http://ejournal.seaninstitute.or.id/index.php/Ekonomi
Jurnal Ekonomi, Volume 12, No 04 2023
ISSN: 2301-6280 (print) ISSN: 2721-9879 (online)

ANALYSIS OF LEADING BUSINESS SECTORS IN 2023 AND PROJECTIONS OF GROWTH IN GROSS REGIONAL DOMESTIC PRODUCT OF THE REGIONAL GOVERNMENT OF EAST NUSA TENGGARA PROVINCE

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ARTICLE INFO

Keywords:
Location Quotient, Dynamic Location Quotient, ARIMA, leading sectors, GRDP

ABSTRACT

The aim of this research is to determine the leading business sectors in the Province and each Regency/City in the East Nusa Tenggara Province region. Analysis of determining leading sectors uses Location Quotient (LQ) and Dynamic Location Quotient (DLQ), as well as ARIMA to make projections for the GDP of East Nusa Tenggara Province up to Semester IV 2025. Based on the LQ and DLQ analysis, the Government Administration, Defense and Social Security sectors Mandatory and the Agriculture, Forestry and Fisheries sectors are leading business sectors and have the potential to remain leading sectors in the future. There are 9 regencies/cities that have the Agriculture, Forestry and Fisheries sectors as leading business sectors and in the future have the potential to develop more quickly so that they remain the leading sectors, namely in the regencies of Kupang, Alor, Lembata, Sikka, Ende, Rote Ndao, Sabu Raijua , and Malacca. However, only 2 districts/cities have leading business sectors and have the potential to remain leading business sectors in the future in the Government Administration, Defense and Mandatory Social Security sectors, namely Belu and East Flores. In the future, the GDP level from the third quarter of 2023 to the fourth quarter of 2025 is projected to increase, but will always experience a decline in every first quarter.

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1. INTRODUCTION

The provision of government decentralization and autonomy policies to regions has opened up great opportunities for regional governments to develop independently in accordance with their potential to increase economic growth in the region. Economic potential in the region is an important factor in encouraging economic growth, creating new jobs, increasing investment in the region, and can be a factor that can trigger the alleviation of poverty levels in the region. Therefore, the central and regional governments always strive to increase economic growth in their regions because it is an indicator of the success or failure of economic development.

Decentralization is the process of transferring authority, decisions and responsibilities from the central government to lower levels of government, such as provinces, districts or cities. The impact of decentralization on regional economies can vary depending on policy implementation and regional government capacity in managing resources and making decisions. In general, decentralization provides opportunities for regions to develop different local economic potential. Decision making that is closer to local communities can help identify and address specific problems at the regional level, enabling the development of local economic sectors. In some areas, decentralization can bring benefits in managing natural resources more effectively. Regions rich in natural resources can be more involved in decision making about resource exploitation and the sharing of its benefits. Decentralization can encourage local governments to improve the investment climate and better infrastructure. Investment decisions closer to the regional level can increase the attractiveness of local investment and increase regional accessibility, which in turn can increase competitiveness and economic growth in the region. Empowering local governments to manage their regional economic policies can spur more dynamic local economic growth. An approach that is more responsive to local needs and potential can encourage innovation and economic efficiency.

Economic development and high competitiveness are important factors in the success of a region, especially since the enactment of Law Number 23 of 2014 concerning Regional Government which

changed centralization to a decentralized system. This regulation changes the way of economic development, where control is no longer completely in the center but is given to each region. This encourages regions to actively seek and manage existing resources for their development. Each region has the right to regulate and manage its own government affairs and community interests. They also have an obligation to evaluate potential resources that can be developed as leading sectors, as well as to handle the problems they face in accordance with the targets and needs of their respective regions.

In implementing regional autonomy, regional governments must be able to determine the potential and superior sectors owned by the region according to their competitive advantages [1]. In fact, many regions still have difficulty finding potential and superior sectors in their regions that are capable of driving regional economic growth effectively and efficiently [2]. Each regional government must identify supporting sectors for the economy and sectors that have the potential to become leading sectors. This can help direct economic development efforts in various sectors that have comparative advantages and high growth potential.

Policies can be focused on sectors that have the potential to make a major contribution to economic growth and improve social welfare. Knowledge of comparatively superior sectors can be used to guide investment and channel resources to those sectors, thereby increasing competitiveness and economic growth in the region. Such policies may include fiscal incentives, infrastructure support, workforce training, and market development for those sectors. By comparing the results of LQ analysis from various time periods, we can evaluate whether the policies that have been implemented have succeeded in increasing the concentration of the desired sectors.

One of the provinces in Indonesia that has the highest poverty rate and the lowest Gross Regional Domestic Product (GRDP) is the Province of East Nusa Tenggara (NTT). Based on table 1 below, it shows that NTT Province is one of the provinces that has the highest level of poverty depth below West Papua and Papua Provinces in 2022 and Semester 1 of 2023.

Table 1 Poverty Depth Index for 2022 to 2023

Province	Proverly Depth Index (P1) by Provice and Region (Percent) (Urban + Rural)		
	2022		2023
	Semester 1 (March)	Semester 2 (September)	Semester 1 (March)
Aceh	2,49	2,9	2,76
North Sumatra	1,36	1,41	1,26
West Sumatra	0,8	0,86	0,82
Riau	1,1	0,97	1
Jambi	1,17	1,19	1,19
South Sumatra	1,96	1,79	1,72
Bengkulu	2,43	2,17	2,14
Lampung	1,82	1,7	1,64
Kep. Bangka Belitung	0,6	0,43	0,63
Kep. Riau	1,05	0,89	0,82
DKI Jakarta	0,77	0,68	0,69
West Java	1,32	1,24	1,16
Central Java	1,77	1,75	1,75
Yogyakarta	2,01	1,53	1,72
East Java	1,62	1,62	1,63
Banten	1,03	0,79	1,2
Bali	0,62	0,56	0,55
West Nusa Tenggara	2,49	2,57	2,38
East Nuasa Tenggara	3,63	3,74	3,33
West Kalimantan	1,04	1,1	1,03
Central Kalimantan	0,91	0,66	0,66
South Kalimantan	0,63	0,63	0,61
East Kalimantan	0,99	0,78	0,77
North Kalimantan	0,89	0,6	0,64
North Sulawesi	1,15	1,11	1,09
Central Sulawesi	2,41	2,15	2,12
South Sulawesi	1,36	1,5	1,57
Southeast Sulawesi	1,82	2,05	1,96
Gorontalo	3,04	2,85	2,92
West Sulawesi	2,21	2,09	1,8
Maluku	2,9	3,08	3,08
North Maluku	0,91	1,23	1,08
West Papua	4,82	5,25	4,94
Papua	6,16	7,28	6,25
Indonesia	1,59	1,56	1,53

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Jurnal Ekonomi, Volume 12, No 04 2023
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Furthermore, based on Table 2 below, it is known that between 2020 and 2022, NTT Province has the lowest GDP per capita compared to all provinces in Indonesia.

Table 2 Gross Domestic Product Per Capita 2020 to 2022

Provinsi	[2010 Series] Gross Regional Domestic Product Per Capita (Thousand Rupiah)					
	PREVAILING PRICE			CONSTANT 2010 PRICES		
	2020	2021	2022	2020	2021	2022
ACEH	31.633,38	34.680,92	39.156,01	25.018,28	25.357,70	26.063,50
NORTHERN SUMATERA	54.979,04	57.574,03	63.194,18	36.175,16	36.666,20	37.943,83
WEST SUMATERA	43.825,66	45.356,77	50.593,41	30.696,21	31.360,79	32.377,51
RIAW	114.166,90	129.205,64	149.914,13	76.884,74	77.995,51	80.057,79
JAMBI	57.957,73	64.729,82	76.096,40	41.926,04	42.906,66	44.536,39
SOUTH SUMATRA	53.842,74	57.731,33	68.338,10	37.323,24	38.172,97	39.676,95
BENGKULU	36.552,50	39.156,38	43.741,71	23.105,92	23.598,17	24.230,02
LAMPUNG	39.290,33	40.872,87	45.129,34	26.746,64	27.193,59	28.064,39
KEP. BANGKA BELITUNG	52.023,40	58.351,43	63.752,24	36.307,61	37.585,50	38.674,15
KEP. RIAW	123.464,79	130.118,86	141.682,65	85.012,58	85.425,89	87.238,26
DKI JAKARTA	262.615,17	274.519,39	298.359,97	170.089,02	174.941,72	182.908,69
WEST JAVA	43.236,51	45.193,76	49.038,41	30.180,54	30.907,59	32.182,15
CENTRAL JAVA	36.964,78	38.646,98	42.149,54	26.483,68	27.144,18	28.362,24
DI YOGYAKARTA	37.693,64	40.240,40	44.044,64	27.754,47	28.918,82	30.011,22
EAST JAVA	56.640,82	60.048,66	66.364,73	39.686,19	40.821,89	42.717,44
BANTEN	52.729,40	55.207,80	60.990,14	37.165,16	38.217,80	39.515,38
BALI	52.015,45	50.534,20	55.544,66	34.216,52	32.975,85	34.160,65
WEST SOUTHEAST NUSA	25.183,56	25.995,55	28.672,54	17.583,11	17.706,47	18.648,19
EAST SOUTHEAST NUSA	20.056,99	20.580,34	21.718,26	12.960,95	13.092,81	13.298,85
WEST KALIMANTAN	39.622,24	42.282,90	46.161,33	24.953,61	25.811,97	26.774,75
CENTRAL KALIMANTAN	57.145,08	62.784,47	72.945,07	37.148,73	37.925,62	39.799,98
SOUTH KALIMANTAN	44.100,79	47.998,87	60.079,32	32.212,30	32.849,02	34.035,52
EAST KALIMANTAN	161.798,85	182.915,31	238.700,72	125.764,53	127.208,24	131.136,62
NORTHERN KALIMANTAN	143.533,29	155.080,62	190.611,10	86.823,59	88.510,41	91.424,16
NORTH SULAWESI	50.521,13	54.048,87	59.043,36	33.670,44	34.787,33	36.385,08
CENTRAL SULAWESI	66.306,27	81.845,90	105.545,36	45.052,32	49.587,96	56.285,05
SOUTH SULAWESI	55.675,03	59.649,96	65.593,03	36.246,26	37.572,54	39.115,98
SOUTHEAST SULAWESI	49.718,15	52.446,58	58.764,27	35.708,60	36.581,67	37.998,09
GOROTALO	35.693,26	37.170,55	39.886,78	24.313,38	24.649,73	25.392,40
WEST SULAWESI	32.836,75	35.192,12	37.070,31	22.666,22	22.896,20	23.073,25
MALUKU	25.094,36	26.114,91	28.533,85	16.688,12	17.020,46	17.708,13
NORTH MALUKU	33.069,32	40.395,81	53.741,05	21.915,03	25.199,92	30.506,50
WEST PAPUA	73.932,60	73.543,81	77.149,68	54.487,70	52.980,01	52.833,61
PAPUA	46.416,36	54.067,06	59.411,79	32.108,51	36.431,25	39.131,31
INDONESIA	57.289,59	62.258,08	71.030,85	39.778,68	40.780,31	42.463,78

Thus, it can be concluded that, NTT Province has the third highest urban and rural poverty depth index in NTT Province, below West Papua Province and Papua Province, but the GRDP of East Nusa Tenggara Province is the lowest among all provinces in Indonesia and far below the GRDP of West Papua Province and Papua Province. Research results show that low Gross Regional Domestic Product (GRDP) has a negative influence on poverty levels in Manado City [3].

Based on data on economic conditions in NTT Province, researchers are interested in studying the leading and non-leading sectors of East Nusa Tenggara Province, both at the provincial and district/city levels. Understanding leading sectors at the provincial level and at the district/city level will strengthen the analysis of leading sectors that must be developed and maximized in the East Nusa Tenggara Province region so that GRDP continues to increase. To carry out analysis of leading sectors, researchers used the Location Quotient and Dynamic Location Quotient methods. Apart from that, this research will also project economic growth for East Nusa Tenggara Province up to Quarter IV 2025 using the ARIMA method. This is important to do to provide an overview of the direction of economic growth in East Nusa Tenggara Province. Thus, this article is entitled Analysis of Leading Business Sectors in 2023 and Projections of Gross Regional Domestic Product Growth for the Regional Government of East Nusa Tenggara Province.'

Literature Review

Gross Regional Domestic Product

Gross Regional Domestic Product (GRDP) is the total gross added value produced by all economic sectors in a region based on market prices. Added value occurs when production factors and raw materials are combined in the production process to add value. The calculation of added value is the production value (output) minus input costs. Here, gross value added includes income from factors of production, such as wages, interest, land rent, and profits, as well as depreciation and net indirect taxes. By adding the gross added value of each sector and then adding them up, we can obtain Gross Regional Domestic Product based on market prices (BPS, 2012). [4] said that GRDP is the total value of all final output produced by an economy at the regional level, whether it comes from local residents or residents from other regions who live in that area. GRDP is very important to present because it can be used to analyze development planning and as a measure to evaluate the results of development that has been carried out.

The economic growth of a region is significantly influenced by GRDP. A significant economic increase, which is reflected in an increase in the GRDP value, reflects an increase in the production of goods and services in an area. High GDP can indicate strong economic growth and progress in the economy in the area [3]. Based on analysis, Gross Regional Domestic Product (GRDP) has a positive impact on economic growth [5]. Economic growth is positively influenced by GRDP at constant prices. An increase in gross regional domestic product (GRDP) can contribute to the economic growth of a region.

Knowledge of GRDP can provide assistance to decision makers in planning appropriate policies to encourage economic growth in a region. GRDP is also used as an indicator of a region's economic performance. Evaluation of the success of regional economic development can be done by looking at changes in GRDP values from time to time. An increasing GRDP is a sign that economic growth in a region is positive.

Leading Sector (Leading Business Sector)

Leading sectors or superior sectors are economic sectors that have a significant contribution to the economic growth of a region. As a sector with a high growth rate and the potential to become a leading sector, the leading sector can be the focus of economic development in a region. Leading sectors can be identified based on high growth and the potential to become a leading sector (Reuveny & Thompson, 2001). As a sector that has a significant contribution to the economic growth of a region, the leading sector can become a focus in regional economic development.

Leading sectors can vary from one region to another. For example, the tourism sector can become the leading sector in one region, while the agricultural sector can become the leading sector in another region. Leading sectors can change from time to time. For example, the information technology sector could become a leading sector in the future, while the manufacturing sector could become a leading sector in the past. Identification of leading sectors can help in formulating economic development policies for a region. Policies can be focused on sectors that have the potential to make a significant contribution to economic growth and improve social welfare.

In regional economic development, identification of leading sectors needs to be done by considering the context and other factors that influence the economic growth of a region. Identification of leading sectors can be used as a basis for determining policy priorities and resource allocation for sectors that have high growth potential. Thus, the leading sector can contribute to reducing the level of poverty in a region. High economic growth can create new jobs and increase people's income, thereby reducing poverty levels.

Examples of leading sectors in a region can vary depending on the characteristics and economic potential of the region. The following are some examples of leading sectors that can be found in a region:

a. Agricultural Sector: If an area has fertile land and favorable climatic conditions, the agricultural sector such as food crops, plantations, livestock or fisheries can become a leading sector. For example, areas with large agricultural land and climatic conditions suitable for rice farming can develop the agricultural sector as a leading sector.
b. Tourism Sector: If an area has natural, cultural or historical potential that is attractive to tourists, the tourism sector can become a leading sector. For example, areas with beautiful beaches, historical tourist attractions, or unique cultural riches can develop the tourism sector as a leading sector.
c. Manufacturing Industrial Sector: If a region has skilled human resources, good infrastructure, and access to a wide market, the manufacturing industrial sector can become a leading sector. For

example, regions with advantages in textile, electronics or automotive production can develop the manufacturing sector as a leading sector.

d. Technology and Innovation Sector: If a region has a thriving startup ecosystem, strong research and development institutions, and access to technology and innovation, the technology and innovation sector can become a leading sector. For example, regions with developing information technology clusters or creative industries can develop this sector as a leading sector.
e. Renewable Energy Sector: If an area has potential renewable energy sources such as solar, wind or biomass energy, the renewable energy sector can become a leading sector. For example, regions with high solar energy potential can develop the renewable energy sector as a leading sector.

In determining the leading sector in a region, there are several criteria that can be used. Several criteria are often used in determining leading sectors, namely:

a. High Growth Rate: Leading sectors have a high economic growth rate compared to other sectors in the region. High growth shows the potential for this sector to continue to develop and make a significant contribution to regional economic growth.
b. Growth Potential: The leading sector has huge growth potential in the region. This potential can be related to regional comparative advantages, abundant natural resources, or other factors that support the growth of the sector.
c. Contribution to GRDP: Leading sectors make a significant contribution to the region's Gross Regional Domestic Product (GRDP). This contribution can be measured from the percentage of added value produced by the sector towards the total added value of the region.
d. Job Creation Potential: Leading sectors have the potential to create new jobs in the region. High sector growth can open up job opportunities for local people and reduce the unemployment rate.
e. Comparative Advantage: A leading sector has a comparative advantage or superiority that differentiates the region from other regions. These advantages can be in the form of natural resources, skilled labor, good infrastructure, broad market access, or other factors that provide an advantage to the sector.

According to [6], there are four conditions that need to be met so that a sector can become a superior or priority sector. First, the sector must produce products with large demand so that growth is fast. Second, production must shift with wider capacity development due to the creative adoption of new technology. Third, there must be an increase in reinvestment of production results, both from the private and government sectors. And finally, the sector must be able to influence other sectors.

Location Quotient

The Location Quotient (LQ) analysis method is used to compare the level of development or concentration of an economic sector in a particular region with other regions. This method helps in identifying the comparative advantage or economic specialization of a region. The steps in Location Quotient analysis are as follows:

a. Determine the sector to be tested, namely choosing a particular economic sector that you want to analyze to find out the extent to which the sector contributes to the regional economy.
b. Calculate Total Employment or Production Value by collecting data on total employment or production value (depending on available data) for the selected economic sector in the region to be analyzed.
c. Calculate Total Employment or Production Value at the National or Reference Level by determining the total employment or production value for the same economic sector at the national level or other reference area that will be used as a comparison.
d. Calculate Location Quotient (LQ) with the following formula:

LQ = (Total Jobs or Production Value in the Region / Total Jobs or Production Value at the National or Reference Level) ÷ (Total Jobs or Production Value in the Region / Total Jobs or Production Value at the National or Reference Level)

Interpret the results of the LQ analysis to help understand which economic sectors are the relative strengths of the region and which sectors require more attention for regional economic development with the following references:

1. If LQ > 1 means the sector is more developed or more concentrated in a particular area compared to the reference area. This indicates the region's comparative advantage in the sector.
2. If LQ = 1, it means that the proportion of the economic sector in the area being analyzed is the same as the reference area. In practice, this condition is relatively difficult to realize.
3. If LQ < 1, it means that the sector is less developed or less concentrated in a particular area compared to the reference area.

Therefore, Location Quotient analysis can provide valuable insights into a region's economic specialization and help in making better economic policy decisions to increase the region's competitiveness and economic growth.

Previous research

Research on GRDP and economic growth can provide a deeper understanding of the relationship between these two factors. A high GDP growth rate indicates positive economic growth and progress in a region's economy. GRDP has a significant influence on the level of poverty in an area. Research shows that GRDP growth contributes to reducing poverty levels [3]. High economic growth can create new jobs and increase people's income, thereby reducing poverty levels. Changes in GRDP values over time can be used to evaluate the success of policies that have been implemented in regional economic development. An increase in GRDP shows positive economic growth.

Furthermore, there are several studies that utilize Location Quotient analysis to determine leading sectors in a region, including [7]; [8]; [9];[10];[11];[12];[13];[14];[15];[16]. Based on several studies related to GRDP and the Location Quotient method, it can be concluded that the LQ and DLQ methods can be used to determine the leading sectors in a region. The difference between this research and several previous studies according to the researcher's observations is (1) the determination of leading sectors at the provincial level and district/city level at the same time in one province, especially in Timir Nusa Tenggara Province, has never been done, and (2) this research adds economic growth projections the next few years in East Nusa Tenggara using the ARIMA method.

2. METHOD

Types of research

This type of research is qualitative research that uses the Location Quotient (LQ) analysis method and Dynamic Location Quotient (DLQ) analysis to determine which sectors are the leading business sectors and which business sectors are the supporting sectors each year. LQ and DLQ analyzes are simultaneously used to show various sectors that are currently superior and will remain superior in the future in the East Nusa Tenggara Province region.

Data Types and Sources

The data used in this research is secondary data published by the Central Statistics Agency in the form of Gross Regional Domestic Product (GRDP) data at provincial and district or city levels in the Nusa Tenggara Province region based on constant prices in 2010 according to business fields from 2017 to 2022 This data can be accessed by anyone because this data is a publication of the BPS of East Nusa Tenggara Province and can be downloaded on the BPS page of East Nusa Tenggara Province. Meanwhile, to project GDP growth, quarterly GDP data for East Nusa Tenggara Province is used from the first quarter of 2010 to the third quarter of 2023.

Method of collecting data

Collection was carried out by downloading data from the BPS page which includes the central BPS page (https://www.bps.go.id/), the East Nusa Tenggara Province BPS page (https://ntt.bps.go.id/) , and the duration of the BPS in each district or city within the NTT Province.

Data analysis method

Methods used in this research are Location Quotient (LQ) Analysis, Dynamic Location Quotient (DLQ) Analysis, and ARIMA (Autoregressive Integrated Moving Average) Analysis.

Location Quotient (LQ) Analysis

Location Quotient (LQ) analysis is used to measure the economic performance of certain regions. This analysis is used to examine which business fields or sectors in the economic structure are included in the category of leading business sectors. Calculations using the LQ Formula are obtained in two stages. The first stage is to calculate the proportion of the contribution of business fields in a region to the overall contribution of business fields in that region. In the second stage, calculate the proportion of contributions from similar business fields in the first step for the level or levels above it. For example, calculating the LQ value of a province, then the level above it is the national level where the province is located. The LQ value is a comparison between the first stage proportion value and the second stage proportion value [17] according to the following formula:

$$LQ = \frac{B_{ij}/B_j}{B_{in}/B_n}$$

The notation B_i is the GRDP of business field i in the province, B_j is the total GRDP in the province. B_{in} is the GDP of business field i in a country and B_n is the total GDP in the country where the province is located. The figures obtained are then analyzed with reference to if the LQ is more than 1, it indicates that

the business sector is the leading business sector. If the LQ is less than 1, it indicates that the business sector is a supporting business sector for leading business sectors, whereas if the LQ is equal to 1, it indicates that the business sector can only meet the needs of its own region.

Dynamic Location Quotient (DLQ) Analysis

DLQ is an analysis that involves observing changes in LQ over time. DLQ is an LQ analysis in the form of a time series which shows the rise and fall of LQ observed in a particular business field in different time periods [18]. According to [19], DLQ is a concept that involves re-analyzing LQ by considering acceleration or deceleration factors in output growth in economic sectors observed in a certain time period. Nugroho (2000) states that the Dynamic LQ formula is:

$$DLQ = \left[\frac{(1+h_{ij})/(1+h_j)}{(1+h_i)/(1+h_p)}\right]^t$$

Meanwhile, the symbol t represents the duration of the research. The notation h_{ij} shows the average speed of rise and fall in production in a business field or sector i in a region (for example at the provincial level), while h_j is the average speed of rise and fall of GDP at the provincial level. H_i is the average speed of rise and fall in production in business field or sector i at the country level, while H_p shows the average speed of rise and fall of GDP at the country level. The next analysis uses the criterion that if the DLQ value is more than 1, then the opportunity for a business field or sector to develop faster than other business sectors at the provincial level. If the DLQ value is equal to 1, it indicates that the opportunity for a business sector to develop is no different or the same as other business sectors at the provincial level. Meanwhile, if the DLQ value is less than 1, then the opportunity for the business sector at the provincial level to develop more slowly than other business sectors at the provincial level is.

Combined LQ and DLQ Analysis

LQ analysis is static, while DLQ analysis is dynamic. A combined analysis of these two methods can be used to determine the current position of the business sector or a sector and its potential for development in the future by paying attention to the comparison of the growth rate of the business sector or the growth rate of other sectors in a region [19]. The criteria used in this combined analysis are:

There are four categories in the grouping of business sector positions, namely:

a. If the LQ value is > 1 and the DLQ value is > 1, this condition shows that the business sector is a leading sector and in the future has the potential to remain a leading sector.
b. If the LQ value is < 1 and the DLQ value is > 1, this condition indicates that the business sector will experience a change in position from a non-leading sector to a leading sector in the future.
c. If the LQ value is > 1 and the DLQ value is < 1, it indicates that the business sector will experience a change in position from a leading sector to a non-leading sector in the future.
d. If the LQ value is < 1 and the DLQ value is < 1, this condition indicates that the business sector is a non-leading sector and in the future will remain a non-leading sector.

3. RESULT AND DISCUSSION

The government has the main objective in carrying out development in every business sector, namely to improve people's welfare. However, this development effort must be carried out effectively and efficiently due to limited resources. This condition encourages the government to set priorities in development. Regional governments must also be wise in implementing priority development programs, not only the central government. In determining activity or program priorities, it is important to know which sectors are superior or sectors which support superior sectors in a particular area. In this way, it will be easier for central and regional governments to set more appropriate development priorities.

Overview of the Economic Conditions of East Nusa Tenggara

Descriptive analysis using the average LQ illustrates the potential picture of East Nusa Tenggara Province from 2017 to 2022. An LQ value of more than one indicates that the region is able to meet the needs of its own region and is also able to export to other regions. The results in Table 3 show that East Nusa Tenggara Province from year to year is able to meet the needs of its own region and is also able to export to other regions. However, the East Nusa Tenggara Provincial Government must be vigilant because based on the results in Table 3 it is known that the LQ value is decreasing from year to year. This indicates a decrease in the level of regional independence, several business sectors that were previously basic (leading) areas have changed to non-basic sectors.

http://ejournal.seaninstitute.or.id/index.php/Ekonomi
Jurnal Ekonomi, Volume 12, No 04 2023
ISSN: 2301-6280 (print) ISSN: 2721-9879 (online)

Table 3 Average LQ Value for East Nusa Tenggara Province

Year	Average LQ
2017	1,200
2018	1,194
2019	1,185
2020	1,172
2021	1,159
2022	1,138

Classification of Leading Sectors for East Nusa Tenggara Province

Location Quotient Analysis is a tool used to determine whether a sector falls into the base or non-base category. The classification of leading sectors (base) or supporting leading sectors (non-base) based on the Location Quotient Analysis of East Nusa Tenggara Province can be seen in Table 4. The results of the LQ analysis based on Table 4 show that there are quite a lot of leading sectors in East Nusa Tenggara Province. The leading sector is indicated by an LQ value of more than one. Of the 17 business sectors, 8 of them are basic sectors. An LQ value of more than one indicates that East Nusa Tenggara Province can not only meet the needs of its own region, but is able to export to other regions.

Table 4. Results of LQ Analysis for East Nusa Tenggara Province

No	Sector	LQ Value						Average LQ	Category
		2017	2018	2019	2020	2021	2022		
1	Agriculture, Forestry and Fisheries	2,176	2,156	2,158	2,142	2,206	2,239	2,18	Basis
2	Mining and Quarrying	0,181	0,180	0,184	0,163	0,159	0,156	0,17	Non Basis
3	Processing Industry	0,060	0,061	0,064	0,062	0,057	0,058	0,06	Non Basis
4	Procurement of Electricity and Gas	0,073	0,076	0,074	0,085	0,085	0,084	0,08	Non Basis
5	Water Supply, Waste Management, Waste and Recycling	0,805	0,805	0,794	0,803	0,851	0,841	0,82	Non Basis
6	Construction	1,091	1,094	1,080	1,007	1,048	1,020	1,06	Basis
7	Wholesale and Retail Trade; Car and Motorcycle Repair	0,874	0,894	0,920	0,899	0,896	0,909	0,90	Non Basis
8	Transportation and Warehousing	1,270	1,281	1,244	1,287	1,277	1,116	1,25	Basis
9	Provision of accommodation and food and drink	0,233	0,247	0,249	0,202	0,203	0,215	0,22	Non Basis
10	Information and Communication	1,734	1,700	1,640	1,660	1,598	1,549	1,65	Basis
11	Financial Services and Insurance	0,991	0,985	0,953	1,002	1,012	1,005	0,99	Non Basis
12	Real Estate	0,863	0,874	0,827	0,796	0,797	0,807	0,83	Non Basis
13	Company Services	0,157	0,147	0,139	0,089	0,075	0,072	0,11	Non Basis
14	Government Administration, Defense and Mandatory Social Security	3,817	3,838	3,967	4,151	4,021	3,997	3,97	Basis
15	Education Services	2,821	2,742	2,738	2,718	2,654	2,625	2,72	Basis
16	Health Services and Social Activities	1,995	1,994	1,939	1,814	1,791	1,760	1,88	Basis
17	Other services	1,251	1,222	1,178	1,040	0,971	0,891	1,09	Basis

The leading sectors of East Nusa Tenggara Province include the Agriculture, Forestry and Fisheries Sectors; Construction Sector; Transportation and Warehousing Sector; Information and Communication Sector; Government Administration, Defense and Mandatory Social Security Sectors; Education Services Sector; Health Services and Social Activities Sector; and Other Service Sectors. The Government Administration, Defense and Mandatory Social Security sectors are the most favored sectors in East Nusa Tenggara Province because they have the largest average LQ value (3.97).

The Indonesian government chose East Nusa Tenggara Province as one of the leading tourist destinations such as Labuhan Bajo and Komodo Island. The East Nusa Tenggara Provincial Government can take advantage of this opportunity to boost economic growth. This opportunity is in the Transportation and Warehousing Sector, which is one of the leading sectors in East Nusa Tenggara Province. However, this tourism opportunity needs to be supported by other supporting sectors, namely, the Accommodation and Food and Drink Provision Sector considering that this sector is not yet a leading sector in this province.

Classification of Regency/City Leading Sectors in East Nusa Tenggara Province

Table 4.3 below is a recapitulation of the results of the LQ and DLQ analysis for the provincial and district/city levels in the East Nusa Tenggara Province region. Based on this table, it can be seen that Kupang City has the most leading business sectors (basis) compared to other districts/cities in the East Nusa Tenggara Province region, namely 14 business sectors. Meanwhile, West Sumba and Central Sumba districts are districts that do not have any superior business sectors at all. This is different from the conditions in East Sumba Regency, apart from having 5 leading business sectors, this district has the most business sectors that will develop more quickly in the future, namely 14. Meanwhile, Sikka Regency only has 3 business sectors that will develop faster in the future. This number is the smallest compared to other districts/cities. These conditions must of course be of concern to the East Nusa Tenggara Provincial

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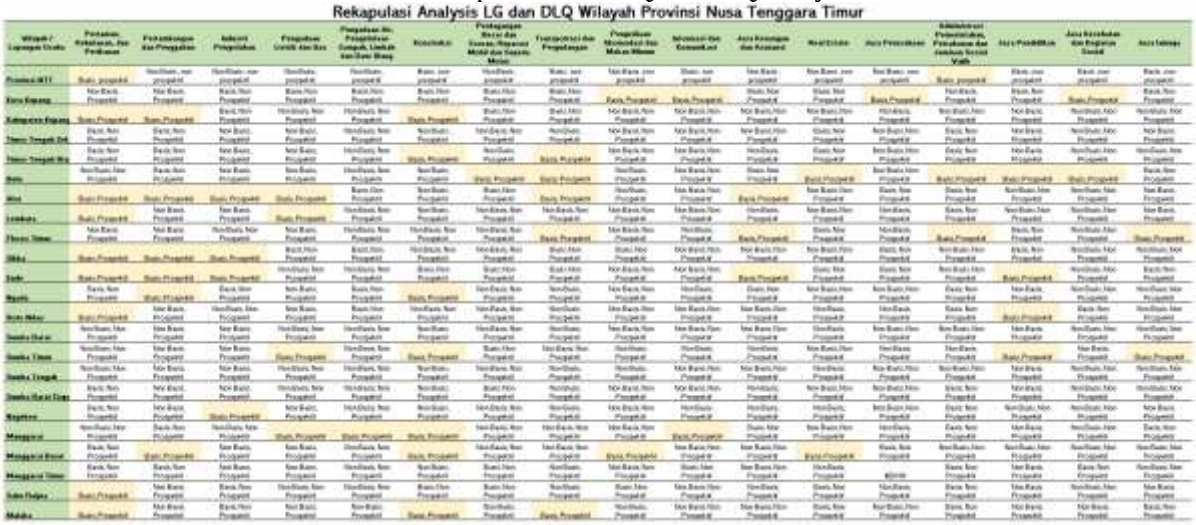
government in the development planning process in its region, so that these two districts are not further left behind by other districts/cities.

Table 5 Recapitulation of LQ and DLQ Analysis Results

Rekapulasi Analysis LG dan DLQ Wilayah Provinsi Nusa Tenggara Timur



Based on the business sector, the Agriculture, Forestry and Fisheries sectors and the Government Administration, Defense and Mandatory Social Security sectors are the sectors that appear most prominent at the district/city level in the East Nusa Tenggara Province region, namely appearing in 16 and 15 districts/ city. This condition is in line with the superior sectors owned by the provincial government. Furthermore, the Accommodation and Food and Drink Provision sector as well as the Information and Communication sector are the business sectors that appear the least at the district/city level, namely appearing in 4 districts/cities. This condition must of course be of concern to the provincial government considering that these two sectors are one of the tourism supporting sectors which is one of the development targets in the province of East Nusa Tenggara. Furthermore, the most prospective sector to develop more rapidly in the future is the mining and quarrying sector, which appears in 17 districts/cities. In the development process, this must also be a concern for the NTT provincial government so that mining and quarrying activities can be controlled properly so as not to damage the environment. Environmental damage will also bring huge costs to local governments.

Combined LQ and DLQ Analysis

The analysis method which combines static LQ Analysis and DLQ Analysis can be used to see the position of the business sector and its potential in the future by paying attention to the comparison of the growth rate of the business sector in Majalengka Regency with the growth rate of the same sector at the provincial level [19].

D.1. Combined LQ and DLQ Analysis of East Nusa Tenggara Province

Based on the results of the analysis of the combined LQ Analysis and DLQ Analysis methods in East Nusa Tenggara Province, it can be seen in Table 6. Business sectors that are still classified as superior and also have the potential to become superior sectors in the future are the Agriculture, Forestry and Fisheries sectors and the Government Administration, Defense and Mandatory Social Security sectors. These two sectors are the basis and have the potential to remain the basis in the following years. These two sectors can not only meet the needs of East Nusa Tenggara Province, but have the potential to also meet needs outside the East Nusa Tenggara Province area.

There are 5 business sectors which remain sectors that support the basic sector, namely the Mining and Quarrying Sector, the Processing Industry Sector, the Accommodation and Food and Drink Provision Sector, the Real Estate Sector, and the Corporate Services Sector. Four sectors that need intensive attention because they have the potential to become basic sectors in the future are the Electricity and Gas Procurement sector, the Water Procurement Sector, Waste, Waste and Recycling Management, the Wholesale and Retail Trade Sector; Car and Motorcycle Repair Sector; and the Financial Services and Insurance Sector. These four sectors have the potential to become superior in the future.

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Table 6 Combined LQ and DLQ Analysis of East Nusa Tenggara Province

	Sectoral Contribution	
	DLQ > 1 (Prospective)	DLQ < 1 (Non Prospective)
LQ > 1 (Base)	• Agriculture, Forestry and Fisheries • Government Administration, Defense and Mandatory Social Security	• Construction • Transportation and Warehousing • Information and Communication • Education Services • Health Services and Social Activities • Other services
LQ < 1 (Non Base)	• Procurement of Electricity and Gas • Water Supply, Waste Management, Waste and Recycling • Wholesale and Retail Trade; Car and Motorcycle Repair • Financial Services and Insurance	• Mining and excavation • Processing industry • Provision of accommodation and food and drink • Real Estate • Company Services

D.2. Combined Analysis of LQ and DLQ of Regencies/Cities in East Nusa Tenggara Province

Based on table 5, there are 9 districts or cities that have the Agriculture, Forestry and Fisheries sectors as leading sectors and in the future have the potential to remain as leading sectors, namely Kupang Regency , Alor Regency, Lembata Regency, Sikka Regency, Ende Regency, Rote Ndao Regency, Sabu Raijua Regency, and Malacca Regency. However, only 2 districts or cities have superior sectors and in the future have the potential to remain superior sectors in the Government Administration, Defense and Mandatory Social Security sectors, namely Belu Regency and East Flores Regency. The predicates for the two sectors in the district or city are the same as the predicates at the provincial level. At the district or city level, apart from the Agriculture, Forestry and Fisheries sectors, the Mining and Quarrying sector and the Construction sector are the leading and projective sectors owned by the majority of districts and cities in the province of East Nusa Tenggara. This shows that there is harmony in development planning between the provincial government and the district or city government, especially for the Agriculture, Forestry and Fisheries sectors. This cannot be denied considering the extensive land for agriculture, forestry and fisheries in the province of East Nusa Tenggara.

The East Nusa Tenggara Provincial Government needs to pay more attention to areas that do not have leading sectors and in the future have the potential to remain leading sectors. Some of these areas are South Central Timor Regency, Central Sumba Regency, West Sumba Regency, Southwest Sumba Regency, East Manggarai Regency. Even West Sumba and Central Sumba Regencies do not have superior sectors. One interesting thing is, in several of these districts, the percentage of poor people for the East Nusa Tenggara Province region in 2022 is relatively high, namely South Central Timor Regency (25.45%), Central Sumba Regency (32.51%), Sumba Regency West (27.47%), Southwest Sumba Regency (27.16%), East Manggarai Regency (25.35%), even Central Sumba Regency has the highest percentage of poor people in the province of East Nusa Tenggara. Therefore, more attention is needed in the development planning process by local regional governments, provincial governments and the central government. In terms of numbers, the districts or cities that have a relatively large number of leading sectors and have the potential to remain leading sectors in the future are Belu and Alor Regencies, each with 6 sectors.

D.3. ARIMA analysis

The calculation of projected GRDP levels uses quarterly GRDP data at cash prices in 2010 from Quarter 1 of 2010 to Quarter 3 of 2023. After testing the stationary data and determining the ARIMA model with a significance level of 5%, it was determined that the best ARIMA model was ARIMA (3.1 ,3) as presented in table 7 below:

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Table 7 Best ARIMA Model Testing Table

ARIMA	Prob. (Significance)	R-squared	Akaike info criterion	Schwarz criterion	Hannan-Quinn criterion	Residual Diagnostics
0,1,1	Significant	0.387475	29.23187	29.34237	29.27448	Prob all lags above 5%
0,1,2	Not Significant	-	-	-	-	
0,1,3	Not Significant	-	-	-	-	
1,1,0	Not Significant	-	-	-	-	
1,1,1	Not Significant	-	-	-	-	
1,1,2	Not Significant	-	-	-	-	
1,1,3	Not Significant	-	-	-	-	
2,1,0	Significant	0.324750	29.35933	29.50666	29.41615	Prob all lags below 5%
2,1,1	Not Significant	-	-	-	-	
2,1,2	Not Significant	-	-	-	-	
2,1,3	Not Significant	-	-	-	-	
3,1,0	Significant	0.821495	28.14123	28.32540	28.21226	Prob all lags below 5%
3,1,1	Significant	0.880984	27.80837	28.02937	27.89360	Prob half the amount of lag below 5%
3,1,2	Significant	0.903108	27.66311	27.92095	27.76255	Prob 1 lag is 0.049
3,1,3	Significant	0.917220	27.57372	27.86838	27.68736	Prob all lags above 5%
4,1,0	Significant	0.899431	27.65059	27.87159	27.73582	Prob ¾ lag amount below 5%
4,1,1	Not Significant	-	-	-	-	
4,1,2	Not Significant	-	-	-	-	
4,1,3	Not Significant	-	-	-	-	

Furthermore, with the best model, namely ARIMA (3.13), a GRDP projection is carried out up to Quarter 4 of 2025 as shown in the following table in 8.

Table 8 GRDP of East Nusa Tenggara Province Period I Quarter 2010 to Quarter IV 2025

Period	GRDP	Period	GRDP	Period	GRDP	Period	GRDP
2010Q1	10,273,687.70	2014Q1	12,775,726.30	2018Q1	15,455,622.67	2022Q1	17,120,537.05
2010Q2	10,759,680.60	2014Q2	13,269,193.10	2018Q2	16,218,623.23	2022Q2	18,194,927.68
2010Q3	11,251,411.00	2014Q3	14,016,178.00	2018Q3	17,065,147.69	2022Q3	18,457,392.37
2010Q4	11,561,829.40	2014Q4	14,046,876.90	2018Q4	17,189,799.96	2022Q4	18,922,419.91
2011Q1	10,899,373.20	2015Q1	13,373,769.30	2019Q1	16,264,674.01	2023Q1	17,753,263.98
2011Q2	11,557,845.00	2015Q2	13,923,817.50	2019Q2	17,240,214.68	2023Q2	18,954,217.00
2011Q3	11,819,683.50	2015Q3	14,727,497.20	2019Q3	17,729,000.95	2023Q3	18,840,976.62
2011Q4	12,057,225.90	2015Q4	14,745,709.20	2019Q4	18,155,126.74	2023Q4	19,391,231.85
2012Q1	11,487,988.20	2016Q1	14,025,485.40	2020Q1	16,749,130.05	2024Q1	18,132,417.06
2012Q2	12,087,395.00	2016Q2	14,673,437.70	2020Q2	16,900,205.30	2024Q2	19,374,727.05
2012Q3	12,545,033.30	2016Q3	15,470,099.00	2020Q3	17,418,970.49	2024Q3	19,434,518.94

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Period	GRDP	Period	GRDP	Period	GRDP	Period	GRDP
2012Q4	12,742,771.10	2016Q4	15,508,990.30	2020Q4	17,741,308.43	2024Q4	19,966,848.26
2013Q1	12,081,262.80	2017Q1	14,718,949.39	2021Q1	16,787,641.09	2025Q1	18,730,303.04
2013Q2	12,735,576.00	2017Q2	15,445,054.07	2021Q2	17,630,189.97	2025Q2	19,972,833.91
2013Q3	13,330,915.60	2017Q3	16,229,974.57	2021Q3	17,830,788.99	2025Q3	20,027,815.00
2013Q4	13,357,434.30	2017Q4	16,331,432.43	2021Q4	18,292,036.60	2025Q4	20,542,674.72
2011Q4	12,057,225.90	2015Q4	14,745,709.20	2019Q4	18,155,126.74	2023Q4	19,391,231.85

Based on figure 2 below, in general the level of GRDP is projected to increase compared to previous periods. One thing that must be paid attention to at the beginning of each semester is that the realization of GRDP always decreases compared to the previous period. Several things that can be used as solutions so that GRDP does not decrease in each semester 1 are carrying out the budget realization process and distributing fund transfers to regions as early as possible in order to provide a multiplier effect which will result in not reducing the realization of GRDP in the first semester.

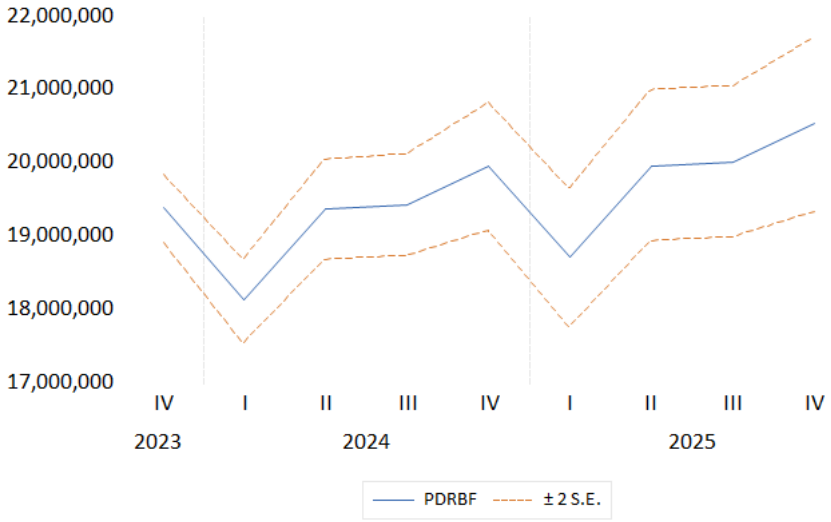

Figure 1 GRDP Projection Graph for Quarter 3 2023 to Quarter 4 2025

4. CONCLUSION

Based on the results of the analysis and discussion, several conclusions were obtained as follows: In general, the average LQ value for NTT Province is more than one, which shows that NTT Province is able to meet the needs of its own region and is also able to export to other regions. However, from year to year this capability is decreasing because several business sectors are experiencing a repositioning from previously being base to non-base. The NTT Provincial Government needs to be aware of this. NTT Province has 2 sectors which are currently superior (base) and have the potential to remain base in the future, namely the Agriculture, Forestry and Fisheries sectors as well as the Government Administration, Defense and Mandatory Social Security sectors. The Agriculture, Forestry and Fisheries sectors are superior sectors and have the potential to remain superior sectors in the future, namely in Kupang Regency, Alor Regency, Lembata Regency, Sikka Regency, Ende Regency, Rote Ndao Regency, Sabu Raijua Regency and Malacca Regency. However, only 2 districts or cities have superior sectors and in the future have the potential to remain superior sectors in the Government Administration, Defense and Mandatory Social Security sectors, namely Belu Regency and East Flores Regency. Kupang City has the largest number of leading (basis) business sectors compared to other districts/cities in the NTT Province region, namely 14 business sectors. Meanwhile, West Sumba and Central Sumba Regencies do not have any leading business sectors at all. The Agriculture, Forestry and Fisheries sectors and the Government Administration, Defense and Mandatory Social Security sectors are the sectors that appear to be the most

prominent at the district/city level in the NTT Province region, namely appearing in 16 and 15 districts/cities. This condition is in line with the superior sectors found in the provincial government. Furthermore, the Accommodation and Food and Drink Provision sector as well as the Information and Communication sector are the business sectors that appear the least at the district/city level, namely appearing in 4 districts/cities. The GRDP projection is in accordance with ARIMA (3,1,3), in general the GRDP level increases from the third quarter of 2023 to the fourth quarter of 2025 compared to previous periods, but the GRDP projection always experiences a decline in the first quarter compared to the previous period.

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