in the formulation of the concept of inclusive growth hold that each concept emphasizes how growth should work in the economy to create equity. The Asian Development Bank notes that economic growth in a country can be inclusive of several things but not comprehensively [12]. Inclusive growth can be used as a benchmark for determining economic growth in a quality country or vice versa. This study defines inclusive growth as a condition that occurs when economic growth that occurs in a country is able to reduce the level of poverty, the level of income distribution inequality, and the impact of economic growth on employment creation and employment in a country.

Sholihah in her research stated that inclusive economic growth with the aim of reducing poverty, inequality, and increasing employment is not a phenomenon that occurs equally in Indonesia [13]. Inclusive economic growth in Indonesia tends to occur in Eastern Indonesia. Per capita income, government investment in infrastructure, and the level of school participation have positive and significant effects on inclusive growth in efforts to reduce poverty and economic inequality.

Economic conditions in Indonesia continue to increase where economic growth is reflected in economic growth indicators that always show positive numbers. Achieving this growth should create economic opportunities that can be accessed by all levels of society, referred to as inclusive economic growth. Inclusive growth must be interconnected, sustainable and able to reduce inequality or in other words pro-poor economic growth. Inclusive growth enables all individuals to contribute and benefit from economic growth.

Economic disparities that occur amidst the phenomena of economic disruption and demands to maintain national

economic resilience are the main issues in this study so that research on inclusive economic growth analysis and related strategies is needed to assist future development planning. In order to know the level of inclusiveness of Indonesia's economic growth, an analysis of inclusive growth in Indonesia is required by using the Location Quotient (LQ) analysis.

II. LITERATURE REVIEW

National resilience is a universal conception of defense with the aim of maintaining the survival of an independent and sovereign Indonesian State based on domestic forces [14]. National defense basically has a universal nature with popular characteristics, where these characteristics are oriented to the interests of the people. Natural resources and human resources owned by the Indonesian people are utilized as an effort of interests as well as national defense, so that the conception of Indonesia's national resilience covers all aspects of national life.

This aspect of national life is known as Astagatra which is broken down into eight aspects of life. Astagatra consists of two elements namely trigatra and pancagatra. Trigatra elements include aspects of geography, economics and population. Pancagatra are aspects of national life that are related to the order of life and the association of human life in society and the state which are bound by certain rules and norms [15].

The economic aspect is one of the obstacles in realizing national resilience in the conception of national resilience which is an important factor for the progress and prosperity of the country. Benchmarks for people's welfare and the progress of a nation can be measured through the rate of economic growth, even the economic conditions of a country can affect the social and political conditions in the country. Economic factors often affect social and political conflicts that can threaten the disintegration of the nation. Therefore, stability and rate of economic growth are needed to realize national resilience. Economic resilience is a condition of the nation's economic life which is based on Pancasila democracy [16]. Economic resilience has the ability to maintain healthy and dynamic economic stability so as to create national economic independence with high competitiveness. Well-maintained economic independence will have an impact on people's lives in the form of a just and equitable prosperity of the people.

Indonesia this year is experiencing the slowest economic growth in the last five years. But the growth of the e-commerce industry is even more rapid amid a slowdown in the country's economic pace. The potential of the e-commerce industry in Indonesia cannot be underestimated. From Ernst & Young's analysis data, it can be seen that the growth of online business sales in the country has increased 40 percent every year. There are about 93.4 million internet users and 71 million smartphone users in Indonesia.

Not just to find information and chat, people in big cities are now making the internet especially lagie-commerce as part of their lifestyle. Consumptive behavior of tens of millions of

middle class people in Indonesia is the reason why e-commerce in Indonesia will continue to grow.

Talking about this industry is not merely talking about buying and selling goods and services via the internet. But there are other industries connected in it. Such as the provision of delivery services or logistics, telecommunications providers, smart device manufacturers, and others. This is what makes the e-commerce industry must be guarded to be able to drive the pace of the national economy.

Not only that, the government also formulated the main principles in developing e-commerce through affirmative action. The five principles, including all Indonesian citizens, have equal opportunities to access and become e-commerce actors, all Indonesians have the knowledge and knowledge to be able to utilize information technology for the economy, minimize job losses during the transition to the digital economy, implement tools law and policy must support e-commerce security which includes technology neutrality, transparency and international consistency, and in particular local e-commerce businesses, especially newbies and SMEs, must get proper protection and be a top priority.

III. METHODS

This research is a quantitative study that uses secondary data as a source of data. This research is called quantitative research because it uses a quantitative approach in answering the research questions raised in this study. Sugiyono [17] states that quantitative research is defined as research conducted based on the philosophy of positivism, where the foundation is used to observe certain populations or samples, and the analysis of the data used is quantitative. The research paradigm used in this study is the descriptive research paradigm. The data used in this study are data on economic growth, gini coefficient, number of labor force, number of people employed, number of poor population, and income per capita. Data is taken from the Central Statistics Bureau of Indonesia publication in 2015 – 2017.

Data analysis in this study uses Location Quotient and Miles Huberman data analysis techniques. Location Quotient Analysis (LQ) is one of the analyzes that is easy to understand and has precise accuracy in describing the economic conditions in an area [18]. LQ analysis is a mathematical technique that

measures economic indices through comparison of regional outputs with wider reference area outputs. LQ analysis is also often used to identify industrial areas within a region. Identification of leading sectors in Riau Province using Location Quotient (LQ) analysis techniques. The LQ formula used is:

$$LQ = (S_i/S) / (N_i/N)$$

Information:

LQ	=	Location Quotient Index
S _i	=	Regional GDRP of sector i
S	=	GDRP of Regional
N _i	=	National GDP of sector i
N	=	GDP of Indonesia

Based on the equation above, the LQ criteria are obtained as follows:

- If $LQ \geq 1$, the business sector is categorized as a base sector. In other words, production from sector i in a region can meet the needs of the region itself and export it out of the region.
- If $LQ < 1$, the business sector will be categorized as a non-base sector. In other words, sector i in a region has not been able to meet the needs of its own region so imports from outside regions are needed.

IV. RESULTS AND DISCUSSION

A. Results

The identification of leading economic sectors in the regional economy can be divided into two sectors, namely the base sector and the non-base sector. The base sector is the economic sector that carries out the export of goods or services outside the economic boundaries of the community concerned. Non-base sector is an economic sector with the activities of providing goods and services living in the economic area of the community concerned. The scope of non-base sector production is only in the regional market itself or local. Leading sector identification can be done by calculating the Location Quotient (LQ) ratio. This study identifies the base sector in each region as the study area through comparison of the economic sector in the study area and the reference region (Indonesia).

TABLE I. RESULT OF LQ ANALYSIS

SECTOR	Sumatera	Java	Borneo	Sulawesi	Bali & Nusa Tenggara	Maluku & Papua
Agriculture	1.82	0.58	0.82	1.60	1.49	1.04
Mining	1.51	0.27	2.99	2.02	1.05	3.63
Manufacture	0.95	1.35	1.00	0.64	0.22	0.44
Electricity and Gas	0.16	0.34	0.15	0.08	0.14	0.05
Water Treatment and Waste	1.06	0.91	1.22	1.59	1.75	1.43
Construction	1.05	1.04	0.89	1.09	0.97	1.05
Trade	0.93	1.19	0.79	0.83	0.79	0.69
Transportation	0.99	0.96	0.98	1.09	1.66	1.02
Acomodation and Food Beverage	0.45	1.35	0.74	0.42	3.35	0.25
Information and Communication	0.60	1.29	0.76	0.83	1.17	0.68

Table 1. Cont.

Finance and Insurance	0.58	1.25	0.80	0.71	0.95	0.46
Real Estate	0.87	1.20	0.74	0.84	1.23	0.56
Company Service	0.26	1.51	0.64	0.17	0.37	0.48
Government Administration	1.04	0.84	0.94	1.42	2.07	3.10
Education	0.68	1.14	0.92	1.26	1.82	0.85
Health	0.82	0.96	0.92	1.55	1.95	1.35
Others	0.45	1.36	0.75	0.68	1.10	0.55

Source: Processed from Secondary Data

Based on table 1, the leading sectors in Sumatra are agriculture, mining, water and waste treatment, construction, and government administration. Leading sectors in the Java region are manufacturing, construction, trade, accommodation, information and communication, finance, real estate, corporate services, education, and other services. For Bali and Nusa Tenggara, the leading sectors in the region are agriculture, mining, water and waste treatment, transportation, accommodation, information, real estate, government administration, education, health, and other services.

The leading sector in Kalimantan is the manufacturing and treatment of water and waste. Sulawesi region has a leading sector consisting of agriculture, mining, water and waste treatment, construction, government administration, education, and health. While the leading sectors in Maluku and Papua are agriculture, mining, water and waste treatment, construction, transportation, government administration, and health.

B. Discussion

Bank Indonesia (BI) Deputy Governor Mirza Adityaswara said about 50% of Indonesia's population had entered the digital economy earlier this year. About 132.7 million or 50% of Indonesia's population entered the reach of internet penetration in early 2018. In addition, around 130 million Indonesians or 49% of the total population entered into active social media users.

In Indonesia itself is very vulnerable to the occurrence of an economic crisis, this can be caused by several factors such as capital markets that are controlled by foreigners, as well as foreign-dominated Indonesian government debt. Indonesia's economic slowdown is currently quite alarming, coupled with the global economy which has triggered foreign capital outflows from developing countries such as Indonesia.

For this reason, Indonesian President Joko Widodo has set a vision to place Indonesia as the largest economy in Southeast Asia by 2020, by gaining the maximum possible community for local products and actors. The existence of the digital economy is currently considered to be able to increase efficiency in the economic system as has been done to encourage improvements in Indonesia's Ease of Doing Business (EODB) phase ranking, especially in the tax payment sector.

To develop the digital economy, the government must pay attention to the needs and potential in each region so that the development of the digital economy is on target and able to accelerate economic growth in each region in Indonesia. The need for trade development in the Java region cannot be treated the same as the need for access to agriculture by Sulawesi, nor can the needs of tourism by the Bali region be equated with the

need for digital economic support in the mining sector in Kalimantan.

With the current digital economy, it can make the global market one of the improvements in the Indonesian economy in achieving economic goals reaching 5.4 percent. And supported by increasing the quality of digital transactions, the availability of internet infrastructure, and also the high level of public trust in the digital cyberspace which can make it easier for Bank Indonesia to achieve its economic targets. And the role of Bank Indonesia is needed to remain committed in encouraging more equitable economic growth in Indonesia, both at the national and regional levels.

V. CONCLUSION

Identification of the base sector in an effort to identify national resources to support economic security in Indonesia is the first step to creating targeted economic development towards Indonesia's sovereignty. Different leading sectors in each region show that economic equality and digital economic development must be able to answer the needs in the region in order to respond to the vastness of Indonesia with millions of different potential and spread throughout the country.

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