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WHAT FACTORS CAUSE DIFFERENCES IN ECONOMIC GROWTH IN NORTH BANTEN AND SOUTH BANTEN?

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ABSTRACT

This study examines the factors contributing to the economic growth imbalance between North and South Banten. Using panel data from six regencies and cities in North Banten and two regencies in South Banten for the period 2010-2020, the research employs both descriptive qualitative analysis and quantitative regression analysis. The findings reveal that in North Banten, factors such as foreign direct investment (FDI), domestic direct investment (DDI), electricity, human development index (HDI), industrial sector, and service sector positively and significantly influence economic growth. However, road infrastructure and the agriculture sector show no significant effect. In contrast, in South Banten, only the agriculture and service sectors have a positive significant impact, while FDI, DDI, road infrastructure, electricity, HDI, and the industrial sector do not significantly affect economic growth. To address the economic growth imbalance in Banten, policies should focus on enhancing investment interest, improving infrastructure, developing human resources, and maximizing key production sectors.

1. INTRODUCTION

Economic growth is a widely used metric to measure changes in a region's Gross Regional Domestic Product (GRDP) over time (Sukirno, 2019). Banten Province, located in Indonesia, has experienced significant economic growth in recent years. According to data from the Central Bureau of Statistics (Badan Pusat Statistik Provinsi Banten, 2020). Banten Province's GRDP (in constant prices) has increased from IDR 271 trillion in 2010 to IDR 445 trillion in 2020, a growth of IDR 174 trillion over the past eleven years. Additionally, Banten Province is ranked eighth in the national GDP, making it one of the highest-performing provinces in Indonesia.

Foreign Direct Investment (FDI) is a form of investment that involves building, fully purchasing, or acquiring a company (Jufrida et al., 2016). This positive trend in Banten Province's economic growth can be further explored by analyzing the realization of FDI and DDI in the region. FDI in Banten Province has a positive trend, increasing from USD 511,90 million in 2006 to USD 2,14 billion in 2020, with the highest realization of USD 3,72 billion occurring in 2013 (Media Digital, 2018). Similarly, the realization of DDI in Banten Province, has a positive trend, though it experienced some declines in 2007 and 2013 (Badan Pusat Statistik Provinsi Banten, 2020).

Investment, both foreign and domestic, is a crucial factor in driving economic growth (Agustini & Kurniasih, 2017). Infrastructure, such as electricity and road networks, also plays a significant role in regional development and economic growth (Fitriany, 2018; Hapsari, 2011; Sugiharto, 2019). Additionally, the quality of human resources, as measured by the Human Development Index (HDI), can influence regional economic growth (Dewi & Sutrisna, 2014)

However, while Banten Province as a whole has experienced significant economic growth, there are disparities between the northern and southern regions of the province. The southern regions of Lebak and Pandeglang have relatively lower GRDP values compared to the northern regions. This suggests the need for a separate analysis to understand the factors that contribute to the differences in economic growth between the northern and southern parts of Banten Province.

2. RESEARCH METHODS

The data used is secondary panel data, consisting of individuals from eight districts/cities in Banten Province from 2010 to 2020. The types of data used are: 1) FDI ; 2) DDI; 3) Number of Road Lengths; 4) Number of Electricity Users; 5) HDI; 6) GRDP ADHK Agricultural Sector; 7) GRDP ADHK Industrial Sector; and 8) GRDP ADHK Service Sector.

The research methodology includes both descriptive qualitative analysis and quantitative analysis using regression analysis. Descriptive qualitative analysis was used to analyze and compare the factors that cause differences in economic growth between North Banten and South Banten. This analysis provides a deeper understanding of the underlying reasons for the economic growth disparities between the two regions. Quantitative analysis was conducted using panel data regression to see the determinants and influence of factors that cause differences in economic growth in North Banten and South Banten Provinces using Microsoft Excel 2016 and Eviews 10 applications (Sugiyono, 2017).

Model 1 is applied to North Banten and can be written with the following equation:

$$Ln\_GRDP_{it} = \alpha_0 + \beta_1 Ln\_FDI_{it} + \beta_2 Ln\_DDI_{it} + \beta_3 Ln\_ROAD_{it} + \beta_4 Ln\_ELECTRICITY_{it} + \beta_5 Ln\_HDI_{it} + \beta_6 Ln\_AGRICULTURE_{it} + \beta_7 Ln\_INDUSTRY_{it} + \beta_8 Ln\_SERVICE_{it} + e_{it} \quad (1)$$

Model 2 applied to South Banten and can be written with the following equation:

$$Ln\_GRDP_{it} = \gamma_0 + \theta_1 Ln\_FDI_{it} + \theta_2 Ln\_DDI_{it} + \theta_3 Ln\_ROAD_{it} + \theta_4 Ln\_ELECTRICITY_{it} + \theta_5 Ln\_HDI_{it} + \theta_6 Ln\_AGRICULTURE_{it} + \theta_7 Ln\_INDUSTRY_{it} + \theta 8 Ln\_SERVICE_{it} + e_{it} \quad (2)$$

Where as:

α_0	= Intercept Model 1
β_{1-8}	= Model 1 coefficient
γ_0	= Intercept Model 2
θ_{1-8}	= Model 2 coefficient
Ln	= Natural logarithm
GRDP	= ADHK gross regional domestic product (million IDR)
FDI	= Foreign investment (thousand US$)
DDI	= Domestic investment (million Rp)
ROAD	= Total road length (km)
ELECTRICITY	= Number of electricity customers (units)
HDI	= Human Development Index (index)
AGRICULTURE	= GRDP ADHK agricultural sector (million Rp)
INDUSTRY	= GRDP ADHK industrial sector (million Rp)
SERVICE	= GRDP ADHK service sector (million Rp)
e	= Error coefficient
i	= Latitudinal data for districts/cities in Banten Province
t	= Time series data for 2010-2020

3. RESULTS AND DISCUSSION

Descriptive Analysis

One of the economic conditions in Banten province can be explained by the economic growth variable. Economic development is a multidimensional process that involves various fundamental changes in social structure, societal attitudes, and national institutions, along with accelerated growth, reduced inequality, and poverty alleviation (Todaro & Smith, 2011). Economic growth in this study uses GRDP based on constant prices. Economic growth shows increased production of goods and services in a region. Figure 1 shows the condition of economic growth in Banten province over the last eleven years.

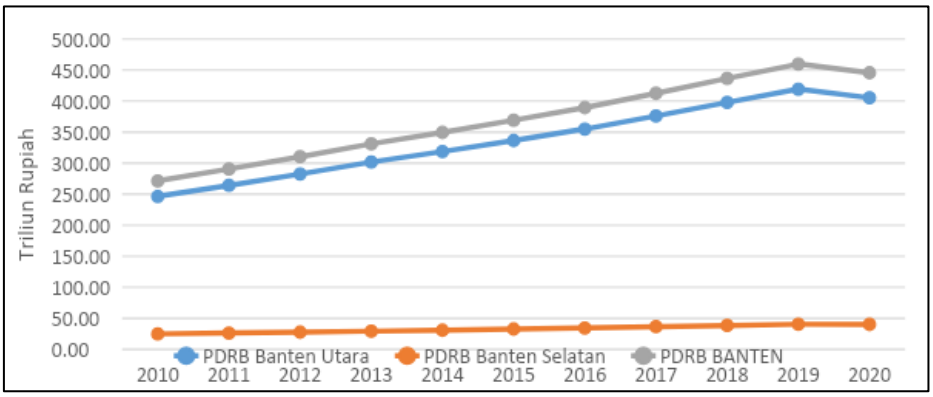

Figure 3. Gross Regional Domestic Product (GRDP) of North Banten and South Banten 2010-2020 (Trillion rupiah)
Source: Badan Pusat Statistik (2020)

Banten's economic growth tends to increase. In 2010, the GRDP of Banten Province had a value of 271 trillion rupiah, then increased to 456 trillion rupiah in 2019, but in 2020 the GRDP value decreased to 441 trillion rupiah. This is due to the Covid-19 pandemic, which has caused various sectors and business fields to experience a decline. The largest contribution to GRDP income in Banten Province is generated from the processing industry sector, where 2019, the value reached 154 trillion rupiah.

Then, if we look at the northern and southern regions, the largest contribution to North Banten comes from the processing industry sector. Of the six districts/cities in North Banten, only Serang City and South Tangerang City have the largest contribution, not from the processing industry sector. Still, in Serang City, the largest contribution is generated from the wholesale and retail trade sector, while in South Tangerang City, the largest contribution comes from the real estate sector. On the other hand, in the southern region of Banten, the largest income comes from the agricultural industry.

However, the contribution from the processing industry sector in North Banten and the contribution of the agricultural sector in Southern Banten still experience quite large differences. In 2020, the contribution from the industrial sector in North Banten reached 114 trillion rupiah, with the largest gain being in Cilegon City, namely 44 trillion rupiah (Junita et al., 2022). Meanwhile, in South Banten, the contribution from the agricultural sector was only 11 trillion rupiah with the largest gain in Pandeglang Regency with a value of 6 trillion rupiah. This data shows that even though these two sectors are the leading sectors in each region, the income value of the two areas still has quite a big difference, this is what causes the large difference in GRDP between North Banten and South Banten.

Statistical Criteria Test Results

This following is the regression estimation results for model 1 (North Banten), it can be shown in the table 1 below.

Table 1. Regression estimation results for Model 1 (North Banten)

Variable	North Banten	
	Coefficient	Probability
C	-2.891279	0.0381
LOG(FDI)	0.011078	0.0064
LOG (DDI)	0.004844	0.0329
LOG(ROAD)	0.001862	0.8876
LOG(ELECTRICITY)	0.218336	0.0000
LOG(HDI)	3.497184	0.0000
LOG(AGRICULTURE)	-0.048928	0.4142
LOG(INDUSTRY)	0.018438	0.0840
LOG(SERVICE)	0.200507	0.0000
R-squared		0.9982
Prob(F-statistic)		0.0000

Source: Processed data (2021)

This following is the regression estimation results for model 1 (South Banten), it can be shown in the table 2 below.

Table 2. Regression estimation results for Model 2 (South Banten)

Variable	South Banten	
	Coefficient	Probability
C	4.065133	0.0000
LOG(FDI)	0.000021	0.9502
LOG (DDI)	-0.000281	0.2072
LOG(ROAD)	0.000848	0.7189
LOG(ELECTRICITY)	0.015338	0.1117
LOG(HDI)	0.256265	0.1499
LOG(AGRICULTURE)	0.125967	0.0068
LOG(INDUSTRY)	0.008146	0.5376
LOG(SERVICE)	0.647752	0.0000
R-squared		0.9993
Prob(F-statistic)		0.0000

Source: Processed data (2021)

The R^2 value can be used to find out how much the independent variable can explain the dependent variable's diversity. The estimation results in Model 1 show that R^2 has a value of 0.9982 and in Model 2, it shows that the value of R^2 has a value of 0.9993, which means that in Model 1, 99.8% of the diversity can be explained by the independent variables and the remaining amount (0.02%) is presented by other factors and variables in outside the model as well as in Model 2, 99.9% of the diversity can be explained by the independent variables and the remainder (0.01%) is described by other variables outside the model.

According to the results of the estimated value of the regression test in Model 1 show that the variables FDI, DDI, number of electricity users, HDI, GRDP ADHK industrial sector, and service sector have values that are smaller than the real level α (0.05). In Model 2, it is known that GRDP ADHK in the agricultural and service sectors shows a value that is smaller than the real level α (0.05). These results represent that in model 1, the variables FDI, DDI, number of electricity users, HDI, GRDP ADHK industrial sector and service sector have a significant effect on economic growth, and in model 2, the variable GDP ADHK agricultural and service sectors have a substantial impact on economic growth.

In Model 1, FDI is known to have a probability value at the real level of 5% and a coefficient of 0.011078, so every 1% increase in FDI will increase the GRDP (ADHK) of the Regency/City in North Banten significantly as much as 0.011078% with ceteris paribus assumptions. This could be due to comparing the realized value of FDI in the two regions being quite far apart. In 2020, the realized value of FDI in North Banten reached US$ 2.07 billion, in South Banten, it was only US$ 65.7 million (Media Digital, 2018). Overall, the FDI realization value in Banten Province is dominated by investment in the electricity, gas and water sectors, with IDR 4.87 trillion in 2020 (Dinas Penanaman Modal dan Pelayanan Terpadu Satu Pintu Provinsi Jawa Barat, 2020).

DDI is known to have a probability value at a real level of 5% and has a coefficient of 0.004844, so every 1% increase in DDI will significantly increase the GRDP (ADHK) of the Regency/City in North Banten by 0.004844% with the assumption ceteris paribus. This could be due to the comparison of the realized value of DDI in the two regions being quite far apart. In 2020, the realized value of DDI in North Banten reached IDR 28.43 trillion, while in South Banten, it was only IDR 2.7 trillion (Media Digital, 2018). Overall, the realized value of DDI in Banten Province is dominated by investment in the housing, industrial area and office sectors, with a value of IDR 8.23 trillion in 2020 (Dinas Penanaman Modal dan Pelayanan Terpadu Satu Pintu Provinsi Jawa Barat, 2020).

The number of electricity customers is known to have a probability at a real level of 1%. It has a coefficient of 0.218336 so that every 1% increase in the number of electricity customers will significantly increase the District/City GRDP (ADHK) in North Banten by as much as 0.218336% assuming ceteris paribus assumptions. Electricity infrastructure significantly influences economic growth in North Banten because the production sector in the region is dominated by the processing industry sector, with a value of IDR 147.61 trillion (Badan Pusat Statistik, 2020). The industrial sector is known to require quite high electricity consumption, so electricity infrastructure is essential to demonstrate the sustainability of economic activity in the region.

The HDI is known to have a probability value at the real level of 1%. It has a coefficient of 3.497184, so every 1% increase in HDI will increase the GRDP (ADHK) of the Regency/City in North Banten significantly by 3.497184% with the assumption ceteris paribus. This can be caused by the quality of human resources in the two regions showing quite high disparities. The average number of years of schooling for people aged 15 years and over as an indicator of education quality in North Banten reached 9.5 years, while in South Banten, it only reached 6.7 years. Apart from that, the number of hospital health facilities in North Banten is much greater, with 669 units, while in South Banten, there are only 317 units in 2020. This gap means that the HDI in South Banten is not significant in influencing economic growth in the region.

Meanwhile, in Model 2, the agricultural sector is known to have a probability at a real level of 5%. It has a coefficient of 0.125967 so, so every 1% increase in the farm sector will significantly increase South Banten's District/City GRDP (ADHK) by as much as 0.125967%, assuming ceteris paribus. Based on development priorities, the South Banten region is designated as a region whose economic activities focus on the agricultural, mining, plantation, and tourism sectors (Peraturan Daerah Provinsi Banten Nomor 7 Tahun 2017 Tentang RPJMD Provinsi Banten Tahun 2017-2022, 2017). In South Banten, the farm sector has a significant influence on the economic growth process. The condition of the larger area of plantations and rice fields, plus the amount of forest and water area, which has a value of 228.008 ha, is one of the reasons why the agricultural sector in South Banten plays an important role in increasing economic growth in the region.

The industrial sector is known to have a probability at a real level of 10%. It has a coefficient of 0.018438 so that every 1% increase in agriculture will significantly increase the District/City GRDP (ADHK) in North Banten 0.018438% assuming ceteris paribus. This is because the GRDP of the North Banten industrial sector has a fairly large contribution reaching IDR 147 trillion from the total GRDP of Banten Province of IDR 445 trillion in 2020. In addition, based on development priorities, the North Banten region is designated as a region whose economic activity focuses on the industrial sector, services, and trade (Peraturan Daerah Provinsi Banten Nomor 7 Tahun 2017 Tentang RPJMD Provinsi Banten Tahun 2017-2022, 2017)

The service sector is known to have a probability at a real level of 1%. It has a coefficient of 0.200507, so every 1% increase in agriculture will significantly increase the District/City GRDP (ADHK) in North Banten 0.200507%, assuming ceteris paribus. Tangerang Regency is the region that has the highest service sector GRDP value in Banten Province, with the service sector being dominated by the education services sector, worth IDR 3.98 trillion in 2020. In model 2, the service sector is known to have a probability at a real level of 1% and a coefficient of 0.647752 so that every 1% increase in agriculture will significantly increase the District/City GRDP (ADHK) in South Banten by as much as 0.647752%, assuming ceteris paribus. Based on the regression coefficient, it is known that the service sector has a greater influence in the South Banten region. The service sector with the highest contribution in the Pandeglang Regency is the government administration, defense, and mandatory social security services sector, with a GRDP value of IDR 1.07 trillion in 2020. Meanwhile, the service sector that has the highest contribution in Lebak Regency is the education services sector, with A GRDP value is IDR 1.26 trillion in 2020 if we look more closely, the service sector in South Banten has had the highest growth compared to the agricultural and industrial sectors over the past 11 years.

4. CONCLUSION

The study reveals that economic growth in South Banten is lower than in North Banten, primarily due to the influence of more diverse factors in North Banten, such as investment, electricity infrastructure, human resource quality, and the industrial and service sectors. In contrast, South Banten's growth is driven mainly by the agricultural and service sectors. To reduce the economic disparity between these regions, policies should focus on attracting investment, enhancing physical infrastructure, improving human resources, and boosting strategic production sectors. Key recommendations include improving investment accessibility by streamlining bureaucratic processes and ensuring legal certainty, expanding infrastructure to disadvantaged areas to stimulate economic activities, enhancing human resource quality through better health, education, and income opportunities, and increasing productivity by providing capital and technology access and training for workers. These measures are crucial for promoting balanced economic growth across Banten Province.

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