

Strengthening Village Entities to Recover National Economy

By

Nur Imam Saifuloh*

Department of Economics, Faculty of Economics and Business, Hasanuddin University,
Makassar, Indonesia

Nursini

Department of Economics, Faculty of Economics and Business, Hasanuddin University,
Makassar, Indonesia

Sabir,

Department of Economics, Faculty of Economics and Business, Hasanuddin University,
Makassar, Indonesia

Anas Iswanto Anwar

Department of Economics, Faculty of Economics and Business, Hasanuddin University,
Makassar, Indonesia

Abstract

The Indonesian economy has risen more quickly during the last 20 years. Unfortunately, the industrial and service sectors were responsible for this development. The agriculture industry takes only a minor share. More research is required to boost economic growth in this industry. Its essay discusses several variables that affect this growth, including emigration, land use, and government support in the form of village funds. As a result of lowering the potential of rural workers, the study's findings suggest that migration needs to be regulated. Migration has a negative impact on agricultural growth. The land is required for agricultural expansion. Even though the government has cleared property in some locations, it should be reconsidered. In the meanwhile, hamlet desperately needs money to support growth.

Keywords: Migration, Land, Village Funds, and Agricultural Economic Growth.

*Corresponding Author: Nur Imam Saifuloh

Mailing Address: Rusunawa 2 Blok C, Kampus Unhas Tamalanrea, Jalan Sahabat Raya, Kelurahan Tamalanrea Indah, Kecamatan Tamalanrea, Kota Makassar, Provinsi Sulawesi Selatan, Kode Pos 90245

1. Introduction

Over the past two decades, Indonesia's economy has grown more rapidly. When examined more closely, however, it becomes clear that the urban industrial and service sectors were what propelled the economy's expansion. In contrast, the rural agricultural industry only makes up a modest portion (Badan Pusat Statistik, 2022). According to statistical data, Indonesia's industrial and service sectors are expanding. It happens in and around metropolitan areas, not just in the cities (peri-urban). Formerly rural peri-urban areas are gradually becoming industrialized (Follmann et al., 2021). If things stay as they are, more employees and more significant amounts of land will be required (Pandey & Seto, 2015).

The younger generation is typically the target of the labor demand in the industrial and service sectors due to the diversity of jobs they provide (Allen, 2011). Rural locations also have an enormous population. Villagers take advantage of this circumstance by developing their

talents, education, and other attributes to enable them to find employment in urban regions. Urbanization has also become a common tendency (Ullah & Uddin, 2021). Broader land is needed for the development of secondary sectors. The transition of agricultural operations to industrial land and homes impacts the peri-urban area (Phuc et al., 2014). The fact, meanwhile, is that changes in land usage also take place in rural areas. Houses are constructed in the countryside with the money earned from working in the city. Future plantations and agricultural land are eventually developed for habitation (Dewi & Sarjana, 2015). The deterioration of this scenario is a result of plantation firms' expansion, particularly oil palm and mining firms. Along with farming groups, plantation dwellers close to forests and fishermen who depend on marine products are also at risk (Sariato et al., 2016).

Even the migration is increasing with economic growth (Azadi et al., 2011), there are a few things to be aware of. First, the high proportion of young people choosing to live and work in cities causes rural areas to lose some potential influence. At the same time, older people make up most agriculture industry workers. Second, when land conversion continues, the agricultural sector loses its function and status (Xiao et al., 2017). The agricultural industry will not be revived if this situation persists (Xiang et al., 2021). This industry protects the needs of consumers for food. Despite being dependent on nature, it must also be vital to the country's economy. Dependence on food imports from other nations is a grave error. Third, the government must assess current policy, considering the possibility of future food crises that have already been felt for some time.

According to the above, it is vital to advance the economy overall. In response to the issue, the government starts the village fund program. Since it was designated as a priority development program, local grants have expanded from the national government to the regions. Even the government asserts that the community is now more independent. It is because village-level public infrastructure and amenities have been repaired, including roads, bridges, canals, and irrigation (Kementerian Keuangan, 2021a).

2. Materials and Methods

2.1. Materials

Solow (1956) asserted that changes to or breakthroughs in technology, capital, and labor are what lead to economic growth. $Y = A \cdot F(K, L)$ can be expressed mathematically. Economic prosperity is greatly influenced by technological progress. The remaining facets of economic growth are influenced by production factors such as population increase, labor productivity, and capital accumulation. If there is more money, there will be less labor and vice versa. Different technology, capital, and delivery combinations can be employed to achieve certain tasks or objectives.

Some publications measure economic growth by accumulating physical and human capital (Lucas, 1988). On the other hand, some claim that the level of human capital through technological innovation determines economic growth (Romer, 1990). Economic growth results from economic actors' decisions to invest in both the physical world and people (the field of science).

The characteristics that describe the structure of the rural economy in Indonesia are utilized to analyze the issue of agricultural growth. Except for DKI Jakarta Province, which lacks any places with a rustic style, this socioeconomic variable is obtained from the base year 2015 to 2021 across 33 provinces.

Table 1

Socio-economic Variables	Abbreviation	Units	Data Source
Recent Out-Migrant (X_1)	ROM	People	BPS
The Wetland Area (X_2)	TWA	km ²	National Land Agency
Planted Area of Oil Palm (X_3)	PAOP	Thousand ha	Ministry of Agriculture
Planted Area of Non-Oil Palm (X_4)	PANOP	Thousand ha	Ministry of Agriculture
Harvested Area of Vegetables (X_5)	HAV	Ha	BPS
Village Funds (X_6)	VF	Million IDR	Ministry of Finance
Agricultural Economic Growth (Y)	AEG	Percentage	Bank of Indonesia

Any shift in a permanent or semi-permanent population is referred to as migration (Zelinsky, 1971). Migration is determined by counting the number of people who, at the time of the census, were living in a different province than they were five years prior. Attributes of certain areas of the earth's land surface and immediate subsurfaces, such as biota, soil, topography, groundwater-surface, and human structure, are also altered through land conversion (Turner et al., 1993). Raw rice fields, oil palm plantations, and non-oil palm plantations all serve as indicators of the level of land conversion. Prioritizing the development and emancipation of rural communities, village funds are state revenue and spending budgets allocated for villages that are transferred through district/city regional income and expenditure budgets (Kementerian Keuangan, 2021b). The socioeconomic factors were also examined for their impact on the primary sector's expansion, including forestry, agriculture, plantations, and fisheries. Sectoral economic growth is typically a consistent change in the region's overall production of goods and services (Kuncoro, 2019).

2.2. Methods

This study uses a quantitative approach. The panel regression analysis technique is the most relevant to dissecting the problem of agricultural growth, considering that the data in this study consists of time series (2015 – 2021) and a cross-section (33 provinces). Thus, the resulting model estimates can be in the form of the Common Effect Model (CEM), Fixed Effect Model (FEM), and Random Effect Model (REM). The best model selection from the statistical results considers the research objectives and the theory as a reference (Ekananda, 2016). For further analysis, functional equations are formed in the simultaneous model with reduced form as follows:

$$Y_{it} = f(X_{1it}, X_{2it}, X_{3it}, X_{4it}, X_{5it}, X_{6it})$$

All variables will be in the form of a natural logarithm (Ln) except for variables whose units are already in percentage form.

$$\begin{aligned} Y_{it} &= f(\text{Ln}X_{1it}, \text{Ln}X_{2it}, \text{Ln}X_{3it}, \text{Ln}X_{4it}, \text{Ln}X_{5it}, \text{Ln}X_{6it}) \\ &= \alpha_0 + \alpha_1 \text{Ln}X_{1it} + \alpha_2 \text{Ln}X_{2it} + \alpha_3 \text{Ln}X_{3it} + \alpha_4 \text{Ln}X_{4it} + \alpha_5 \text{Ln}X_{5it} + \alpha_6 \text{Ln}X_{6it} + e_1 \end{aligned}$$

3. Result and Discussion

3.1. Descriptive Data

According to Law Number 6 of 2014 concerning Villages, a village is defined as a legal community unit that has territorial boundaries that are authorized to regulate and manage government affairs, the interests of the local community based on community initiatives, original rights, and traditional rights that are recognized and respected in law—the government system of the Unitary State of the Republic of Indonesia. Included in the village category are traditional villages and *Nagari*. It differs from sub-districts administratively regulated by Law Number 23 of 2014 concerning Regional Government. The villages in Indonesia have different styles.

The number of villages in Indonesia reaches 83,937 villages. From the criteria by BPS, 35.31 percent of villages with urban characteristics (29,640 villages) were produced, while towns with rural features gained 64.69 percent (54,297 villages) (Badan Pusat Statistik, 2021). It is stated that rural villages in Indonesia still rely on agriculture as the economy's main driver. This sector absorbs a significant amount of labor.

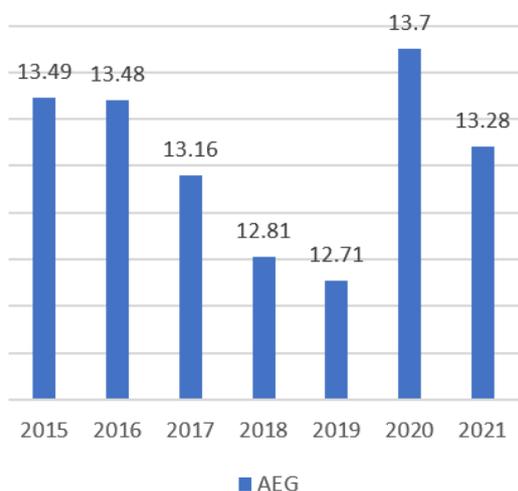


Figure 1. Agricultural Economic Growth

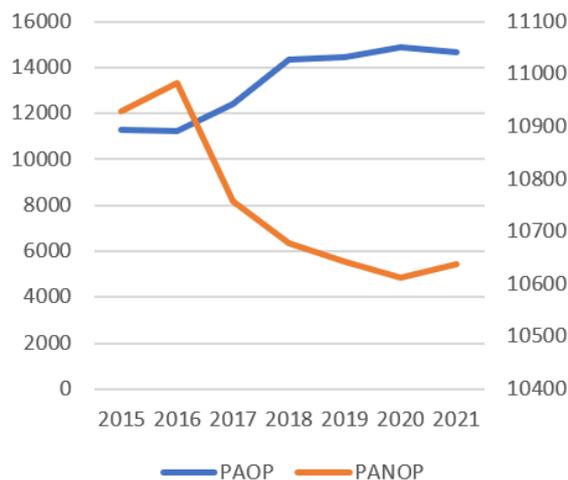


Figure 2. Planted Area of Oil Palm and Planted Area of Non-Oil Palm

From 2015 to 2019, agricultural economic growth significantly slowed down. However, the COVID-19 catastrophe saw a sharp increase in agricultural economic growth (Figure 1). However, oil palm plantations have consistently grown over the past seven years. The rise of non-oil palm plantations, including those for tobacco, quinine, sugar cane, cocoa, coffee, and tea, resulted in a loss of land area (Figure 2).

Additionally, different locations saw land conversion during this time. The development of toll highways, airports, ports, reservoirs, power plants, and housing developments that occupy potential farmland have reduced agricultural production, particularly rice. Even when it clears land in other places, the government has not been able to boost production. In 2015, there was 8,110,455 km² of agricultural land; in 2021, that number will rise to 10,514,744 km².

According to its growth, the agriculture sector's growth contribution to the GDP is minimal and tends to decrease each year. However, as the industrial and service sectors develop, many workers are drawn to move physically and according to their work type. The graph below shows the migration that takes place in Indonesia.

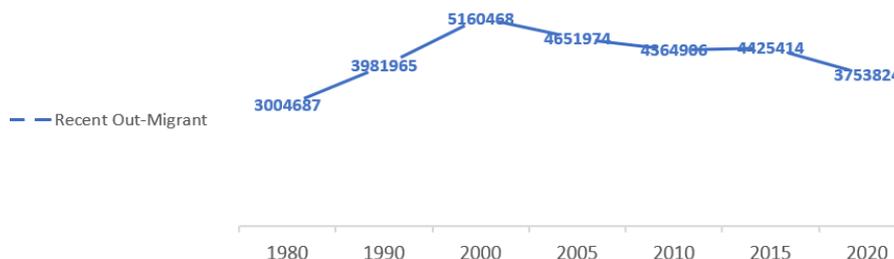


Figure 3.: Progress of Recent Out-Migrant in Indonesia

Source : (Badan Pusat Statistik, 2022)

Migration rates in Indonesia until 2000 continued to increase. During those times, there was an economic transformation from agriculture to industry/services as proclaimed by President Soeharto in his leadership era in the form of the Five-Year Development Plan (REPELITA). In the New Order era, the average rate of Indonesia's economic growth was between 6 and 7 percent (Agussalim, 2009). After entering the reform era, the migration rate decreased even though the number is above 4 million yearly. In 2020, when the COVID-19 disaster struck, many workers were laid off. It seems to have an impact on the declining migration rate. Many migrants eventually return to their hometowns in rural areas and start living as farmers.

The government has implemented a village fund strategy to boost the local economy. Since it was originally implemented, the transfer has risen steadily. The amount of money the federal government gave to villages in 2015 was estimated at 20 trillion rupiahs. The confirmed village fund currently stands at 71 trillion rupiahs. According to the government, village funds can boost the village economy, particularly agriculture.

3.2. Analysis Data

3.2.1. Regression Model Estimation

After a series of tests, the REM estimation model was chosen for both the economic growth models. The estimation results are as follows.

$$Y = 11,07567 - 0,01298 \text{ROM}_{it} + 0,2198 \text{TWA}_{it} + 0,14508 \text{PAOP}_{it} - 0,01749 \text{PANOP}_{it} + 0,01899 \text{HAV}_{it} + 0,13204 \text{VF}_{it} + e_{it}$$

REM has both individual effects and time. However, REM with individual effects makes a good model in this instance. Therefore, the computation value for agricultural economic growth differs for each province. The differences for each province are as follows:

Table 2. Individual Effect of REM

No.	Province	Individual Effect	No.	Province	Individual Effect
1.	Aceh	2,1759	18.	North Sulawesi	1,7811
2.	Bali	2,2152	19.	North Sumatera	-3,5547
3.	Bangka Belitung	1,5158	20.	Papua	1,6446
4.	Banten	2,6914	21.	Riau	3,4955
5.	Bengkulu	1,4141	22.	Riau Islands	1,3024
6.	Central Java	3,4401	23.	South Kalimantan	1,6864
7.	Central Kalimantan	-5,2059	24.	South Sulawesi	-3,9598
8.	Central Sulawesi	2,1953	25.	South Sumatera	-4,3724
9.	East Java	-3,2352	26.	Southeast Sulawesi	1,9246
10.	East Kalimantan	2,7299	27.	West Java	-3,5876
11.	East Nusa Tenggara	1,7679	28.	West Kalimantan	2,0418
12.	Gorontalo	-5,3923	29.	West Nusa Tenggara	2,1207
13.	Jambi	-5,8991	30.	West Papua	-5,8905
14.	Lampung	2,9554	31.	West Sulawesi	1,5690
15.	Maluku	1,0592	32.	West Sumatera	2,4672
16.	North Kalimantan	1,5556	33.	Yogyakarta	1,4705
17.	North Maluku	-6,1225			

Estimation for every province is as follows:

$$Y_{\text{Aceh}} = 11,07567 - 0,01298 \text{ROM}_{it} + 0,2198 \text{TWA}_{it} + 0,14508 \text{PAOP}_{it} - 0,01749 \text{PANOP}_{it} + 0,01899 \text{HAV}_{it} + 0,13204 \text{VF}_{it} + 2,1759 + e_{it}$$

$$\begin{aligned}
 Y_{\text{Bali}} &= 11,07567 - 0,01298 \text{ ROM}_{it} + 0,2198 \text{ TWA}_{it} + 0,14508 \text{ PAOP}_{it} - 0,01749 \\
 &\quad \text{PANOP}_{it} + 0,01899 \text{ HAV}_{it} + 0,13204 \text{ VF}_{it} + 2,2125 + e_{it} \\
 \dots &= \dots\dots\dots - \dots\dots\dots + \dots\dots\dots + \dots\dots\dots + \dots\dots\dots + \dots\dots\dots + \\
 &\quad \dots\dots\dots + \dots\dots\dots + \dots\dots\dots \\
 Y_{\text{Yogyakarta}} &= 11,07567 - 0,01298 \text{ ROM}_{it} + 0,2198 \text{ TWA}_{it} + 0,14508 \text{ PAOP}_{it} - 0,01749 \\
 &\quad \text{PANOP}_{it} + 0,01899 \text{ HAV}_{it} + 0,13204 \text{ VF}_{it} + 1,4705 + e_{it}
 \end{aligned}$$

Individual effect on REM that has a positive impact will increase the AEG. Meanwhile, the personal effect on REM that has a negative impact will decrease the AEG. The total effect can be seen in the first equation.

3.2.2. Interpretation

In the agricultural economic growth model, the migration variable has a negative effect. It indicates that more and more people are moving to new areas, causing a decrease in the workforce in the agricultural sector. The location of rice fields or plantations requires a lot of labor. However, because people living in rural areas also move to industry and services in urban areas, this causes the existing land to be uncultivated so that agricultural productivity decreases. In addition, this migration phenomenon targets the productive age population following the demand for labor by industry and services. Thus, workers in the agricultural sector lose productive workers.

The migration does harm the agricultural sector in rural areas. However, migration also has a positive impact on the families left behind. The income earned by migrants is not only enjoyed by themselves but is also shared with their families. It can be proven by the transfers or remittances that enter the rural population. Improvements in the quality of life such as repairing housing facilities, purchasing motor vehicles, increasing education levels, purchasing assets, and establishing new businesses are some of the positive impacts that can be seen. Initially, the increase in migration had a good impact on rural economic growth, but the amount of uncontrolled migration could have a negative effect. Currently, increased migration reduces growth potential.

The difficulty is that urban and rural areas both experience population expansion. It implies that people who live in cities also raise productive generations. It increases competitiveness for jobs. Labor salaries, however, continue to be a social issue. Wages that should be able to raise the level of human life for the better are, in fact, just for survival. Primarily if you work in urban areas with a higher cost of living, wages cannot be divided among families at home in the next stage because they can only be used to cover the workers' personal needs.

Variable area of rice fields has a positive influence on agricultural economic growth. If the fertile rice fields in the community are converted to non-agricultural activities, it can threaten jobs in the sector and ultimately reduce growth. In economic terms, rice fields are capital, and if their role is lost, development will not occur. The existence of rice fields is vital to the life of farmers in rural areas. The existing rice fields can support the people in rural areas. Even if the rural population does not have a fixed wage, the produce from agriculture can be used to survive. However, this also depends on other variables such as the presence of labor, agricultural methods used, fertilizer composition, rainfall, climate, and so on.

Large-scale rice field procurement projects occurred during the New Order era. Currently, the project, which is called the food estate, is also being continued in the second term of President Joko Widodo. The past mistakes must be used as lessons so that this large-scale rice field procurement project does not fail. It needs support from various parties that involve the government and the farming community working in the rice fields. This procurement must also not exclude forests, especially those in Papua, because one national strategic project was launched there.

Variable area of non-oil palm plantations also has an essential role in increasing agricultural economic growth. The plantations in question include coconut, rubber, coffee, cocoa, sugar cane, tea, and tobacco. Unfortunately, this data on the land area for non-oil palm plantations only has a smaller portion than oil palm plantations, which is around 45 percent for all commodities.

This situation contrasts with the area of oil palm plantations, which account for more than half of the total plantation area in Indonesia. According to the REM results, the influence of oil palm land area harms agricultural economic growth. That is when the size of oil palm land plus agricultural economic growth will decrease. It indicates that the expansion of oil palm plantations does not economically impact the wider community. On the other hand, this can result in a weakening of the traditional economy.

Land conversion from agriculture or plantations to oil palm in Indonesia is frequent. The largest oil palm plantation area is in Central Kalimantan Province. Although palm oil production is the highest in the world, it does not make the community more prosperous. Surprisingly, in recent times there has been an extraordinary increase in oil prices during the high production of palm oil. The government should not turn a blind eye to this problem. As a policy maker, the government must be wiser and wiser to see the differences in professions and sources of employment that are not only limited to oil palm plantations.

The government responded to the problem by implementing the village fund policy. This policy is considered capable of increasing agricultural economic growth. However, estimation data shows that village funds positively affect economic growth. Agricultural economic growth increases when more village funds are rolled out.

The village fund program can be said to have failed, although it has shown improvements in economic growth in some areas. This policy can be said to be not right on target, considering the many problems that lie behind the policy. Basic needs such as education, health, drinking water, sanitation, housing, waste, and public transportation are unavailable. The economic infrastructure to grow the people's economy is also not visible. Moreover, things like empowering disadvantaged communities such as people with disabilities, unemployment, and youth dropout, are not touched. It is a fact on the ground that must be addressed.

4. Conclusion

This study concludes that migration harms agricultural economic growth. Meanwhile, others (The Wetland Area, Planted Area of Oil Palm, Planted Area of Non-Oil Palm, Harvested Area of Vegetables, Village Funds) positively impact agricultural economic growth. It means that migration must be controlled, so the rural areas have potential labor for agriculture. Wider land for planting is required to increase growth. Village Funds as one of the Government projects must be continued.

Declaration of Competing Interest

The researcher declares that there is no conflict of interest in this paper.

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