THE EFFECTS OF FOREIGN DIRECT INVESTMENT, TOTAL POPULATION, POVERTY, AND UNEMPLOYMENT ON REGIONAL GROSS DOMESTIC PRODUCT (GRDP) ON THE ISLAND OF KALIMANTAN FROM 2015-2024

THESIS

SUBMITTED TO THE FACULTY OF ISLAMIC ECONOMICS AND BUSINESS SUNAN KALIJAGA STATE ISLAMIC UNIVERSITY YOGYAKARTA AS ONE OF THE REQUIREMENTS FOR OBTAINING A BACHELOR'S DEGREE IN SHARIA ECONOMICS

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2026

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With this, I hope that the thesis mentioned above can be submitted soon. I thank you for your attention.

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MOTTO

"Allah does not burden a person beyond their capacity."

(QS. Al-Baqarah: 286)

"If Allah knows there is goodness in your heart, He will surely give you something better than what He has taken from you, and He will forgive you. Allah is the Most Forgiving, the Most Merciful."

(QS. Al-Anfal: 70)

"Finish what you've started; just weather the storm—don't change your course."

(AR)

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My parents' prayers have certainly accompanied every step of my journey. I am deeply grateful to Allah SWT for all the blessings He has bestowed upon me, which have always guided my every step and strengthened me in times of difficulty. I dedicate this thesis with all my heart and sincere respect as a small token of the long journey I have undertaken to :

1. My beloved parents, who never tire of offering their prayers, love, strength, support, sacrifice, and encouragement at every step of my journey. Thank you for being my haven, for lifting me when I'm weary, and for always believing that I can get through every stage of my college education.
2. My beloved family, who have always been there to support me throughout my college years and the process of completing this thesis. Thank you for all your support, care, encouragement, prayers, and companionship. Your presence has been one of the reasons I was able to persevere and see each step of this journey through—even when it wasn't always easy.
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things that may seem simple but turned out to mean so much. Thank you for being friends who made this journey feel lighter and more enjoyable.

5. To my thesis advisor, Ms. Anggari Marya Kresnowati, S.E., M.E., thank you for your time, knowledge, guidance, and patience throughout the process of writing this thesis. Thank you for guiding me from the very beginning until I was finally able to complete what once felt so difficult. Thank you for every piece of feedback, correction, and guidance which might have felt exhausting at the time but which actually helped me continue to learn and improve myself.
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PREFACE

All praise be to Allah, the Most Gracious, the Most Merciful. The grateful author offers thanks to Allah SWT for His abundant mercy and guidance, which enabled the successful completion of this thesis entitled **"**The Effects of Foreign Direct Investment, Total Population, Poverty, and Unemployment on Regional Gross Domestic Product (GRDP) On The Island of Kalimantan from 2015-2024**".** May peace and blessings be upon our Prophet Muhammad SAW, his family, companions, and all his followers until the end of time.

Thanks to the support of various parties, this thesis has finally been completed successfully. Therefore, on this occasion, the author would like to express her deepest gratitude to:

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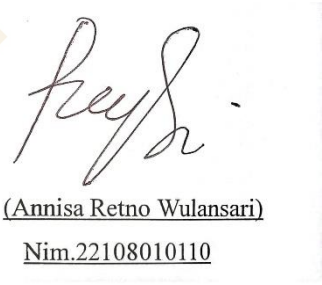
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8. All employees and administrative staff of the Faculty of Islamic Economics and Business, Sunan Kalijaga Yogyakarta State Islamic University.

That concludes my opening remarks. Thank you

Wassalamualaikum wr.wb.

Yogyakarta, 21 August 2026

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ABSTRAK

Penelitian ini bertujuan untuk menganalisis pengaruh investasi langsung asing, total populasi, kemiskinan, dan pengangguran terhadap produk domestik regional bruto (PDRB) di Pulau Kalimantan pada periode 2015–2024. Penelitian ini menggunakan metode kuantitatif dengan data sekunder yang diperoleh dari Badan Pusat Statistik (BPS). Data yang digunakan berupa data panel yang mencakup lima provinsi di Pulau Kalimantan selama periode 2015-2024 dengan jumlah 50 observasi. Analisis dilakukan menggunakan regresi data panel dengan Fixed Effects Model (FEM). Hasil penelitian menunjukkan bahwa investasi langsung asing berpengaruh positif tetapi tidak signifikan terhadap PDRB; total populasi berpengaruh positif dan signifikan terhadap PDRB di Pulau Kalimantan, serta kemiskinan dan pengangguran berpengaruh negatif dan signifikan terhadap PDRB di Pulau Kalimantan. Hasil penelitian menunjukkan bahwa peningkatan kualitas sumber daya manusia serta penurunan kemiskinan dan pengangguran menjadi faktor penting dalam meningkatkan PDRB di Pulau Kalimantan.

Kata kunci : investasi langsung asing, total populasi, kemiskinan, pengangguran, PDRB.

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ABSTRACT

This study aims to analyze the effects of foreign direct investment, total population, poverty, and unemployment on regional gross domestic product (GRDP) on the island of Kalimantan during the 2015-2024 period. This study employs a quantitative method using secondary data obtained from the Central Statistics Agency (BPS). The data used consist of panel data covering five provinces on the island of Kalimantan during the 2015-2024 period, comprising 50 observations. The analysis was conducted using panel data regression with the fixed effects model (FEM). The results indicate that foreign direct investment has a positive but insignificant effect on GRDP; population size has a positive and significant effect on GRDP on the island of Kalimantan; and poverty and unemployment have negative and significant effects on GRDP on the island of Kalimantan. The findings suggest that improving the quality of human resources and reducing poverty and unemployment are key factors in increasing GRDP on the island of Kalimantan.

Keywords: foreign direct investment, population, poverty, unemployment, GRDP

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CHAPTER I

INTRODUCTION

A. Background

Economic growth is one indicator used to measure a society's level of well-being and the success of a region's development (Todaro Michel P & Smith Stephen C, 2012). Economic growth also encompasses a concept that explains the factors determining output growth in the long run (kurniawan, 2017). Progress in regional-scale development can be observed in the gross regional domestic product (GRDP). In Indonesia, efforts to promote economic well-being are not only the responsibility of the central government but also of local governments. One region with great potential but facing the challenge of uneven economic growth is the island of Kalimantan.

The island of Kalimantan is rich in natural resources and has significant economic potential, particularly in the mining, forestry, and manufacturing sectors. This potential is reflected in several economic activities; for example, East Kalimantan's mining and quarrying sectors make a major contribution to the regional GRDP in 2023, their contribution reached 43,19% of East Kalimantan's regional GRDP and in 2024 it remained at approximately 38,38% (BPS, 2024). West Kalimantan also possesses bauxite natural resources that support the development of the aluminum processing industry in Mempawah (Mildan et al., 2021). Additionally, the Port of Kijang in West Kalimantan supports this logistics

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connectivity by facilitating the transportation and distribution of commodities related to bauxite and alumina (Bank Indonesia, 2021).

The phenomenon of economic growth is not merely a national issue but also a serious challenge for developing countries, including Indonesia, in boosting economic growth to improve public welfare and promote interregional equity. This raises an important empirical question: why has such vast natural resource potential not yet been able to drive equitable growth? In the context of modern economic development, the role of local regions has become increasingly important, as economic contributions are no longer concentrated in the central government (Nasrul Haq, 2018). However, policies formulated by the government are often not grounded in principles of equity (Faidza & Al Ayubi, 2025). This has led to various development problems such as inequality, poverty, and social and economic disparities.

In national development, each region in Indonesia has different economic characteristics. The island of Kalimantan is the focus of this study because it has abundant natural resources, contributes to the national economy, and plays an important role in the development of the Capital City of Nusantara (IKN). The development of the Capital City of Nusantara (IKN) is a driver for increased investment, infrastructure development, and accelerated regional economic development. Kalimantan's economic structure, which is dominated by the extractive sector, makes it vulnerable to fluctuations in commodity prices and global dynamics, so it can be

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studied from the perspective of foreign direct investment, total population, poverty, and unemployment.

In addition to education, investment and labor are the main drivers of economic growth in the Kalimantan region, as proven by Haq & Yuliadi (2018), who found that both variables have a significant effect on increasing economic output and regional capital expenditure. Compared to Java, whose economy is more dominated by the industrial and service sectors, Papua faces the challenge of unstable data, making it less suitable for long-term analysis. Investments and new infrastructure development, such as the Capital City of Nusantara (IKN), make the island of Kalimantan a relevant place of study to understand how investment affects economic growth and equitable distribution.

The island of Kalimantan plays a significant role in the national economy, thanks to its mining, plantation, and manufacturing sectors, which make major contributions to Indonesia's Gross Regional Domestic Product (GRDP). However, during the 2015–2024 period, GRDP growth across the provinces of Kalimantan remained uneven. In 2015, for example, the RDP growth rate in Central Kalimantan reached 7.01%, while East Kalimantan experienced a decline in RDP of -1.20%, due to its reliance on the mining sector, which was impacted by falling global commodity prices. By 2024, the situation had changed: East Kalimantan's GRDP grew by 6.17%, surpassing Central Kalimantan's growth of 4.46% and North Kalimantan's growth of 4.57% (BPS, 2025). These differences in GRDP growth rates

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indicate that economic development across Kalimantan remains uneven among the provinces, given that each province has a distinct economic structure and most still rely heavily on extractive sectors that are sensitive to fluctuations in global commodity prices (Maisari, 2022). GRDP serves as a key metric for understanding a region's economic situation, as it allows us to evaluate a region's capacity to manage and utilize its available resources.

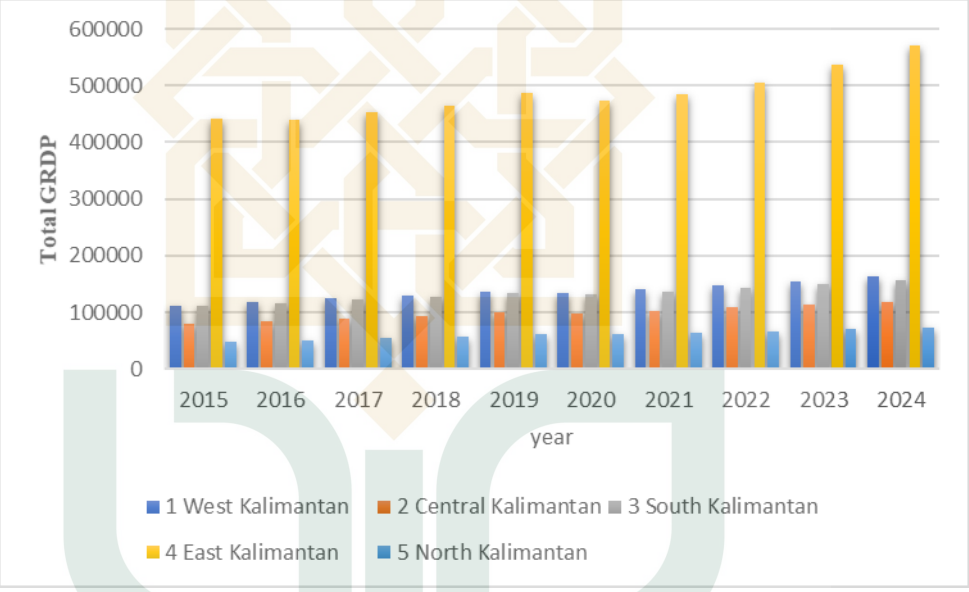


Figure 1.1 Total Gross Regional Domestic Product (GRDP) of Kalimantan Provinces, 2015–2024

Sources: BPS indonesia (Processed data)

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According to data from the Central Statistics Agency (BPS), economic growth occurred in five provinces: West Kalimantan, East Kalimantan, North Kalimantan, South Kalimantan, and Central Kalimantan. The 2015–2024 period showed fairly sharp fluctuations in economic growth across provinces. In 2015 and 2016, economic development was relatively consistent across most provinces, except for East Kalimantan, which

experienced a decline due to falling global commodity prices, while North Kalimantan recorded fairly high growth. From 2017 to 2019, the economic situation showed a positive and stable trend, with Central Kalimantan frequently recording growth above 5% due to the strong performance of its manufacturing sector. However, in 2020, a significant simultaneous decline was observed across all provinces due to the impact of the COVID-19 pandemic, which brought economic activity to a massive halt. From 2021 through 2023, the graph shows a clear upturn as the mining, construction, and manufacturing sectors resumed operations, peaking in 2024, when East Kalimantan continued to dominate economic growth in the region.

One factor influencing economic growth is foreign direct investment. Foreign direct investment in Indonesia plays a significant role in driving economic growth through two mechanisms: capital accumulation and the transfer of technology and new knowledge (Fazaalloh, 2024). In addition, foreign direct investment can create new jobs, increase productivity, and strengthen the competitiveness of local industries. According to Muryanto, foreign direct investment serves as an economic driver that has been declining due to a lack of capital (the savings-investment gap), which is necessary for economic development to take place. However, the effectiveness of foreign direct investment as a driver of growth is not always guaranteed if the relationship between international and local companies is weak, infrastructure is limited, and human resources

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are inadequate. If these three aspects remain severely limited, the positive impact of foreign direct investment on economic growth may be hindered.

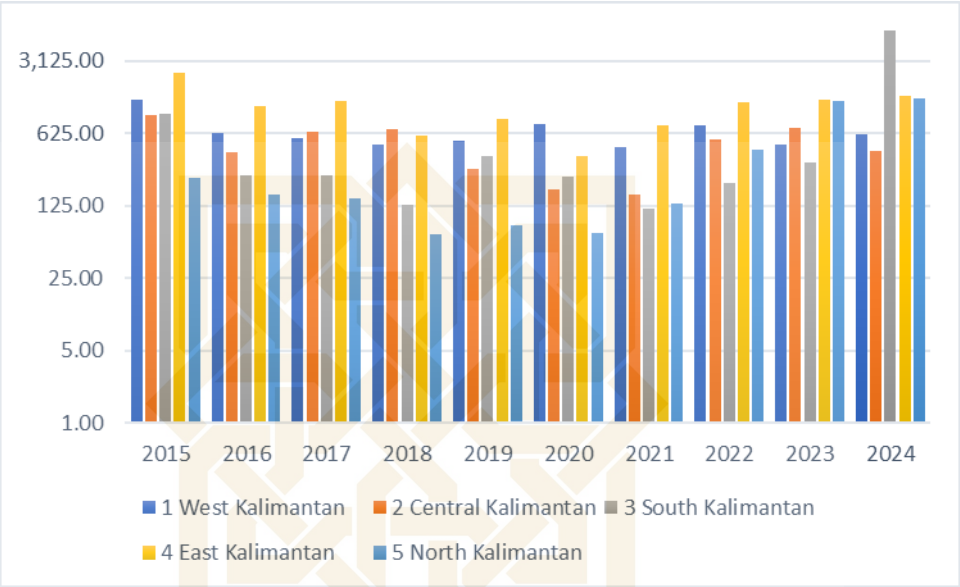


Figure 1.2 Foreign Direct Investment in Kalimantan Island 2015-2024

Source: BPS Indonesia (processed data)

According to the Central Statistics Agency (2024), data on foreign direct investment in Kalimantan from 2015 to 2024, expressed in U.S. dollars, shows dynamic changes each year. In 2015, East Kalimantan ranked first with 2,381.4 million USD, followed by West Kalimantan, which also recorded a significant figure of 1,335.7 million USD. Moving into 2016 and 2017, a general decline in investment values was observed across nearly every region; by 2018, FDI figures in several provinces, such as South Kalimantan and North Kalimantan, had fallen to very low levels. The year 2019 began to show signs of recovery, though this was not uniform.

However, 2020 revealed the serious impact of the global pandemic, with a significant decline in investment in East and Central Kalimantan. The

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recovery continued in 2021 and strengthened significantly in 2022, when East Kalimantan once again reached a figure above 1,200 million USD. In 2023, North Kalimantan recorded exceptional growth, reaching 1,272.1 million USD—an increase compared to previous years. The peak came in 2024, with South Kalimantan showing extraordinary growth, reaching 8,271.3 million USD—the highest figure during the observation period. The extent to which foreign direct investment helps the economy can be gauged by how effectively new technologies are utilized and how local and international businesses are strengthened. Therefore, on the island of Kalimantan, increased investment must include the enhancement of local skills and infrastructure development to ensure that all benefits are distributed equitably.

In addition to foreign direct investment, population size also plays a significant role in driving economic growth. To assess whether a region or area has stable growth (Wahyu, 2012). With the development of the Nusantara Capital City (IKN) in East Kalimantan and improvements in interprovincial infrastructure, Kalimantan's natural resource potential has become highly strategic for new investments. However, the quality of education and job training still needs to be improved so that the population becomes more productive and can be effectively absorbed into both the formal sector and the labor market.

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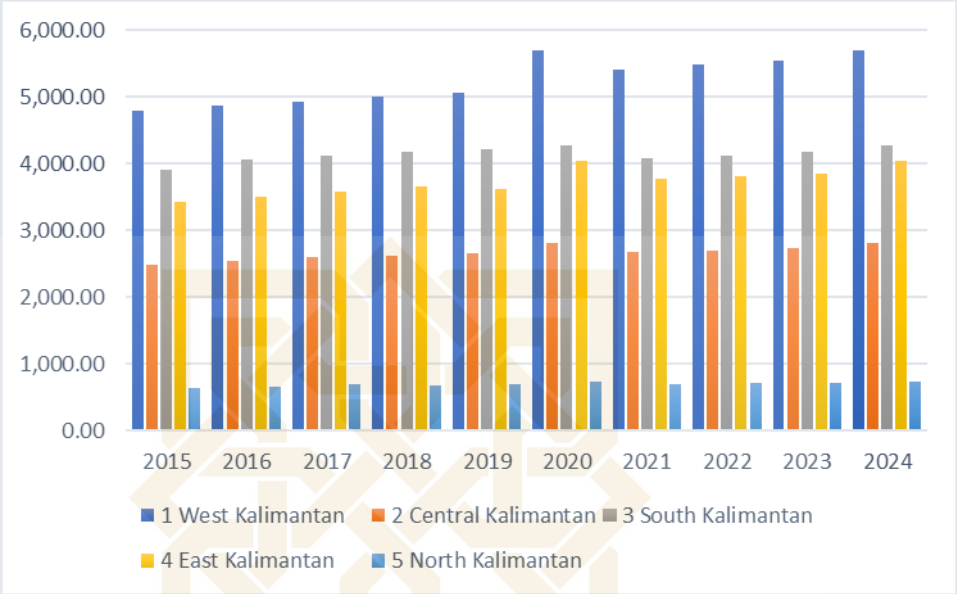


Figure 1.3 Graph of the Total Population of Kalimantan Island, 2015-2024
Source: BPS Indonesia (processed data)

Based on population data from the Central Statistics Agency (BPS) for the island of Kalimantan from 2015 to 2024, it is evident that the population has been increasing each year at a relatively stable rate. West Kalimantan is the province with the largest population, rising from 4,789.5 thousand people in 2015 to 5,695.5 thousand people in 2024. South Kalimantan and East Kalimantan also show fairly stable growth, rising from 3,898.8 thousand people to 4,789.5 thousand people. Meanwhile, Central Kalimantan also experienced an increase from 2,495.1 to 2,809.7 thousand people. North Kalimantan, which has the smallest population, still saw growth, rising from 641.9 thousand people in 2015 to 739.8 thousand people in 2024. Overall, this population increase indicates sustained growth across the island of Kalimantan during the study period.

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However, a growing population constrained by a lack of employment opportunities has the potential to put pressure on the labor market and increase poverty rates (Nur et al., 2025). Therefore, it is important for the government to promote higher educational standards and create quality jobs so that population growth does not have a negative impact on poverty rates.

Poverty is a condition in which people experience hardship due to the prevailing social system. The root cause of poverty lies in social structures that make life increasingly difficult for the poor. Structural poverty can lead to the emergence and spread of other forms of poverty (Nurfadia et al., 2025). The Kalimantan region continues to face increasingly intense development challenges each year. This hinders the development of human resource potential. Poverty is understood as the financial inability to meet basic needs, both food and non-food. The general determining factor is an average monthly expenditure per person that falls below the poverty line; those below this threshold are categorized as living in poverty (Ainistikmalia et al., 2022). Therefore, it is crucial for the government to promote improvements in the quality of education and create quality jobs so that population growth does not have a negative impact on poverty levels.

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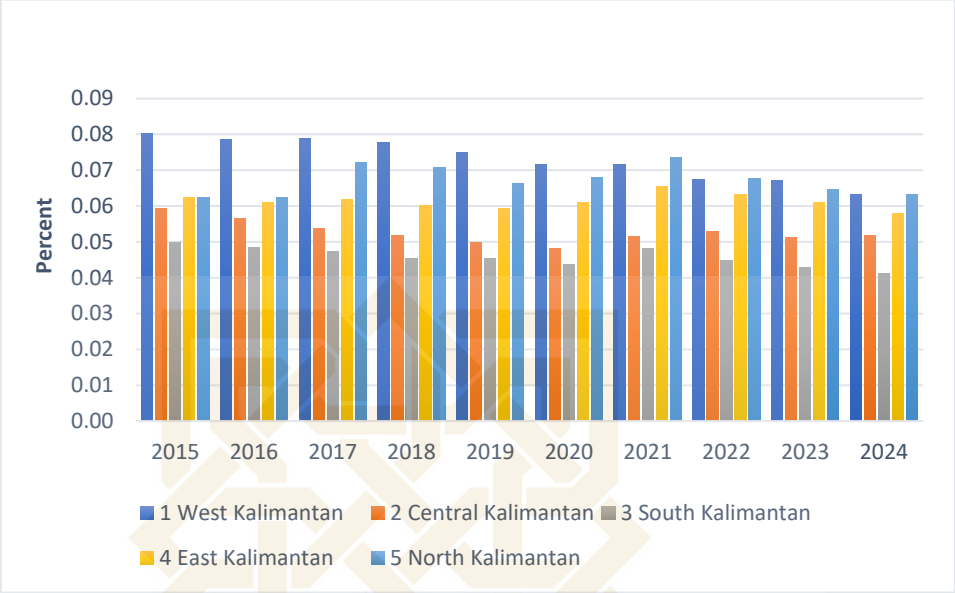


Figure 1.4 Poverty Graph for Kalimantan Island, 2015- 2024

Source: BPS Indonesia (processed data)

According to data from the Central Statistics Agency (BPS), the poverty rate on the island of Kalimantan showed a downward trend during the 2015–2024 period, although it experienced spikes in some years. West Kalimantan was recorded as the province with the highest poverty rate among all provinces in 2015, at 8.03%, but this rate declined to 6.32% by 2024. In Central Kalimantan, there was a fairly steady decline from 5.94% to 5.17%. In South Kalimantan, the poverty rate fell from 4.99% in 2015 to 4.11% in 2024. Meanwhile, East Kalimantan experienced a surge in poverty in 2020 and 2021 due to the COVID-19 pandemic, but by 2024, the rate had already dropped to 5.78%. North Kalimantan has also shown improvement year over year. Although there are variations among provinces, overall, the standard of living in Kalimantan has improved over time.

Furthermore, the unemployment rate is also a factor in economic growth. Unemployment is not only caused by a lack of jobs but also by a lack of quality human resources(Hasiru et al., 2024). High unemployment is due to a mismatch between the skills possessed by individuals and the needs of industry, a lack of jobs relative to the growth of the working-age population, and suboptimal utilization of human resources. High unemployment also increases the state budget deficit and becomes a social burden that will trigger high poverty and socio-political instability (Ningrum et al., 2020).

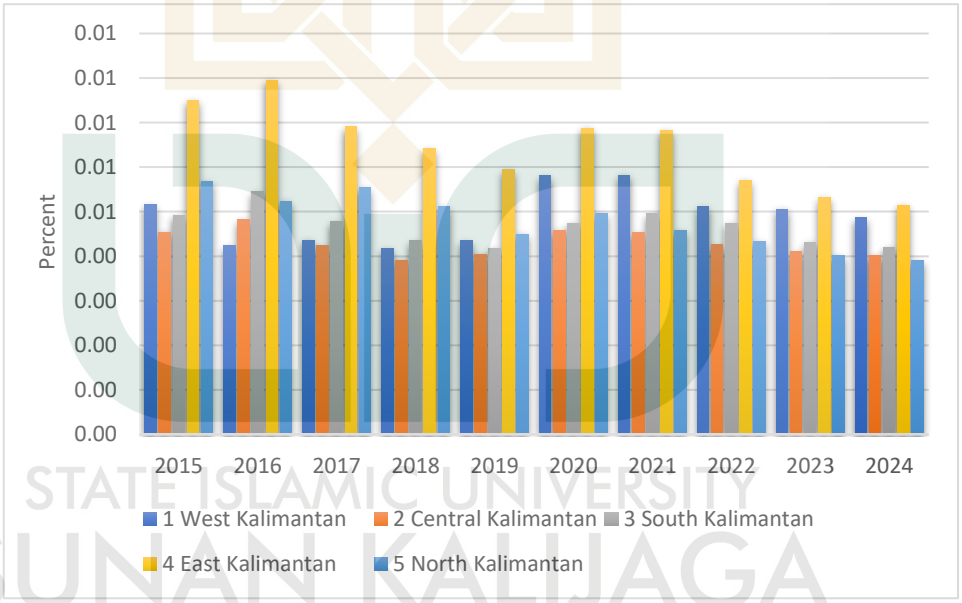


Figure 1.5 Unemployment Rate in Kalimantan Island, 2015-2024

Source: BPS Indonesia (processed data)

Based on the graph of unemployment rates in the five provinces of Kalimantan for the 2015–2024 period, the rates fluctuated from year to year. East Kalimantan had the highest unemployment rate during this study period, although it did decline from 7.5% in 2015 to 5.14% in 2024. On the

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other hand, West Kalimantan saw an increase in unemployment in 2020–2021, reaching 5.82%, before falling back to 4.86% in 2024. Central Kalimantan showed relative stability, with a decline from 4.54% to 4.01%. South Kalimantan also recorded a decline in unemployment from 4.92% in 2015 to 4.2% in 2024. Meanwhile, North Kalimantan recorded a significant decline from 5.68% to 3.9%, making it the province with the lowest unemployment rate in 2024. Overall, despite a spike in 2020–2021, the unemployment rate on the island of Kalimantan shows a downward trend. This indicates that unemployment dynamics on the island of Kalimantan are influenced by the economic structure and sensitivity to changes in the global market; therefore, new job opportunities—both online and offline—are essential to strengthen labor absorption in this region.

As mentioned in the research conducted by Jufrida et al., (2016), previous research has been conducted on "the analysis of the effect of foreign direct investment and domestic investment on Indonesia's economic growth." This study used the quantitative OLS method with national time series data. The results of the study show that the stability and increase in both domestic and foreign investment are key factors in achieving sustainable economic growth in Indonesia. The second study by Zein Dedy 2025) examined "the analysis of the effect of foreign direct investment, population size, government spending, and poverty rates on economic growth in OIC countries in Asia" using panel data regression methods. The results of this study show that policies focused on increasing foreign direct

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investment, improving the quality of government spending, utilizing population growth productively, and reducing unemployment rates are very important to support sustainable economic growth.

The third researcher, Sherafima Trisniani1, (2025), studied "The Effect of Foreign Direct Investment, Domestic Investment, Local Revenue, and Trade Performance on Economic Growth in East Kalimantan Province" using quantitative methods with multiple regression analysis based on panel data. The results of this study indicate that foreign investment (PMA) and local revenue (PAD) have a positive and significant effect on economic growth and are capable of driving growth. Then the fourth researcher, (ahmad, 2024), researched "The Effect of Local Revenue, Foreign Investment, Domestic Investment, and Labor on Economic Growth in Central Kalimantan" using descriptive analysis methods, using multiple linear regression with the OLS method. The results of this study show that local revenue and labor have a significant effect on economic growth in Central Kalimantan province, while foreign investment and domestic investment do not have a significant effect on growth in Central Kalimantan.

Although previous studies have examined the relationship between foreign direct investment, population, poverty, unemployment, and GRDP, many of them have focused on these variables separately or in different regional contexts. Kalimantan has an economy based on natural resources and is undergoing structural changes due to the development of the National Capital City (IKN). These conditions provide a distinct context for the

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relationship between FDI, total population, poverty, and unemployment relative to GRDP, making it necessary to conduct a specific analysis for the island of Kalimantan.

This research is important to conduct, considering that Kalimantan Island has a strategic area that has undergone economic transformation since the beginning of the development of the Capital City of Nusantara (IKN), which has the potential to drive GRDP growth on the island of Kalimantan. Therefore, this study aims to analyze foreign direct investment, total population, poverty, and unemployment in relation to GRDP. It also aims to fill the gap by providing a comprehensive analysis and exploring interrelated variables.

Furthermore, the study period spans 2015–2024 a timeframe selected because it encompasses a crucial phase in Kalimantan's structural economic transformation. This period covers developments ranging from downstreaming policies for natural resources and the construction of Kalimantan's road network to the decision to relocate the national capital (IKN) to East Kalimantan, a process involving preparations between 2017 and 2019 and the commencement of construction toward the end of the study period. These shifts in policy and development direction are believed to have significantly impacted foreign direct investment flows, population size, poverty levels, and unemployment in Kalimantan, making it important to analyze them within a unified timeframe.

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Therefore, this research is important to provide a more detailed understanding of the macroeconomic factors that contribute to GRDP in Kalimantan over the past few years, for sustainable development, and to provide insights that are particularly relevant to policymakers in this region. Based on this description, the research aims to **Analyze Foreign Direct Investment, Total Population, Poverty, and Unemployment In Relation to GRDP In the Years 2015-2024.**

B. Problem Formulation

The research questions are fundamental questions that serve as guidelines for understanding whether foreign direct investment, total population, poverty, and unemployment are significant on the island of Kalimantan. Specifically, this study will answer the following questions:

1. How does foreign direct investment affect GRDP on the island of Kalimantan from 2015 to 2024?
2. How does the total population affect GRDP on the island of Kalimantan from 2015 to 2024?
3. How does the poverty rate affect GRDP on the island of Kalimantan from 2015 to 2024?
4. How does the unemployment rate affect GRDP on the island of Kalimantan from 2015 to 2024?

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C. Research Objectives

Based on the existing problem formulation, the main objective of this study is to analyze the factors of GRDP on the island of Kalimantan. This study aims to:

1. Analyze the effect of foreign direct investment on GRDP on the island of Kalimantan from 2015 to 2024
2. Analyze the effect of total population on GRDP in Kalimantan Island from 2015 to 2024
3. Analyze the effect of poverty on GRDP in Kalimantan Island from 2015 to 2024
4. Analyze the effect of unemployment on GRDP in Kalimantan Island from 2015 to 2024

D. Benefits of Research

1. Theoretical Benefits

This research is expected to contribute significantly to regional economic progress and economic development. Specifically, this research contributes new insights into the analysis of the effects of foreign direct investment, total population, poverty, and unemployment on GRDP in Kalimantan. This study can also be used as a reference to enrich empirical analysis in the field of regional economics and regional development, using cross-provincial panel data from Kalimantan for the period 2015-2024. In addition, the findings of this study are relevant to development agencies and international organizations involved in the

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development of the Kalimantan region and can be used as an analysis of the impact of foreign direct investment, total population, poverty, and unemployment on GRDP of the island of Kalimantan. Another function is to test the relevance of economic growth theories, such as the Todaro and Kuznets theories, through this study.

2. Practical Benefits

In practical terms, this study provides practical recommendations for policymakers in Kalimantan, identifying key factors that drive economic growth. The findings can help formulate policies to attract foreign direct investment, improve the overall quality of the population, reduce poverty, and address the challenges of unemployment, thereby generating more sustainable and inclusive GRDP growth. The results of this study are also relevant for use as material in scientific discussions or seminars to deepen understanding of the challenges and opportunities for GRDP on the island of Kalimantan, while identifying issues that arise in the Kalimantan region.

3. Policy Benefits

This study is expected to have strategic value for international organizations and development agencies involved in Kalimantan, as it can provide empirical evidence that can be used as a basis for making policies to improve governance, strengthen Kalimantan's growth, and reduce poverty and unemployment rates. This will serve as a practical reference for other regions facing similar development challenges. The

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data and analysis generated from this study can help boost GRDP on the island of Kalimantan and evaluate GRDP policies that have been implemented in the Kalimantan region. By emphasizing the urgency of inclusive economic growth policies, this study supports global efforts to build a more equitable, sustainable, and human development-oriented economic structure.

E. Writing Structure

Chapter 1 Introduction,This chapter discusses the background of the research, problem formulation, research objectives, research benefits, scope and limitations of the research, as well as the theoretical and practical significance of the research. This chapter emphasizes the urgency of GRDP on the island of Kalimantan and the role of variables such as foreign direct investment (FDI), total population, poverty, and unemployment. These factors will determine the effectiveness of the policies that have been made. In addition, this chapter also explains the research questions, research objectives, research significance, and scope limitations of the study.

Chapter 2 Theoretical Framework, this chapter describes the theoretical basis that will support the research related to foreign direct investment, total population, poverty, and unemployment. This chapter also reviews relevant empirical studies and previous findings. The conceptual framework of the research is explained here, showing how the independent variables (foreign direct investment, total population, poverty, and unemployment) are

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hypothesized to affect the dependent variable of GRDP along with testable hypothesis formulations.

Chapter 3 Research Methodology, this chapter explains the research design, types and sources of data, operational definitions of each variable, and the econometric analysis techniques used. This chapter also explains the use of panel data regression to test and analyze the relationship between variables. The methodology also includes a discussion of model selection and classical assumption tests to ensure model validity.

Chapter 4 Results and Discussion, this chapter discusses empirical results, including descriptive statistics, panel data regression output, and hypothesis test results. The discussion is conducted in depth by linking the research findings to the theories explained earlier and relevant empirical findings.

Chapter 5 Conclusion, this final chapter summarizes the main findings of the study, particularly the effects of direct investment, total population, poverty, and unemployment on economic growth (GRDP). This chapter draws conclusions based on the data generated by the researchers to provide policy recommendations for improving economic growth on the island of Kalimantan. This chapter also includes the limitations of the study and directions for future research. This structure ensures that the discussion remains logical so that the research objectives can be answered comprehensively, and the results can contribute practically to policy formulation.

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CHAPTER V

CONCLUSION

A. Conclusion

The following conclusions can be drawn from the analysis and discussion of the effects of foreign direct investment, total population, poverty, and unemployment on the GRDP of Kalimantan Island from 2015 to 2024.

1. The foreign direct investment variable has a positive but insignificant effect on the GRDP of Kalimantan Island from 2015 to 2024. This indicates that foreign direct investment has not yet been able to exert a significant impact on increasing the GRDP on the island of Kalimantan. Although foreign direct investment can boost economic activity, its benefits have not been fully realized by the regional economy because the majority of foreign direct investment on the island of Kalimantan remains concentrated in specific sectors and is not evenly distributed across all provinces in Kalimantan.
2. The total population variable has a positive and significant effect on Kalimantan's GRDP for 2015–2024. This indicates that an increase in the total population can drive GRDP growth. The larger the total population on the island of Kalimantan, the greater the potential labor force and consumer market, which can increase production activity and demand for goods and services, thereby boosting the region's GRDP.
3. The poverty variable has a negative and significant effect on GRDP on the island of Kalimantan. This indicates that rising poverty rates can

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hinder GRDP growth on the island of Kalimantan. The large number of people living in poverty results in weak purchasing power, low labor productivity, and limited access to education and health services.

4. The unemployment rate has a significant negative impact on economic development on the island of Kalimantan. This indicates that as the unemployment rate rises, GRDP declines. Unemployment results in a portion of the labor force not participating in productive activities, leading to lower output and ultimately hindering regional GRDP growth.

B. Limitations of the Study

The limitations of this study are as follows:

1. This study uses only four independent variables: foreign direct investment, total population, poverty, and unemployment. Meanwhile, there are several other variables that could potentially influence economic growth. However, they were not included in the model.
2. The study period is very limited, covering only the years 2015–2024. Although this period encompasses conditions before the COVID-19 pandemic, the pandemic itself, the economic recovery phase, and the early stages of the development of the Nusantara Capital City (IKN), this study is not yet able to reflect long-term economic changes on the island of Kalimantan.

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C. Recommendations

Based on the research conducted, the following recommendations are offered for policymakers and for future research aimed at further development:

1. The government of Kalimantan is encouraged to improve the quality of incoming foreign investment to promote the allocation of funds to sectors that have a significant impact on the local economy. Given that foreign direct investment has been shown to have a positive but insignificant effect on GRDP, foreign investment not only increases the value of investment but can also make a greater contribution to GRDP. On the other hand, the increase in the total population must be balanced by the development of human resources through education, training, and skills development so that they can contribute to GRDP.
2. On the other hand, the government also needs to pay closer attention to poverty and unemployment, given that the findings of this study indicate they have a significant negative impact on GRDP. To reduce poverty and unemployment, the government needs to enhance the effectiveness of poverty alleviation efforts by expanding employment opportunities, improving access to education and healthcare, and increasing public access to productive economic resources so that people's well-being can improve. To address unemployment, the government needs to expand job opportunities and improve human capital through job training, education, and the development of labor-intensive economic sectors. This is necessary to curb the rise in unemployment on the island of Kalimantan.

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3. For future researchers, it is recommended to include additional variables such as the Human Development Index, regional spending, education levels, and other economic variables. In addition, future research could employ a longer observation period and a broader geographical scope.

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APPENDICES

Appendix 1. 1Research Data

province	year	Y Log(GRDP)	x1 Log(fdi)	x2 Log(totalpop)	x3 poverty	x4 unemployment
west Kalimantan	2015	112346,76	1335,7	4789,5	8,03	5,2
	2016	118183,27	630,7	4861,7	7,87	4,2
	2017	124289,17	568,4	4932,5	7,88	4,4
	2018	130596,32	491,9	5001,6	7,77	4,2
	2019	137243,09	532,3	5069,1	7,49	4,4
	2020	134743,38	759,3	5695,5	7,17	5,8
	2021	141212,04	463,4	5414,4	7,15	5,8
	2022	148368,94	745,5	5474,7	6,73	5,1
	2023	154980,81	490,5	5549,7	6,71	5,1
	2024	162574,47	615,9	5695,5	6,32	4,9
Central Kalimantan	2015	78890,97	933,6	2495	5,94	4,5
	2016	83900,24	408,2	2550,1	5,66	4,8
	2017	89544,9	641	2605,2	5,37	4,2
	2018	94566,25	678,5	2612,6	5,17	3,9
	2019	100349,29	283,5	2649,8	4,98	4
	2020	98864,61	177,6	2809,7	4,82	4,6
	2021	102481,47	162,5	2670	5,16	4,5
	2022	109094,72	548,3	2700,1	5,28	4,3
	2023	113611,53	697,6	2737,2	5,11	4,1
	2024	118682,32	419,1	2809,7	5,17	4
South Kalimantan	2015	110863,12	961,2	3898,8	4,99	4,9
	2016	115743,57	249,4	4055,4	4,85	5,5
	2017	121858,52	243,8	4119,8	4,73	4,8
	2018	128052,58	129,2	4182,7	4,54	4,4
	2019	133283,85	372,9	4216,3	4,55	4,2
	2020	130864,32	240,8	4273,4	4,38	4,7
	2021	135424,59	117,2	4073,6	4,83	5
	2022	142339,22	208,1	4116,9	4,49	4,7
	2023	149226,1	327,9	4170,2	4,29	4,3
	2024	156756,94	8271,3	4273,4	4,11	4,2
East Kalimantan	2015	440676,36	2381,4	3426,6	6,23	7,5
	2016	439003,83	1139,6	3501,2	6,11	8
	2017	452741,91	1285,2	3575,4	6,18	6,9
	2018	464694,43	587,5	3648,8	6,03	6,4
	2019	486523,18	861	3619,7	5,94	5,9
	2020	472393,33	378	4045,9	6,1	6,9
	2021	484439,61	745,2	3766	6,54	6,8
	2022	506158,91	1266,2	3803,5	6,31	5,7

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	2023	537630,01	1332,7	3856,8	6,11	5,3
	2024	570824,01	1444,4	4045,9	5,78	5,1
North Kalimantan	2015	49315,75	230,9	641,9	6,24	5,7
	2016	51064,74	160,8	666,3	6,23	5,2
	2017	54537,31	149	691,1	7,22	5,5
	2018	57459,31	67,3	682,8	7,09	5,1
	2019	61417,79	81,7	695,6	6,63	4,5
	2020	60764,21	68,4	739,8	6,8	5
	2021	63168,43	133,5	701,8	7,36	4,6
	2022	66528,39	430,5	710	6,77	4,3
	2023	69816,76	1272,1	720,1	6,45	4
	2024	73007,99	1347,7	739,8	6,32	3,9

Appendix 1. 2 Descriptive Statistics

	Y_PDRB	X1_FDI	X2_TOTAL...	X3_POVERTY	X4_UNEMP...
Mean	182822.1	761.3680	3295.662	5.999600	5.019200
Median	123073.8	512.1000	3707.400	6.110000	4.795000
Maximum	570824.0	8271.300	5695.500	8.030000	7.950000
Minimum	49315.75	67.30000	641.9000	4.110000	3.900000
Std. Dev.	156810.4	1182.257	1566.746	1.057234	0.953935
Skewness	1.417338	5.305793	-0.478101	0.068858	1.257718
Kurtosis	3.327094	34.01169	2.193319	2.065381	4.109539
Jarque-Bera	16.96330	2238.188	3.260534	1.859330	15.74687
Probability	0.000207	0.000000	0.195877	0.394686	0.000381
Sum	9141104.	38068.40	164783.1	299.9800	250.9600
Sum Sq. Dev.	1.20E+12	68488897	1.20E+08	54.76939	44.58957
Observations	50	50	50	50	50

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Appendix 1. 3 Chow Test

Redundant Fixed Effects Tests
Equation: Untitled
Test cross-section fixed effects

Effects Test	Statistic	d.f.	Prob.
Cross-section F	434.814304	(4,41)	0.0000
Cross-section Chi-square	188.547053	4	0.0000

Appendix 1. 4 Hausment Test

Correlated Random Effects - Hausman Test
Equation: Untitled
Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	1739.257215	4	0.0000

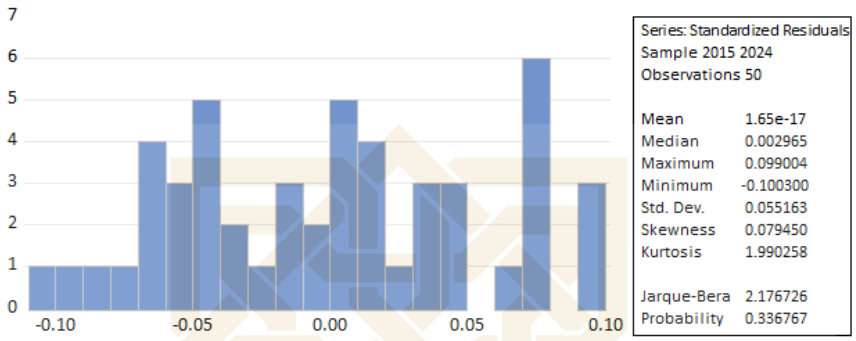
Appendix 1. 5 Lagrange multiplier

Lagrange Multiplier Tests for Random Effects
Null hypotheses: No effects
Alternative hypotheses: Two-sided (Breusch-Pagan) and one-sided (all others) alternatives

	Test Hypothesis		
	Cross-section	Time	Both
Breusch-Pagan	15.93529 (0.0001)	5.400022 (0.0201)	21.33531 (0.0000)

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Appendix 1. 6 Normality Test



Appendix 1. 7 Multicollinearity Test

Correlation

	LOG(X1)	LOG(X2)	X3	X4
LOG(X1)	1.000000	0.410254	0.032807	0.186650
LOG(X2)	0.410254	1.000000	-0.185289	0.153067
X3	0.032807	-0.185289	1.000000	0.195426
X4	0.186650	0.153067	0.195426	1.000000

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Appendix 1. 8 Heteroscedasticity Test

Residual Cross-Section Dependence Test

Null hypothesis: No cross-section dependence (correlation) in residuals

Equation: Untitled

Periods included: 10

Cross-sections included: 5

Total panel observations: 50

Cross-section effects were removed during estimation

Test	Statistic	d.f.	Prob.
Breusch-Pagan LM	12.88076	10	0.2304
Pesaran scaled LM	0.644157		0.5195
Bias-corrected scaled LM	0.366379		0.7141
Pesaran CD	-0.290205		0.7717

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Appendix 1. 9 Autocorrelation Test

Dependent Variable: LOG(Y)
Method: Panel Least Squares
Date: 05/26/26 Time: 15:21
Sample: 2015 2024
Periods included: 10
Cross-sections included: 5
Total panel (balanced) observations: 50

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.501453	2.017446	0.744235	0.4610
LOG(X1)	0.015661	0.011448	1.367958	0.1788
LOG(X2)	1.377886	0.235901	5.840960	0.0000
X3	-0.059679	0.029095	-2.051181	0.0467
X4	-0.059567	0.016058	-3.709593	0.0006

Effects Specification

Cross-section fixed (dummy variables)

Root MSE	0.054609	R-squared	0.993885
Mean dependent var	11.83948	Adjusted R-squared	0.992692
S.D. dependent var	0.705439	S.E. of regression	0.060305
Akaike info criterion	-2.617239	Sum squared resid	0.149107
Schwarz criterion	-2.273075	Log likelihood	74.43097
Hannan-Quinn criter.	-2.486179	F-statistic	833.0059
Durbin-Watson stat	1.148466	Prob(F-statistic)	0.000000

Appendix 1. 10 Correction for heteroscedasticity

Test	Statistic	d.f.	Prob.
Breusch-Pagan LM	6.483487	10	0.7731
Pesaran scaled LM	-0.786316		0.4317
Bias-corrected scaled LM	-1.064094		0.2873
Pesaran CD	1.542306		0.1230

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Appendix 1. 11 Correction Autocorrelation Test

Dependent Variable: LOG(Y)
Method: Panel EGLS (Cross-section SUR)
Date: 05/26/26 Time: 15:48
Sample: 2015 2024
Periods included: 10
Cross-sections included: 5
Total panel (balanced) observations: 50
Linear estimation after one-step weighting matrix

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	3.345621	1.104539	3.028975	0.0042
LOG(X1)	0.006431	0.003337	1.927032	0.0609
LOG(X2)	1.124735	0.138284	8.133492	0.0000
X3	-0.035045	0.009895	-3.541642	0.0010
X4	-0.046196	0.005796	-7.970907	0.0000

Effects Specification

Cross-section fixed (dummy variables)

Weighted Statistics

Root MSE	0.838243	R-squared	0.995966
Mean dependent var	158.7353	Adjusted R-squared	0.995179
S.D. dependent var	122.8462	S.E. of regression	0.925684
Sum squared resid	35.13253	F-statistic	1265.228
Durbin-Watson stat	1.429846	Prob(F-statistic)	0.000000

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