

Analysis of Leading Economic Sectors in Jayapura City

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Abstract

This study aims to analyze the sectoral classification in Jayapura City and determine the economic sectors that can become the mainstay sectors in the Jayapura City economy during the period 2011-2023. The analysis is conducted based on Gross Regional Domestic Product (GRDP) data based on sector contributions to growth, the Growth Ratio Model, and overlay analysis. Data are obtained from official sources, such as publications of the Central Statistics Agency and regional economic reports. Based on the Growth Ratio Model (MRP), sectors in Jayapura City can be classified into several categories. Sectors that fall into classification I, or "dominant growth," include electricity and gas procurement, construction, wholesale and retail trade, information and communication, financial services and insurance, real estate, and government administration. Meanwhile, sectors such as agriculture, manufacturing industry, and corporate services are in classification II, showing prominent growth at the provincial level but less developed at the district level. The mining and quarrying sector falls into classification IV, with low growth at both the provincial and district levels. Furthermore, based on the overlay analysis, it was found that the mainstay sectors in the Jayapura City economy are construction and wholesale and retail trade, which show significant contributions to regional economic growth. Other potential sectors include government administration, information and communication, and financial services and healthcare, which have shown stable growth and significant contributions. With policies supporting these sectors, such as infrastructure improvements, service modernization, and strengthening the logistics system, these sectors can serve as key pillars of sustainable economic growth in Jayapura City.

Keywords: *Economic Growth, Growth Ratio Model, Leading Sectors.*



A. INTRODUCTION

Economic growth constitutes a fundamental foundation for understanding the economic dynamics of a region, including in the City of Jayapura, as it reflects the capacity of an economy to expand its production, income, and welfare indicators over time. Economic growth is generally defined as a long-term process characterized by an increase in a country's productive capacity, which is commonly measured through sustained expansion in real national income or real gross domestic product. This expansion signals not only higher output levels but also improvements in the efficiency of resource allocation and technological utilization within the regional economy. In regional contexts, economic growth serves as a key macroeconomic indicator for assessing development performance, structural transformation, and competitiveness. Growth performance often illustrates how effectively local governments manage natural resources, human capital, and investment inflows to stimulate productive activities. From a classical development perspective, the accumulation of capital, labor force expansion, and technological progress are

considered primary drivers that shape long-term growth trajectories. Endogenous growth theory further emphasizes that innovation, knowledge spillovers, and human capital formation play strategic roles in sustaining economic expansion within both national and sub-national economies (Romer, 1990). Empirical growth literature also demonstrates that productivity improvements and institutional quality significantly influence regional growth disparities and long-run income convergence (Barro, 1991). In this regard, economic growth should not be interpreted solely as a numerical increase in output but as a multidimensional process involving structural strengthening and developmental resilience. Sadono Sukirno (2000) emphasizes that economic growth is not merely reflected in quantitative increases in production, but also in the stability and continuity of such increases in the long term, ultimately aimed at fostering societal prosperity and welfare. Analyzing regional economic growth such as in Jayapura requires an integrative perspective that considers production expansion, institutional capacity, and sustainability dimensions simultaneously.

Export base theory provides an additional analytical perspective in examining regional economic growth by emphasizing the strategic role of external demand in driving local economic expansion. Within this framework, regional growth is fundamentally influenced by the performance of export-oriented activities that generate income inflows from outside the region, which subsequently circulate within the local economy through multiplier effects. The theoretical roots of this perspective can be traced to classical trade theory, particularly the work of David Ricardo, who introduced the principle of comparative advantage to explain how specialization in the production of goods and services with relatively lower opportunity costs can enhance overall economic efficiency. Ricardo argues that a country or region should concentrate on producing commodities that can be generated at relatively lower costs compared to trading partners, thereby maximizing gains from trade. By applying this principle, nations and sub-national regions can enhance productivity, optimize resource allocation, and strengthen their competitive positioning in global and interregional markets. In regional science literature, export base theory further posits that economic expansion is largely determined by the growth of “basic sectors,” namely industries that sell products beyond regional boundaries and attract external revenues (North, 1955). These external revenues stimulate secondary growth in non-basic sectors such as retail, services, and local infrastructure through income and employment multipliers. Export base theory is also closely linked to the development of leading sectors specific economic sectors possessing substantial growth potential and the capacity to contribute significantly to regional economic performance. Such sectors, including information technology, agriculture, and tourism, are typically characterized by strong comparative advantages, innovation capacity, and high market competitiveness. Their development often reflects structural transformation processes in which regions shift from traditional to higher value-added activities. When a region successfully identifies and develops its leading sectors, it can leverage export base dynamics to expand sectoral exports, attract investment, and stimulate technological diffusion (Krugman, 1991). The strengthening of export-oriented

leading sectors not only increases regional output but also enhances employment generation, fiscal capacity, and long-term economic resilience.

The phenomenon of sectoral growth and sectoral contribution in the City of Jayapura from 2011 to 2023 reflects diverse economic dynamics, marked by significant variation in each sector's contribution to the Gross Regional Domestic Product (GRDP). Sectoral growth data indicate that the construction sector dominates, with an average growth rate reaching 13%. This sector plays a crucial role in job creation and infrastructure development, both of which serve as key pillars in driving economic growth in Jayapura. The wholesale and retail trade sector, including motor vehicle and motorcycle repair services, also demonstrates strong performance, recording an average growth rate of 9.90%. This suggests that trade activities function as a major engine of economic movement, where increasing demand for goods and services stimulates broader economic activities particularly within the context of urbanization and population growth. The financial services and insurance sector, with an average growth rate of 11.92%, contributes significantly to Jayapura's economy. Beyond providing essential financial services, this sector enhances business efficiency and supports the expansion of commercial activities within the city.

Such as transportation and warehousing, with an average growth rate of 11.22%, indicate that accessibility and goods distribution systems are becoming increasingly vital in supporting sustainable economic growth. However, several sectors exhibit relatively slower growth performance. The agriculture, forestry, and fisheries sector, despite possessing substantial potential, recorded an average growth rate of only 8.17%. This condition suggests that the sector may be facing structural challenges related to climate change impacts, productivity constraints, and inefficient agricultural practices. The manufacturing sector, which grew at 7.64%, reflects the need for greater efficiency enhancement and industrial innovation to enable more substantial contributions to regional economic performance. These disparities illustrate that not all sectors benefit equally from economic expansion, thereby highlighting the urgency of targeted development strategies.

Sectoral contribution patterns present a relatively similar structure. The construction sector emerges as the largest contributor, accounting for 22.90% of the Gross Regional Domestic Product (GRDP), followed by the wholesale and retail trade sector, which contributes 16.49%. Other sectors, including corporate services and government administration, also demonstrate notable contributions, reflecting the increasingly significant role of non-agricultural sectors in sustaining regional economic growth. This structural shift indicates an ongoing transformation of Jayapura's economic foundation from resource-based activities toward service- and infrastructure-driven growth.

The linkage between empirical studies on economic growth in the City of Jayapura and the observed phenomena of sectoral growth and contribution can be systematically examined through the application of Growth Ratio Model (GRM) analysis as a quantitative regional economic assessment tool. The Growth Ratio Model serves as an analytical instrument designed to evaluate the proportional growth

performance of individual economic sectors relative to broader regional or national economic expansion. Through this comparative mechanism, GRM enables researchers to distinguish between sectors experiencing accelerated growth and those demonstrating lagging performance within the regional economic structure. In the context of Jayapura, this approach facilitates the identification of sectors with the strongest potential to function as primary growth drivers, while simultaneously revealing structural constraints that may hinder balanced regional development. Methodologically, GRM operates by decomposing sectoral growth rates and benchmarking them against aggregate economic growth, thereby producing ratio indicators that reflect sectoral competitiveness and dynamism. Such analytical decomposition is essential for understanding whether sectoral expansion is driven by endogenous regional strengths or by broader macroeconomic trends (Dunn, 1960). Sectoral ratio analysis contributes to diagnosing structural transformation processes, particularly shifts from primary to secondary or tertiary economic activities within developing regions. Growth Ratio Model analysis not only identifies key sectors but also promotes a deeper understanding of how policy direction and investment allocation can be strategically optimized to maximize sectoral contributions. This is particularly relevant in regional planning, where targeted fiscal incentives, infrastructure provision, and human capital investments must align with high-growth sectors (Glasson, 1977). Empirical sectoral growth modeling strengthens development planning by integrating statistical evidence with spatial economic strategies, enabling more precise prioritization frameworks (Esteban-Marquillas, 1972). By utilizing empirical data and research findings, evidence-based decision-making can be formulated to foster sustainable and inclusive economic growth in the City of Jayapura, ensuring that leading sectors are not only productive but also resilient and development-oriented over the long term.

B. METHOD

This study employs four analytical models to comprehensively examine regional economic performance, namely: growth analysis, contribution-to-growth analysis, the Growth Ratio Model (GRM), and overlay analysis. Each analytical approach is applied to capture different dimensions of sectoral dynamics and their respective roles in driving regional economic expansion. The operationalization of these models is further elaborated through the following analytical formulations:

1. Growth Analysis

$$LPx = \frac{X_t - X_{t-1}}{X_{t-1}} \times 100\%$$

Where:

LPx : Growth rate of sector X

X_t : Gross Regional Domestic Product (GRDP) value of sector X in year t

X_{t-1} : Gross Regional Domestic Product (GRDP) value of sector X in year t-1

2. Contribution to Growth Analysis

$$SPx = \frac{X_t - X_{t-1}}{Y_{t-1}} \times 100\%$$

Where:

X_t : Gross Regional Domestic Product (GRDP) value of sector X in year t

X_{t-1} : Gross Regional Domestic Product (GRDP) value of sector X in year t-1

Y_{t-1} : Total Gross Regional Domestic Product (GRDP) value in year t-1

3. Growth Ratio Model (GRM) Analysis

Yusuf (1999) provides a conceptual explanation regarding the calculation of growth ratios. According to Yusuf, the growth of an economic activity within a specific region when compared to a broader reference region will generate a growth ratio that reflects the relative performance of the activity. There are two ratio measurements used to assess developmental dynamics within this framework. The first is the growth ratio of the study area, referred to as the Study Region Growth Ratio (RPs), while the second is the growth ratio of the reference area, known as the Reference Region Growth Ratio (RPr). Both ratios constitute the primary indicators employed in Growth Ratio Model (GRM) analysis. Their calculations are formulated as follows:

$$RPs = \frac{(Yipt - Yip0)/Yip0}{(Ypt - Yp0)/Yp0}$$

$$RPs = \frac{(Yint - Yin0)/Yin0}{(Ynt - Yn0)/Yn0}$$

RPs = Growth ratio of the study (analytical) region

RPr = Growth ratio of the reference region

$Yipt$ = GRDP value of sector/category i in the study region p at the end of the observation period

$Yip0$ = GRDP value of sector/category i in the study region p at the beginning of the observation period

Ypt = Total GRDP of the study region p at the end of the observation period

$Yp0$ = Total GRDP of the study region p at the beginning of the observation period

$Yint$ = GRDP value of sector/category i in the reference region at the end of the observation period

$Yin0$ = GRDP value of sector/category i in the reference region at the beginning of the observation period

Ynt = Total GRDP of the reference region at the end of the observation period

$Yn0$ = Total GRDP of the reference region at the beginning of the observation period.

The results of the Growth Ratio Model (GRM) analysis are interpreted into four categorical classifications:

a. $RPs > 1$ and $RPr > 1$ (Positive-Positive)

This condition indicates that the growth of sector/category i is equally high in both the reference region and the study region. It reflects strong developmental potential of sector i across both regions, suggesting that the sector can be further expanded at regional and broader economic levels.

b. $RPs > 1$ and $RPr < 1$ (Positive–Negative)

This classification shows that the growth of sector/category i in the study region is higher and demonstrates stronger development potential compared to the reference region, where sectoral growth is relatively lower and less prospective.

c. $RPr > 1$ and $RPs < 1$ (Negative–Positive)

This condition represents the inverse of the second category. Sector/category i exhibits higher growth and stronger development potential in the reference region, whereas in the study region the sector grows more slowly and shows limited development prospects.

d. $RPs < 1$ and $RPr < 1$ (Negative–Negative)

This category indicates that the growth of sector/category i is relatively low in both the study region and the reference region. Sectors within this group are considered to have minimal potential for development, either at the regional or national level.

The data analyzed in this study consist of Gross Regional Domestic Product (GRDP) and Gross Domestic Product (GDP) at constant prices covering the period from 2010 to 2022. The City of Jayapura is designated as the study (analytical) region, while the Province of Papua serves as the reference region for comparative growth analysis.

4. Overlay Analysis

Overlay analysis is incorporated to complement the previous analytical models in order to identify leading, highly potential, potential, moderately potential, and less potential sectors. This approach is conducted by determining which sectors demonstrate growth rates, contribution-to-growth values, Study Region Growth Ratios (RPs), and Reference Region Growth Ratios (RPr) that are either above or below their respective average values.

Sectors with indicator values exceeding the average are assigned a positive sign (+) for each calculated indicator. Conversely, sectors with values below the average are assigned a negative sign (-). After all sectors have been classified based on these positive and negative indicators, the total number of positive signs for each sector is calculated. Sectoral potential is then categorized according to the following criteria:

a. Leading / Highly Potential Sector

A sector is classified as leading or highly potential if it records four positive (+) indicators.

b. Potential Sector

A sector is categorized as potential if it records three positive (+) indicators.

c. Moderately Potential Sector

A sector is considered moderately potential if it records two positive (+) indicators.

d. Less Potential Sector

A sector is classified as less potential if it records only one positive (+) indicator or none at all.

C. RESULT AND DISCUSSION

1. Overview of Economic Growth

This section presents an overview of economic growth, economic structure, and sectoral contributions to regional economic expansion in the City of Jayapura, particularly during the 2011–2023 period. Sectoral growth is measured based on increases in value added or the respective contributions of each sector to the Gross Regional Domestic Product (GRDP).

Economic structure refers to the composition and distribution of various sectors forming the regional economy, as reflected in each sector's contribution to total output or GRDP. This structure illustrates the extent to which a region's economy depends on particular sectors and reveals the proportional distribution of economic activities across the primary sector (agriculture and natural resource extraction), the secondary sector (industry and manufacturing), and the tertiary sector (services).

Theoretical perspectives on contribution to economic growth can be explained through several analytical approaches that elaborate the key factors influencing output expansion or GRDP growth. These approaches provide a conceptual basis for understanding how sectoral performance shapes the trajectory of regional economic development.

Table 1. Sectoral Economic Growth of Jayapura City, 2011-2023

Business Field/ Economic Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Average
Agriculture, Forestry, and Fisheries	8.29	13.28	12.15	15.26	13.52	14.44	6.00	10.14	5.95	0.75	1.97	6.84	-2.46	8.17
Mining and Quarrying	20.18	19.14	17.01	14.57	14.29	14.58	8.13	8.22	6.50	5.40	6.50	1.72	5.04	10.87
Manufacturing	10.55	9.95	10.72	14.52	9.61	11.78	10.29	9.24	2.96	-3.42	1.76	4.93	6.36	7.64
Electricity and Gas Supply	-4.64	20.18	-11.82	11.63	27.31	25.95	15.82	7.42	7.25	-0.64	3.82	7.64	5.79	8.90
Water Supply, Waste Management, and Recycling	5.91	6.25	11.61	11.93	6.82	5.48	4.39	5.49	0.62	-3.18	1.94	4.23	5.43	5.15
Construction	24.03	21.72	25.17	27.70	17.25	14.75	7.82	6.63	6.85	3.28	5.73	4.01	4.04	13.00
Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles	6.64	15.03	16.50	13.02	11.80	13.29	7.93	10.33	7.04	0.74	4.55	11.97	9.80	9.90
Transportation and Warehousing	13.60	12.50	16.33	18.08	10.58	14.23	10.20	9.14	9.92	-27.57	16.51	21.77	20.57	11.22
Accommodation and Food Service Activities	16.51	12.99	19.86	20.42	13.09	11.48	5.40	4.31	6.79	-20.33	7.58	7.31	6.63	8.62
Information and Communication	13.17	14.56	9.16	7.15	9.28	7.54	5.12	4.31	1.67	3.57	2.47	4.03	3.07	6.55
Financial and Insurance Activities	17.34	18.53	23.82	17.19	7.19	9.79	6.04	12.12	6.77	-2.58	5.67	12.09	21.04	11.92
Real Estate Activities	17.55	27.97	18.58	16.86	9.83	10.39	9.17	4.22	4.70	-0.97	3.09	6.39	7.47	10.40
Business Activities	18.46	12.81	11.40	12.10	11.58	10.45	7.25	13.31	8.73	-2.80	2.95	10.00	14.63	10.07
Public Administration, Defense, and Compulsory Social Security	18.23	14.98	9.39	18.53	11.86	14.14	10.90	10.29	6.68	-0.64	-3.01	1.90	-0.87	8.65
Education Services	12.73	11.93	12.36	8.06	10.09	7.56	8.35	6.51	1.93	-2.39	-9.24	3.90	12.09	6.45
Human Health and Social Work Activities	16.19	12.38	16.54	14.62	13.09	13.32	8.40	6.78	8.20	6.22	6.98	5.87	6.48	10.39
Other Service Activities	15.02	14.43	14.18	13.14	12.03	10.26	7.69	7.97	7.30	-0.31	2.34	5.97	5.45	8.88

Business Field/ Economic Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Average
Gross Regional Domestic Product (GRDP)	14.94	16.23	16.11	16.98	12.48	12.56	8.02	8.20	6.26	-0.95	3.50	6.91	6.68	9.84

Analysis and discussion of sectoral GRDP growth based on 17 business fields. When grouped, these business sectors can be divided into three categories, namely; the A, M, and S sector groups.

- a. Primary Sector Group (Agriculture = A) consists of; Agriculture, Forestry, and Fisheries Sector and Mining and Quarrying Sector
- b. Secondary Sector Group (Manufacture = M) consists of; Manufacturing Sector, Electricity and Gas Supply Sector, Water Supply, Waste Management, and Recycling Sector, and Construction Sector
- c. Tertiary Sector Group (Service = S) consists of; Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles Sector, Transportation and Warehousing Sector, Accommodation and Food Service Activities Sector, Information and Communication Sector, Financial and Insurance Activities Sector, Real Estate Sector, Business Activities Sector, Public Administration, Defense, and Compulsory Social Security Sector, Education Services Sector, Human Health and Social Work Activities Sector, and Other Service Activities Sector.

From the sectoral GRDP growth table, it can be observed that::

- a. Business sectors included in the Primary Sector group, namely the Agriculture, Forestry, and Fisheries Sector, experienced a decline from 2011–2023, although it had previously increased from 2011, which was recorded to grow by 8.29%, and rose in 2014, which was recorded to grow by 15.26%. After that, it continued to decline until 2023, which was recorded to grow only by 2.46%. Even so, the Agriculture, Forestry, and Fisheries Sector is considered a moderately developing sector as seen from its average growth rate of 8.17%. Meanwhile, the Mining and Quarrying Sector only experienced a decline, namely from 2011 recorded to grow by 20.18% until 2023 it decreased significantly to 5.04%. However, the Mining and Quarrying Sector is considered relatively advanced as seen from its average growth rate of 10.87%.
- b. Business sectors included in the Secondary Sector, namely the Manufacturing Sector, experienced an increase from 2011 recorded at 10.55% to 2014 recorded at 14.52%. After that, the Manufacturing Sector continued to decline until 2023, which was recorded at 6.36%. Thus, the average growth of this sector only reached 7.64%.
- c. The Electricity and Gas Supply Sector experienced an increase from 2011–2015, from -4.64% to 27.31%. However, from 2016–2023 it continued to decline, which was previously recorded at 25.95% and changed to 5.79%. Nevertheless, based on its average growth of 8.90%, this sector can be categorized as moderately advanced.
- d. The Water Supply, Waste Management, and Recycling Sector experienced an increase from 2011–2014, from 5.91% to 11.93%. However, after that it

continued to decline until 2023, even showing only a slight increase of 5.43%. Therefore, its average value is only 5.15%, and this sector can be categorized as relatively less advanced.

- e. The Construction Sector experienced an increase from 2011–2014, from 24.03% to 27.70%. However, after that it continued to decline until 2023, reaching 4.04%. Even so, this sector is considered relatively advanced compared to other sectors as reflected in its average growth rate of 13.00%.
- f. Business sectors included in the Tertiary Sector, namely the Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles Sector, experienced an increase from 2011–2013, from 6.64% to 16.50%. However, after that it continued to decline until 2023, recorded at 9.80%, although it had increased in 2022 to 11.97%. Thus, this sector is considered moderately developing as seen from its average growth of 9.90%.
- g. The Transportation and Warehousing Sector continued to decline from 2011–2020, from 13.60% to –27.57%. However, the sector rebounded from 2021–2023, from 16.51% to 20.57%. Therefore, this sector can be categorized as moderately developing based on its average growth rate of 11.22%.
- h. The Accommodation and Food Service Activities Sector experienced an increase from 2011–2014, from 16.51% to 20.42%. After that, it declined from 2015–2023, from 13.09% to 6.63%. Thus, this sector is considered moderately advanced with an average growth of 8.62%.
- i. The Information and Communication Sector only increased within one year, namely from 2011–2012, recorded from 13.17% to 14.56%. The rest of the period shows continuous decline until 2023, recorded at only 3.07%. Therefore, this sector is categorized as less advanced with an average growth rate of only 6.55%.
- j. The Financial and Insurance Activities Sector experienced an increase from 2011–2013, recorded from 17.34% to 23.82%. However, it declined until 2020, reaching –2.58%. The sector then increased again until 2023, reaching 21.04%. Thus, this sector is categorized as relatively advanced with an average growth rate of 11.92%.
- k. The Real Estate Sector experienced an increase only within one year, from 2011–2012, from 17.55% to 27.97%. However, it declined from 2013–2020, from 18.58% to –0.97%. After that, the sector increased again until 2023, reaching 7.47%. Thus, this sector is categorized as moderately advanced with an average growth of 10.40%.
- l. The Business Activities Sector continued to decline from 2011–2020, from 18.46% to –2.80%. However, it increased again until 2023, reaching 14.63%. Therefore, this sector is categorized as moderately advanced with an average growth of 10.07%.
- m. The Public Administration, Defense, and Compulsory Social Security Sector experienced a decline over two years, from 2011–2013, from 18.23% to 9.39%. The sector then increased again in 2014 to 18.53%, but declined again in 2015 to

11.86%. It rose again in 2016 to 14.14%, and afterward continued to decline until 2023, reaching -0.87% . Thus, this sector is categorized as moderately advanced with an average growth rate of 8.65%.

- n. The Education Services Sector experienced fluctuations annually, particularly from 2011–2018. However, it declined continuously from 2019–2021, from 1.93% to -9.24% . After that, it increased again until 2023, reaching 12.09%. Therefore, this sector is categorized as less advanced with an average growth rate of only 6.45%.
- o. The Human Health and Social Work Activities Sector declined from 2011–2012, from 16.19% to 12.38%, then increased again in 2013 to 16.54%. After that, it declined from 2014–2022, from 14.62% to 6.48%. Even so, this sector is categorized as moderately advanced with an average growth rate of 8.88%.
- p. The Other Service Activities Sector continued to decline from 2011–2020, from 15.02% to -0.31% . After that, the sector increased again from 2021–2023, from 2.34% to 5.45%.

Therefore, the total GRDP from 2011 to 2023 fluctuated significantly each year, ultimately declining by 6.68% in 2023. This brings the average GRDP in terms of sectoral growth to 9.84%, indicating a significant improvement in sectoral growth.

Table 2. Economic Structure of Jayapura City, 2011–2023

Business Field / Economic Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Average
Agriculture, Forestry, and Fisheries	6.12	5.96	5.76	5.68	5.73	5.82	5.71	5.82	5.80	5.90	5.81	5.81	5.31	5.84
Mining and Quarrying	0.46	0.47	0.47	0.46	0.47	0.48	0.48	0.48	0.48	0.51	0.52	0.50	0.49	0.48
Manufacturing	3.02	2.85	2.72	2.66	2.60	2.58	2.63	2.66	2.57	2.51	2.47	2.42	2.42	2.66
Electricity and Gas Supply	0.05	0.06	0.04	0.04	0.05	0.05	0.05	0.05	0.05	0.05	0.06	0.06	0.06	0.05
Water Supply, Waste Management, and Recycling	0.18	0.16	0.16	0.15	0.14	0.13	0.13	0.12	0.12	0.12	0.11	0.11	0.11	0.14
Construction	18.63	19.51	21.04	22.96	23.94	24.40	24.36	24.00	24.14	25.17	25.71	25.01	24.39	22.90
Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles	16.47	16.30	16.36	15.80	15.71	15.81	15.79	16.11	16.22	16.50	16.67	17.46	17.97	16.49
Transportation and Warehousing	5.23	5.06	5.07	5.12	5.04	5.11	5.21	5.26	5.44	3.98	4.48	5.10	5.76	5.08
Accommodation and Food Service Activities	2.10	2.04	2.11	2.17	2.18	2.16	2.11	2.03	2.04	1.64	1.71	1.71	1.71	1.99
Information and Communication	11.19	11.03	10.37	9.50	9.23	8.82	8.58	8.27	7.92	8.28	8.20	7.98	7.71	9.17
Financial and Insurance Activities	4.45	4.54	4.84	4.85	4.63	4.51	4.43	4.59	4.61	4.54	4.63	4.85	5.51	4.67
Real Estate Activities	4.77	5.26	5.37	5.36	5.24	5.14	5.19	5.00	4.93	4.92	4.91	4.88	4.92	5.04
Business Activities	3.67	3.56	3.41	3.27	3.25	3.19	3.16	3.31	3.39	3.33	3.31	3.40	3.66	3.39

Business Field / Economic Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Average
Public Administration, Defense, and Compulsory Social Security	13.05	12.91	12.16	12.32	12.25	12.42	12.76	13.00	13.05	13.10	12.27	11.70	10.87	12.47
Education Services	4.56	4.40	4.25	3.93	3.85	3.67	3.69	3.63	3.48	3.43	3.01	2.92	3.07	3.75
Human Health and Social Work Activities	3.78	3.66	3.67	3.60	3.61	3.64	3.65	3.60	3.67	3.94	4.07	4.03	4.02	3.76
Other Service Activities	2.27	2.23	2.19	2.12	2.11	2.07	2.06	2.06	2.08	2.09	2.07	2.05	2.03	2.12
Gross Regional Domestic Product (GRDP)	100	100	100	100	100	100	100	100	100	100	100	100	100	100

Table 2 above shows the development of the economic structure of Jayapura City during the 2011–2023 period, where the economic structure is assessed based on the contribution of each sector to total GRDP, which can be explained as follows.

- a. The Agriculture, Forestry, and Fisheries Sector experienced a decline from 2011–2023, recorded at 6.12% and decreasing to 5.31%. Thus, its average value became 5.84%, and it can be said that the economic structure of this sector is low.
- b. The Mining and Quarrying Sector did not experience any increase and even tended to decline slightly to 0.49%. Therefore, the economic structure of this sector can be categorized as very low.
- c. The Manufacturing Sector did not experience any increase annually and even declined until 2023, recorded at 2.66%.
- d. The Electricity and Gas Supply Sector also did not experience any increase annually, and by 2023 it was only recorded at 0.05%. Thus, this sector can be categorized as very low.
- e. The Water Supply, Waste Management, and Recycling Sector likewise did not experience any increase, and by 2023 it was only recorded at 0.11%. Therefore, the economic structure of this sector is also categorized as very low.
- f. The Construction Sector experienced growth from 2011–2023 and continued to increase, although it fluctuated during 2019–2023. Therefore, the economic structure of this sector can be categorized as advanced with an average value of 22.90%, and this sector shows the most significant structural increase compared to other economic sectors.
- g. The Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles Sector experienced a highly fluctuating economic structure. Ultimately, in 2023 it increased to 17.97%. Thus, the economic structure of this sector can be categorized as moderately advanced.
- h. The Transportation and Warehousing Sector did not experience any increase, and by 2023 it was only recorded at 5.08%. Therefore, the economic structure of this sector is categorized as very low.

- i. The Accommodation and Food Service Activities Sector did not experience any increase and even declined until 2023 to 1.99%. Thus, the economic structure of this sector is categorized as very low.
- j. The Financial and Insurance Activities Sector increased by only 1% in 2023, reaching 5.51%. Therefore, the economic structure of this sector is categorized as very low.
- k. The Real Estate Sector experienced a highly fluctuating economic structure and ultimately declined in 2023 to 4.92%. Thus, the economic structure of this sector is categorized as very low.
- l. The Business Activities Sector did not experience any increase until 2023, with a recorded value of only 3.39%.
- m. The Public Administration, Defense, and Compulsory Social Security Sector experienced fluctuations annually, and ultimately in 2024 was recorded at 12.47%. Thus, the economic structure of this sector can be categorized as moderately advanced.
- n. The Education Services Sector experienced a decline and fluctuations in 2022 and 2023, and ultimately was recorded at 3.75%. Therefore, the economic structure of this sector is categorized as very low.
- o. The Human Health and Social Work Activities Sector increased by only 1%, and by 2023 was recorded at 4.02%. Thus, the economic structure of this sector is categorized as very low, with an average value of 3.76%.
- p. The Other Service Activities Sector did not experience any increase at all until 2023, being recorded at only 2.03%. Therefore, the economic structure of this sector is categorized as very low:

Table 3. Sectoral Contribution to Economic Growth of Jayapura City, 2011–2023

Business Field / Economic Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Average
Agriculture, Forestry, and Fisheries	0.54	0.81	0.72	0.88	0.77	0.83	0.35	0.58	0.35	0.04	0.12	0.40	-0.14	0.48
Mining and Quarrying	0.09	0.09	0.08	0.07	0.07	0.07	0.04	0.04	0.03	0.03	0.03	0.01	0.03	0.05
Manufacturing	0.33	0.30	0.31	0.40	0.26	0.31	0.27	0.24	0.08	-0.09	0.04	0.12	0.15	0.21
Electricity and Gas Supply	0.00	0.01	-0.01	0.00	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Water Supply, Waste Management, and Recycling	0.01	0.01	0.02	0.02	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.01	0.01
Construction	4.15	4.05	4.91	5.83	3.96	3.53	1.91	1.62	1.64	0.79	1.44	1.03	1.01	2.76
Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles	1.18	2.48	2.69	2.13	1.86	2.09	1.25	1.63	1.13	0.12	0.75	2.00	1.71	1.62
Transportation and Warehousing	0.72	0.65	0.83	0.92	0.54	0.72	0.52	0.48	0.52	-1.50	0.66	0.97	1.05	0.54
Accommodation and Food Service Activities	0.34	0.27	0.41	0.43	0.28	0.25	0.12	0.09	0.14	-0.42	0.12	0.12	0.11	0.18
Information and Communication	1.50	1.63	1.01	0.74	0.88	0.70	0.45	0.37	0.14	0.28	0.20	0.33	0.24	0.65

Business Field / Economic Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Average
Financial and Insurance Activities	0.76	0.83	1.08	0.83	0.35	0.45	0.27	0.54	0.31	-0.12	0.26	0.56	1.02	0.55
Real Estate Activities	0.82	1.34	0.98	0.91	0.53	0.54	0.47	0.22	0.23	-0.05	0.15	0.31	0.36	0.52
Business Activities	0.66	0.47	0.41	0.41	0.38	0.34	0.23	0.42	0.29	-0.09	0.10	0.33	0.50	0.34
Public Administration, Defense, and Compulsory Social Security	2.31	1.95	1.21	2.25	1.46	1.73	1.35	1.31	0.87	-0.08	-0.39	0.23	-0.10	1.09
Education Services	0.59	0.54	0.54	0.34	0.40	0.29	0.31	0.24	0.07	-0.08	-0.32	0.12	0.35	0.26
Human Health and Social Work Activities	0.61	0.47	0.60	0.54	0.47	0.48	0.31	0.25	0.30	0.23	0.27	0.24	0.26	0.39
Other Service Activities	0.34	0.33	0.32	0.29	0.26	0.22	0.16	0.16	0.15	-0.01	0.05	0.12	0.11	0.19
Gross Regional Domestic Product (GRDP)	14.94	16.23	16.11	16.98	12.48	12.56	8.02	8.20	6.26	-0.95	3.50	6.91	6.68	9.84

Based on the data on sectoral contributions to the economic growth of Jayapura City above, the role of each sector in economic growth can be explained as follows.

- a. Agriculture, Forestry, and Fisheries: The average contribution is 0.48%. This sector contributed positively until 2022; however, it experienced a decline in contribution in 2023 with a value of -0.14%.
- b. Mining and Quarrying: The average contribution is relatively small, at 0.05%, stable but less significant.
- c. Manufacturing: The average contribution is 0.21%. This sector experienced a decline in 2019 and 2020 but recovered in the following years.
- d. Electricity and Gas Supply: The contribution is almost insignificant, with an average of 0.00%.
- e. Water Supply, Waste Management, Waste, and Recycling: The average contribution is only 0.01%, stable with very slight changes.
- f. Construction: This sector has a relatively large contribution to economic growth with an average of 2.76%. However, its contribution declined significantly after 2014.
- g. Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles: This sector has an average contribution of 1.62%, with its peak occurring in 2012.
- h. Transportation and Warehousing: The average contribution is 0.54%. This sector experienced a drastic decline in 2020 with a negative contribution (-1.50%).
- i. Accommodation and Food Service Activities: The average contribution is 0.18%, with a sharp decline in 2020.
- j. Information and Communication: The average contribution is 0.65%, relatively high in 2011 but declining afterward.
- k. Financial and Insurance Activities: The average contribution is 0.55%, experiencing considerable fluctuations during the period.

- l. Real Estate: The average contribution is 0.52%, relatively stable but declined in 2020.
- m. Business Activities: The average contribution is 0.34%, stable with relatively small changes.
- n. Public Administration, Defense, and Compulsory Social Security: The average contribution is 1.09%, with significant declines in several years, especially in 2020 and 2021.
- o. Education Services: The average contribution is 0.26%, stable with slight declines in several years.
- p. Human Health and Social Work Activities: The average contribution is 0.39%, relatively stable.
- q. Other Service Activities: The average contribution is 0.19%; this sector has a small and stable contribution.

The Construction Sector and the Wholesale and Retail Trade Sector are the two largest sectors contributing to Jayapura's GRDP. Meanwhile, the Agriculture, Transportation, and Financial Services sectors have experienced quite significant fluctuations in recent years. It is also evident that sectors included in the primary sector group have not experienced any increase in their contribution to economic growth. Therefore, it can be said that primary sectors are very low in contributing to economic growth. Sectors included in the secondary sector group also did not experience any increase, except for the Construction Sector, which fluctuated annually and ultimately in 2023 experienced a decline in economic growth, recorded at only 1.01%. Thus, it can be stated that the contribution to economic growth within secondary sectors is also very low.

Sectors included in the tertiary sector group did not experience any increase in their contribution to economic growth and even experienced declines. Therefore, sectors within the tertiary group cannot significantly support economic growth contribution. Based on total GRDP, it is also seen that each year experienced a decline, with the total recorded at 9.84%, which can be considered not yet sufficiently advanced.

2. Analysis

The Growth Ratio Model (GRM) analysis is an alternative analytical tool used in determining the description of economic activity planning at the provincial and municipal levels. Sectoral economic growth, economic structure, and contribution to growth are explained theoretically. Sectoral economic growth refers to the increase in output or productivity in specific sectors of an economy, such as agriculture, industry, services, or technology.

The GRM (Growth Ratio Model) is an alternative analytical tool used in determining the description of economic activity planning at the provincial and municipal levels. In general, the Growth Ratio Model is a tool used to examine how specific ratios (for example, capital-to-output ratios, savings-to-investment ratios)

influence growth rates. This model focuses on the efficiency of resource allocation and the relationships among economic variables in generating sustainable growth.

Economic growth ratios are analytical tools used to examine the relationships among important sectors in the economy and the resulting level of economic growth. Table 5.4 below presents 17 Business Field / Economic Sector categories with real GDP, providing an overview of actual economic growth.

Table 4. Growth Ratio Model of Jayapura City, 2011–2023

Business Field / Economic Sector	RPs		RPr		Classification
	Real	Nominal	Real	Nominal	
Agriculture, Forestry, and Fisheries	17.1365	+	0.7522	–	II
Mining and Quarrying	–0.0808	–	0.9804	–	IV
Manufacturing	6.0593	+	0.5064	–	II
Electricity and Gas Supply	4.6888	+	1.1848	+	I
Water Supply, Waste Management, and Recycling	1.1638	+	0.7397	–	II
Construction	1.1320	+	1.6467	+	I
Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles	1.3510	+	1.2039	+	I
Transportation and Warehousing	1.5579	+	0.2672	–	II
Accommodation and Food Service Activities	1.7919	+	0.6823	–	II
Information and Communication	1.0943	+	1.3979	+	I
Financial and Insurance Activities	2.0924	+	1.0697	+	I
Real Estate Activities	1.6635	+	1.3870	+	I
Business Activities	1.6928	+	0.8839	–	II
Public Administration, Defense, and Compulsory Social Security	2.0878	+	1.3027	+	I
Education Services	1.5770	+	1.1684	+	I
Human Health and Social Work Activities	12.4868	+	1.4144	+	I
Other Service Activities	1.2914	+	1.1963	+	I

From the MRP analysis table, real values and nominal values will be obtained. Then, the combination of these two comparisons will produce a description of potential economic activities at the Regency or Provincial regional level consisting of four classifications, namely:

- a. Classification I, namely (+) and (+), means that the sector at the Provincial level has prominent growth and likewise at the Regency regional level. Sectors included in Classification I are referred to as growth-dominant sectors. These sectors include Electricity and Gas Supply; Construction; Wholesale and Retail Trade, Repair of Motor Vehicles and Motorcycles; Information and Communication; Financial and Insurance Activities; Real Estate; Public Administration, Defense, and Compulsory Social Security; Education Services; Human Health and Social Work Activities; and lastly Other Service Activities.
- b. Classification II, namely (+) and (–), means that the activity at the Provincial level has prominent growth but at the Regency regional level is not yet prominent. In more detailed analysis, at the Regency level the growth is

prominent, but at the village level it is not prominent. Sectors included in Classification II are; Agriculture, Forestry, and Fisheries; Manufacturing; Water Supply, Waste Management, and Recycling; Transportation and Warehousing; Accommodation and Food Service Activities; and Business Activities.

- c. Classification IV, namely (-) and (-), means that the sector at the Provincial/Regency regional level has low growth characteristics. This sector is Mining and Quarrying.

Based on the various growth indicators above (sectoral growth, contribution to growth, RPs and RPr), an Overlay analysis can be conducted. In this context, overlay analysis means combining various economic indicators from each sector to obtain more comprehensive insight into the growth and economic structure of a region or country. This table is also used to analyze the comparison between the growth of the sector or region being studied (RPs) and the broader reference growth (RPr). Table 5 is used to see how well the performance of a sector or region compares with growth standards derived from national or larger regional data.

Table 5. Basic Indicators of Overlay Analysis

Business Field/Economic Sector	Growth	Contribution to Growth	RPs	RPr
Agriculture, Forestry, and Fisheries	8.17	0.48	17.14	0.75
Mining and Quarrying	10.87	0.05	-0.08	0.98
Manufacturing	7.64	0.21	6.06	0.51
Electricity and Gas Supply	8.90	0.00	4.69	1.18
Water Supply, Waste Management, and Recycling	5.15	0.01	1.16	0.74
Construction	13.00	2.76	1.13	1.65
Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles	9.90	1.62	1.35	1.20
Transportation and Warehousing	11.22	0.54	1.56	0.27
Accommodation and Food Service Activities	8.62	0.18	1.79	0.68
Information and Communication	6.55	0.65	1.09	1.40
Financial and Insurance Activities	11.92	0.55	2.09	1.07
Real Estate Activities	10.40	0.52	1.66	1.39
Business Activities	10.07	0.34	1.69	0.88
Public Administration, Defense, and Compulsory Social Security	8.65	1.09	2.09	1.30
Education Services	6.45	0.26	1.58	1.17
Human Health and Social Work Activities	10.39	0.39	12.49	1.41
Other Service Activities	8.88	0.19	1.29	1.20
Average	9.22	0.58	1.00	1.00

Overlay analysis in this study is calculated based on the indicators of Growth, Contribution to Growth, RPs, and RPr. The provision used is the (+) sign for values above the Average, and the (-) sign for values below the Average. The following is the comparison of each sector with the Average.

- a. Agriculture, Forestry, and Fisheries:

Growth: - ($8.17 < 9.22$); Contribution to Growth: - ($0.48 < 0.58$); RPs: + ($17.14 > 1.00$); RPr: - ($0.75 < 1.00$); Total Positive: 1, Total Negative: 3

- b. Mining and Quarrying:
Growth: + (10.87 > 9.22); Contribution to Growth: - (0.05 < 0.58); RPs: - (-0.08 < 1.00); RPr: - (0.98 < 1.00); Total Positive: 1, Total Negative: 3
- c. Manufacturing:
Growth: - (7.64 < 9.22); Contribution to Growth: - (0.21 < 0.58); RPs: + (6.06 > 1.00); RPr: - (0.51 < 1.00); Total Positive: 1, Total Negative: 3
- d. Electricity and Gas Supply:
Growth: - (8.90 < 9.22); Contribution to Growth: - (0.00 < 0.58); RPs: + (4.69 > 1.00); RPr: + (1.18 > 1.00); Total Positive: 2, Total Negative: 2
- e. Water Supply, Waste Management, Waste, and Recycling:
Growth: - (5.15 < 9.22); Contribution to Growth: - (0.01 < 0.58); RPs: + (1.16 > 1.00); RPr: - (0.74 < 1.00); Total Positive: 1, Total Negative: 3
- f. Construction:
Growth: + (13.00 > 9.22); Contribution to Growth: + (2.76 > 0.58); RPs: + (1.13 > 1.00); RPr: + (1.65 > 1.00); Total Positive: 4, Total Negative: 0
- g. Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles:
Growth: + (9.90 > 9.22); Contribution to Growth: + (1.62 > 0.58); RPs: + (1.35 > 1.00); RPr: + (1.20 > 1.00); Total Positive: 4, Total Negative: 0
- h. Transportation and Warehousing:
Growth: + (11.22 > 9.22); Contribution to Growth: - (0.54 < 0.58); RPs: + (1.56 > 1.00); RPr: - (0.27 < 1.00); Total Positive: 2, Total Negative: 2
- i. Accommodation and Food Service Activities:
Growth: - (8.62 < 9.22); Contribution to Growth: - (0.18 < 0.58); RPs: + (1.79 > 1.00); RPr: - (0.68 < 1.00); Total Positive: 1, Total Negative: 3
- j. Information and Communication:
Growth: - (6.55 < 9.22); Contribution to Growth: + (0.65 > 0.58); RPs: + (1.09 > 1.00); RPr: + (1.40 > 1.00); Total Positive: 3, Total Negative: 1
- k. Financial and Insurance Activities:
Growth: + (11.92 > 9.22); Contribution to Growth: - (0.55 < 0.58); RPs: + (2.09 > 1.00); RPr: + (1.07 > 1.00); Total Positive: 3, Total Negative: 1
- l. Real Estate:
Growth: + (10.40 > 9.22); Contribution to Growth: - (0.52 < 0.58); RPs: + (1.66 > 1.00); RPr: + (1.39 > 1.00); Total Positive: 3, Total Negative: 1
- m. Business Activities:
Growth: + (10.07 > 9.22); Contribution to Growth: - (0.34 < 0.58); RPs: + (1.69 > 1.00); RPr: - (0.88 < 1.00); Total Positive: 2, Total Negative: 2
- n. Public Administration, Defense, and Compulsory Social Security:
Growth: - (8.65 < 9.22); Contribution to Growth: + (1.09 > 0.58); RPs: + (2.09 > 1.00); RPr: + (1.30 > 1.00); Total Positive: 3, Total Negative: 1
- o. Education Services:
Growth: - (6.45 < 9.22); Contribution to Growth: - (0.26 < 0.58); RPs: + (1.58 > 1.00); RPr: + (1.17 > 1.00); Total Positive: 2, Total Negative: 2

p. Human Health and Social Work Activities:

Growth: + (10.39 > 9.22); Contribution to Growth: - (0.39 < 0.58); RPs: + (12.49 > 1.00); RPr: + (1.41 > 1.00); Total Positive: 3, Total Negative: 1

q. Other Service Activities:

Growth: - (8.88 < 9.22); Contribution to Growth: - (0.19 < 0.58); RPs: + (1.29 > 1.00); RPr: + (1.20 > 1.00); Total Positive: 2, Total Negative: 2

Overall, it can be seen that the Construction Sector and the Wholesale and Retail Trade Sector have the highest number of positive signs, namely 4 positives. This is followed by Public Administration, Health Services, and several other sectors with 3 positives. Meanwhile, other sectors such as Agriculture, Mining, and Manufacturing show more negative signs.

The results of the sectoral growth performance calculations above are then derived into the following overlay table.

Table 6. Overlay Analysis of Leading Sectors of Jayapura City

Business Field / Economic Sector	LPx	SPx	RP _s	RP _r	Total (+)	Criteria
Agriculture, Forestry, and Fisheries	-	-	+	-	1	Less Potential
Mining and Quarrying	+	-	-	-	1	Less Potential
Manufacturing	-	-	+	-	1	Less Potential
Electricity and Gas Supply	-	-	+	+	2	Moderately Potential
Water Supply, Waste Management, and Recycling	-	-	+	-	1	Less Potential
Construction	+	+	+	+	4	Leading
Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles	+	+	+	+	4	Leading
Transportation and Warehousing	+	-	+	-	2	Moderately Potential
Accommodation and Food Service Activities	-	-	+	-	1	Less Potential
Information and Communication	-	+	+	+	3	Potential
Financial and Insurance Activities	+	-	+	+	3	Potential
Real Estate Activities	+	-	+	+	3	Potential
Business Activities	+	-	+	-	2	Moderately Potential
Public Administration, Defense, and Compulsory Social Security	-	+	+	+	3	Potential
Education Services	-	-	+	+	2	Moderately Potential
Human Health and Social Work Activities	+	-	+	+	3	Potential
Other Service Activities	-	-	+	+	2	Moderately Potential

Description:

LP_x : Growth rate of sector X

SP_x : Contribution of sector X to economic growth

RP_s : Growth ratio of the study/analysis region

RP_r : Growth ratio of the reference region

Leading sectors are the most important sectors of a regional economy that provide significant contributions to overall economic growth. In overlay analysis, these sectors are characterized by growth above the Average (+), their contribution to growth also above the Average (+), and having nominal RPs and RPr both marked (+). In other words, in overlay analysis, leading sectors are indicated by a total of four (+) signs.

- a. The sectors classified as leading sectors are the Construction Sector and the Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles Sector.
- b. Potential sectors are the Information and Communication Sector and the Public Administration, Defense, and Compulsory Social Security Sector.
- c. Moderately potential sectors are the Financial and Insurance Activities Sector, the Real Estate Sector, and the Human Health and Social Work Activities Sector.
- d. Less potential sectors are the Agriculture, Forestry, and Fisheries Sector; Mining and Quarrying Sector; Manufacturing Sector; Electricity and Gas Supply Sector; Water Supply, Waste Management, and Recycling Sector; Transportation and Warehousing Sector; Accommodation and Food Service Activities Sector; Business Activities Sector; Education Services Sector; and Other Service Activities Sector.

The sector with the highest sectoral growth is the Construction Sector, although in 2023 the construction sector experienced a decline. The construction sector is included as the highest sector among all sectors in sectoral growth because it has undergone significant development and progress. However, there is also the sector with the lowest sectoral growth, namely the Water Supply, Waste Management, Waste, and Recycling Sector, which continuously experiences decline, and if it increases, it is only by a few percent.

In terms of contribution to economic growth, the most prominent sector among all sectors is the Construction Sector. Although based on its Average value it is only 2.76%, which can still be considered relatively low. However, the Construction Sector is classified as a leading sector along with the Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles Sector because it has growth above the Average, its contribution to growth is also above the Average, and it has nominal RPs and RPr both marked (+), indicated by a total of four (+) signs.

The results of this study also provide several practical policy implications that need to be considered by the Government of Jayapura City. Where policy implications that can be taken to encourage more equitable and sustainable economic growth are as follows:

- a. Priority on the Construction Sector and Wholesale and Retail Trade
The Construction Sector and Wholesale and Retail Trade Sector show the most positive performance across various indicators. Policies need to be focused on supporting these sectors so they remain the main drivers of economic growth. Infrastructure investment, ease of business licensing, and the development of trade areas can further increase the contribution of these sectors. This provides

policy implications, namely: (a) increasing government capital expenditure in infrastructure, (b) encouraging public–private partnerships (PPP), and (c) providing fiscal facilities for trade development.

b. Support for Sectors with Positive–Negative Fluctuations

Sectors such as Transportation and Warehousing, Financial Services, and Real Estate show positive and negative fluctuations across several indicators. The Transportation and Warehousing Sector is important in supporting goods distribution, but its growth remains unstable. Policies that can be taken include improving logistics and transportation facilities integrated with wholesale and retail trade. This provides policy implications, namely: modernization of ports, highways, and transportation facilities, as well as strengthening regulations to create stability in the financial and real estate sectors.

c. Intervention in Sectors with Less Optimal Performance

Sectors such as Agriculture, Mining, and Manufacturing show relatively low performance across almost all indicators. These sectors have the potential to experience better growth through modernization of agricultural techniques and more sustainable natural resource management. The Manufacturing Sector also needs to be enhanced because it has high potential to create added value through local industrialization. This provides policy implications, namely: (1) technological and investment incentives are needed to increase productivity, (2) training programs for the workforce, and (3) environmental protection policies balanced with resource exploitation.

d. Strengthening Public Service and Service Sectors

Sectors such as Public Administration, Health Services, and Education Services play an important role in social welfare and economic stability but require more attention to improve their effectiveness and contribution to GRDP. This provides policy implications, namely: (1) bureaucratic reform, (2) increasing access to health and education services, and (3) more efficient and well-targeted budget allocation for public service sectors.

e. Optimization of Technology-Based Sectors

Information and Communication as well as Financial Services show great potential to contribute more to the economy with the development of digital and financial technology. This provides policy implications, namely: (1) support for digital infrastructure, regulations that support fintech innovation, and (2) digital and financial literacy programs for the community to improve the performance of these sectors.

f. Economic Diversification

Jayapura City still depends on several dominant sectors, while sectors such as Accommodation and Food Service Activities and Other Services still have relatively small contributions. Economic diversification by developing tourism, creative industries, and micro, small, and medium enterprises (MSMEs) can encourage more inclusive growth. This provides policy implications, namely: encouraging investment in tourism and MSME sectors through easier access to

capital, increased regional promotion, and providing training for local business actors.

D. CONCLUSION

The development of sectoral economics in Jayapura City during 2011–2023 shows that several sectors experienced fluctuating growth, with the construction sector and wholesale and retail trade acting as the main drivers. The construction sector continued to show an increase until 2014 and maintained a significant contribution to the Gross Regional Domestic Product (GRDP) of Jayapura City despite declines in subsequent years. On the other hand, the agriculture, forestry, and fisheries sector experienced a decline in contribution since 2015, although it had increased at the beginning of the period. The transportation and warehousing sector also showed varying performance, with contributions that were negative in 2020 but increased again in the following years.

Based on the Growth Ratio Model (GRM), sectors in Jayapura City can be classified into several categories. Sectors classified under Classification I, or “dominant growth,” include the electricity and gas supply sector, construction, wholesale and retail trade, information and communication, financial and insurance services, real estate, and public administration sectors. These sectors show significant growth at both the provincial and regency levels, with consistent contributions. Meanwhile, sectors such as agriculture, manufacturing, and business services fall under Classification II, indicating prominent growth at the provincial level but less development at the regency level. The mining and quarrying sector falls under Classification IV, with low growth at both provincial and regency levels.

Leading sectors in the economy of Jayapura City include the construction sector and wholesale and retail trade, which show high contributions to regional economic growth. Other potential sectors include public administration, information and communication, as well as financial and health services, which demonstrate stable growth and significant contributions. With policies that support these sectors, such as infrastructure improvement, service modernization, and strengthening of logistics systems, these sectors can serve as the main pillars of sustainable economic growth in Jayapura City.

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