

Analysis of the Contribution of Agribusiness Microfinance Institutions and Government Policies on Increasing Farmers' Income in Indonesia

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Due to its vital role in economic development, the agriculture sector has recently garnered global attention. To increase the income of the agriculture sector, the agricultural finance institution and government support are required. Consequently, this study examines the effect of agricultural credits supplied by micro-financial institutions, the profitability of agribusiness microfinance organizations, government subsidies, government agricultural loans, and economic growth on the income of Indonesian farmers. From 1991 to 2020, secondary sources such as central bank databases and World Development Indicators (WDI) were used to collect the study's secondary data. The autoregressive distributed lag (ARDL) method was utilized to examine the understudy structures. In Indonesia, agricultural credits, the profitability of agribusiness microfinance institutions, government subsidies, government agricultural loans, and economic growth were found to have a strong and positive relationship with farmers' income. Using government and micro-financial institutions to enhance farmers' incomes, the study aids policymakers in formulating relevant policies.

Key words: Agricultural credits, agribusiness microfinance institutions profitability, government subsidies, government agricultural loans, economic growth, farmers' income.

1. INTRODUCTION

Agriculture has a substantial impact on the economic growth structure of a country. The agriculture sector of Indonesia is broad and possesses considerable potential. Humans cannot survive without agriculture; hence, all industries will cease to function, posing a severe problem for our nation. The agriculture sector in Indonesia contributes to GDP, national revenue, and employment possibilities. Despite this, Indonesia's agriculture business is underdeveloped and confronts many impediments (David, 2017; Von Rintelen et al., 2017). If a nation wants agriculture to increase public welfare and spur national progress, resolving these issues becomes challenging. An agricultural revolution is required to make Indonesia a great nation (Nikolić et al., 2016; Pranowo et al., 2022; Tumiwa et al., 2022). Indonesia is the largest agricultural nation in the world, and its biodiversity-rich land area is second only to Brazil's. This is evidenced by the vast array of food crops, horticulture, plantations, and farms that have been farmed for centuries and serve as a source of food and societal prosperity.

Farmers are the agricultural industry's backbone. Farmers are directly responsible for the sector's prosperity (Cavicchioli et al., 2018; Klerkx et al., 2019). Farmers' interests are tightly tied to their income, but social stability and national economic progress are also directly linked to farmers' income. Increasing farmers' incomes is their best hope from the perspective of their interests; from the perspective of rural development, poor rural public utilities are closely related to lower levels of farmers' income; and from the perspective of the national economy, if farmers' incomes do not increase, rural purchasing power will not

be enhanced, domestic demand will not be able to grow, and the economy will not be able to develop (Arif et al., 2019; Balkrishna et al., 2022). Farmers cannot become wealthy, and it is impossible to construct a thriving community on all fronts. Increasing farmer income solves the problems impacting peasants, the countryside, and agriculture (Birthal et al., 2017). Consequently, it remains essential to comprehend the current situation of farmers' income and seek measures to increase it. Literature suggests that farmers' income growth in Indonesia is lower than GDP growth (Hanggana, 2017; Hutapea, 2018). Farmers in Indonesia face several significant problems, including 1) low returns due to low sale prices, 2) lack of funding and investment opportunities, 3) lack of adoption of new technology due to resource shortages, and 4) climate change (Merten et al., 2021; Sembiring et al., 2021). There is an immediate need to solve these concerns to support farmers and the agriculture industry. Figure 1 illustrates the agricultural GDP of Indonesia.

The present study will address the following gaps in the prior literature: 1) Every country in the world has some economic sectors regarded to be its lifeblood. Farmers are the backbone of every nation's economy, especially in agriculturally dependent nations. Particularly in developing countries, farmers are members of a substandard community. To boost their economies, the governments of these nations have made particular efforts to help their farmers through agriculture. Although farmers' income has been studied extensively from many viewpoints and at various times, it has not yet achieved its zenith because many of its features remain to be investigated. 2) Lativa et al. (2022) examined the effect of

crude oil exports on the income and employment of Indonesian farmers; however, the current study will also examine farmers' income from microfinance institutions' profitability, agriculture credits, and government subsidies in Indonesia using a new data set. 3) The equation consisting of farmers' income, agriculture credits, the profitability of agribusiness microfinance institutions, government subsidies, government agriculture loans, and economic growth has not been tested in recent years, notably in Indonesia. 4) [W. Chen et al. \(2022\)](#) researched farmers' income growth and rural digital constructs; however, the current study will focus on farmers' income from the perspective of government and agri-institutions using a new data set. 5) [Yang et al. \(2022\)](#) also examined the farmer's income from the perspective of non-food cultivation; however, the current study will examine it from the perspectives of agriculture credits, agribusiness microfinance institutions' profitability, government subsidies, government agriculture loan, and economic growth with a new data set, focusing on Indonesia. The significance of the present study is that it will 1) shed light on the importance of farmers in the country as well as their

income for the betterment of their future, particularly in Indonesia; 2) assist agriculture-related professionals in reviewing their policies with the intention of uplifting agriculture-related professionals, particularly farmers; and 3) enable researchers to investigate more aspects relating to the increase in farmers' income, particularly in Indonesia.

The opening includes a discussion of research gaps and significance. The second chapter discusses the literature regarding farmers' income, agriculture credits, the profitability of agribusiness microfinance institutions, government subsidies, government agriculture loans, and economic growth. The third chapter discusses techniques, including collecting data regarding farmers' income, agriculture credits, the profitability of agribusiness microfinance institutions, government subsidies, government agriculture loans, and economic growth. The fourth chapter presents the outcomes of the data analysis. The final chapter presents the study's conclusion, ramifications, and recommendations.

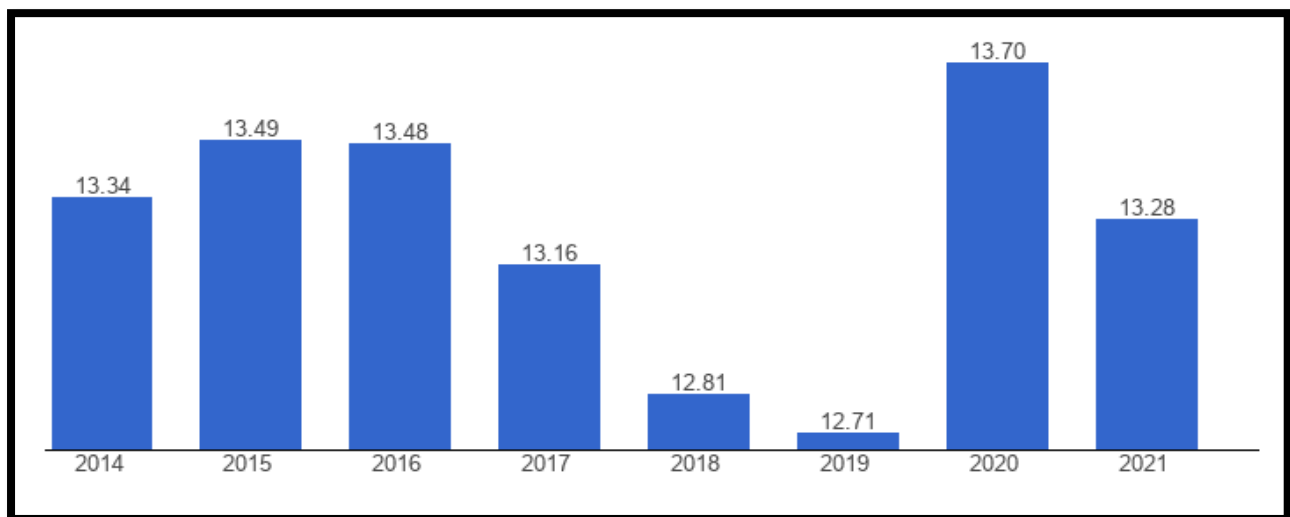


Figure 1: GDP from Agriculture in Indonesia
Source: Global Economy

2. LITERATURE REVIEW

The article examines the effect of agricultural credits given by microfinance organizations, the profitability of agribusiness microfinance institutions, government subsidies, government agricultural loans, and economic growth on the income of Indonesian farmers. Agriculture is regarded as one of the most important contributors to the nation's economy, particularly in countries that have relied on agricultural products. Farmers' prosperity is intimately linked to the performance of the agriculture industry. The improvement of the agriculture industry improves the financial situation of farmers. Since farmers belong to a middle-class social class, they require government and private sector investment support. Agriculture credits are,

therefore, one of the aspects that play a crucial role in supporting farmers in terms of investment. The agriculture credits aid farmers in terms of increased output. Better manufacturing results in increased sales revenue. In this context, [Chandio et al. \(2018\)](#) investigated whether government or private-sector agriculture credits affect small-scale farmers' productivity. The investigation was conducted in 18 villages across three districts in the Pakistani province of Sindh. In 2016, a sample of 180 wheat producers was collected. With the assistance of the CD manufacturing function, the acquired data was evaluated.

According to the investigation's findings, agricultural credit considerably affects wheat yield, with short-term loans having a greater impact than long-term loans. This may be partially attributable to the increased use of

agricultural inputs such as enhanced variety seeds and fertilizers, which can boost wheat yield in the same year. In contrast, LTL users have made far bigger investments in plant protection, irrigation, and land preparation, which may increase wheat output in the following years. Similarly, [Koç et al. \(2019\)](#) examined the agriculture credit market in the broader agriculture industry. In Turkey, the investigation was conducted. A sample of data from 2004 to 2014 was collected. The collected data was analyzed using a spatial panel model. The analysis indicated that a one percent increase in agricultural credits in a particular province result in an average gain of 0.17 percent in agricultural value added per hectare, composed of 0.05 percent from the direct influence and 0.12 percent from the spillover effect.

In contrast to agricultural credits, a 1% increase in a province's government support results in a mixed bag of direct and indirect effects, resulting in a 0.13% decrease in agricultural value-added per hectare in Turkey. In addition, [Bahşi et al. \(2020\)](#) examined if farm credit affects the agricultural output. The research was conducted in Turkey. From 1198 through 2016, a sample of 18 years was obtained. The collected sample was evaluated using the OLS method. According to the analysis findings, the effects of term and agricultural credits are significant. This disparity may be due to the reliance on credit on macroeconomic data and the country's political system. In addition, the analysis revealed that a national agricultural credit structure is required to provide farmers with more financial alternatives for technology and modernization expenditures.

Achieving financial stability is the ultimate objective of every government on the planet. It is ultimately the responsibility of the government to oversee and manage the country's affairs in a manner that promotes financial stability. Agriculture-dependent nations must give particular attention to the agriculture industry. One of the most effective methods to facilitate a sector is to create policies that directly and indirectly support that sector. Government policies are regarded as crucial to the success or failure of any industry in the nation ([Djatmika, 2021](#); [Qiao et al., 2019](#)). In this context, [Hemming et al. \(2018\)](#) conducted a literature study to determine whether government policies on subsidies affect the income and productivity of farmers. The inquiry summarized the 16 studies as a whole. The main finding of the research was that government support in the form of subsidies had a major positive effect on farmers' income. In addition, the subsidies assist farmers in lowering their production costs.

Consequently, their income will increase. Subsidizing a country's sector is the most prevalent method of aiding that country's economy. In this context, [Alizamir et al. \(2019\)](#) analyzed the role of government subsidies in farm sector assistance. The analysis was conducted in the United States. The investigation revealed that: 1) the USA agriculture subsidy program always encourages farmers to plant more acres compared to the no-subsidy case;

however, farmers may plant fewer acres under ARC, resulting in a lower crop supply; 2) contrary to popular belief; which holds that ARC generally outperforms the USA agriculture subsidy program for a wide range of parameter values, we demonstrate that farmers and consumers may be better off under the USA agriculture subsidy program; and 3) contrary to popular belief, which holds The outcomes of the inquiry provide recommendations to farmers for adding crops in subsidy programs and illustrate that enrollment statistics for farmers supports these recommendations. In addition, [Latruffe et al. \(2017\)](#) examined whether subsidies and technical efficiency have a role in bolstering the agriculture sector. The probe took place in the European Union. The study used a sample spanning seventeen years, from 1990 to 2007. The collected material was analyzed using a variety of analysis techniques. The analysis indicated that their government subsidies significantly impacted the agricultural sector's output.

Similarly, [Latruffe et al. \(2016\)](#) analyzed the effect of government policies on agriculture productivity as a secondary effect. The research was conducted in France. The investigation included a sample of sixteen years, from 1990 to 2006. The analysis indicated that government subsidies had a major impact on agricultural output in France.

Each nation's economy is comprised of a variety of components. Every aspect of the economy has its special significance. Agriculture is one of the highest-rated industries on a global scale. On the one hand, this sector supports the economy through exports, while on the other, it provides the country's essential needs, such as food. Consequently, governments pay special attention to the development of this industry. The improvement of this industry has a good effect on the farmers' financial support. Thus, the progress of the agriculture sector is a strong indication of the economic improvement of farmers ([Balkrishna et al., 2022](#); [Sen et al., 2017](#)). The government supports the agriculture sector in various ways, including through loans and subsidies. [Vogel \(2021\)](#) explored if the agriculture loan had a major impact on the income distribution of farmers. In Costa Rica, the investigation was carried out. The results demonstrated a substantial correlation between the agriculture loan and the income distribution of Costa Rican farmers. Providing farmers with an agriculture loan assists them financially and encourages them to enhance their output capacity. In this context, [Chandio et al. \(2019\)](#) studied if an association exists between agricultural loans and the size of farmers' farms. The investigation took place in Pakistan.

A sample of 180 farmers was collected and used. MLE was utilized to examine the obtained material. According to the investigation's findings, considerable correlations exist between loans, farm size, fertilizer, labor, and rice yield. Smallholder farmers in Sindh, Pakistan, are increasing their technical efficiency and rice production due to agricultural credit and farm size. In addition, [Sekyi et al.](#)

(2017) investigated whether farmers' access to agriculture loans and restraints influences their production. The investigation took place in Ghana. The study utilized a sample of 2,968 farmers. The collected material was tested with the CMP. According to the calculations, age, non-mechanized agricultural equipment, and group membership were the factors affecting farmers' access to financing. Conditions of credit constraint were influenced by household size, geography, group participation, and durable household assets.

The primary objective of any nation is to improve its citizens' standard of living. The standard of living includes increased employment opportunities, business opportunities, and company efficiency. All of these elements depend on the economic stability of the nation. If the country's economy is rising, this will result in the country's prosperity. A nation's economic growth directly impacts all elements that are directly or indirectly related to the economy (Khan et al., 2020). The agriculture industry is directly related to the economy, and farmers constitute the agriculture sector's backbone (Humphries et al., 2019; Kan et al., 2019). Increasing their income solves the problems plaguing farmers, rural areas, and peasants. It is inextricably linked to the general state of social stability and national economic growth, as well as the interests of farmers and rural development. Due to this, it is still essential to concentrate on and research how to address the issue of farmers' income development fundamentally. In this context, Q. Chen (2019) explored the relationship between the income of farmers and the country's economic growth.

In Fuji, the investigation was conducted. The study employed a sample spanning 31 years, from 1978 to 2009. The analysis indicated that economic expansion positively affected farmers' income, notably in Fuji. Similarly, Sertoglu et al. (2017) studied whether agricultural farmers contribute to economic growth. The investigation took place in Nigeria. A sample spanning 35 years was collected. The sample spans the years 1981 through 2013. The collected material was examined with the assistance of VECM. According to the findings of the investigation, there is a correlation between economic growth and agriculture. The improvement in the agriculture sector has a good effect on the economy, supporting farmers through subsidies and loans.

The institutions play a crucial role in improving the performance of the associated sector. The government devotes considerable attention to the growth of institutions. Institutional development contributes to the financial and employment well-being of those associated with a given industry (Duramany-Lakkoh, 2021). Additionally, the institution contributes to the economy through taxation on profitability. Typically, microfinance organizations have a direct impact on the middle class. Thus, microfinance institutions play a crucial role in sustaining the income of farmers in developing countries, where they belong to a

middle-class society (Alemayehu, 2020; Murad et al., 2017). In this context, Marina et al. (2020) examined whether microfinance agriculture-related organizations impacted farmers' farming practices. The research was conducted in Chilli. The experiment utilized 71 response data samples. The analysis found that microfinance agriculture institutions considerably affected farmers' agricultural improvement. Savings are the ultimate goal of every person on the globe to ensure future generations' prosperity. Saving is only possible with a sufficient income. In this regard, Mulatu (2020) also examined the role of microfinance institutions as a factor in farmers' savings. The investigation took place in Ethiopia. 200 houses served as the data sample for the inquiry. The study's results demonstrated that education level and perception of interest rates have a substantial impact on household savings. The district's microfinance service delivery was hindered by various hurdles, such as poor loan recovery performance, low savings mobilization, a lack of office space, service knowledge, and engagement with other government sectors.

3. RESEARCH METHODS

This article examines the effect of agricultural credits, the profitability of agribusiness microfinance companies, government subsidies, government agricultural loans, and economic growth on the income of Indonesian farmers. From 1991 to 2020, secondary sources such as central bank databases and WDI were employed to collect secondary data for the study. This article has produced the following equation with understudy constructs:

$$FI_t = \alpha_0 + \beta_1 AC_t + \beta_2 AMFIP_t + \beta_3 GS_t + \beta_4 GAL_t + \beta_5 EG_t + e_t \quad (1)$$

Where;

FI	=	Farmers' Income
<i>t</i>	=	Period
AC	=	Agricultural Credits
AMFIP	=	Agribusiness Microfinance Institutions Profitability
GS	=	Government Subsidies
GAL	=	Governmental Agricultural Loans
EG	=	Economic Growth

The article utilized farmers' income to measure agriculture, forestry, and fishing's value added (% of GDP). In addition, the study employed four independent variables, including agricultural credits measured with credit to the agricultural sector to total credit, agribusiness microfinance institutions' profitability measured with return on equity, government subsidies estimated with subsidies to the agriculture sector (percent of expenses), and government agricultural loans calculated with the loan to the agricultural industry to total loan. Lastly, the article used economic growth, defined by annual GDP growth percentage, as the control variable. The sources and measurements for these variables are listed in Table 1.

Table 1: Variables with Measurements

S#	Variables	Measurement	Sources
01	Farmers' Income	Agriculture, forestry, and fishing, value added (% of GDP)	WDI
02	Agricultural Credits	Credit to the agricultural sector to total credit	Central Bank
03	Agribusiness Microfinance Institutions Profitability	Return on equity	Central Bank
04	Government Subsidies	Subsidies to the agriculture sector (% of expenses)	WDI
05	Governmental Agricultural Loans	Loan to the agricultural sector to total loan	WDI
06	Economic Growth	GDP growth annual percentage	WDI

Using descriptive statistics, the study describes the factors in depth. Using a correlation matrix, the study also illustrates the correlation between the variables. In addition, the unit root is examined using the Augmented Dickey-Fuller (ADF) test. Below is the equation for the unit root test:

$$d(Y_t) = \alpha_0 + \beta t + \gamma Y_{t-1} + d(Y_t(-1)) + \epsilon_t \quad (2)$$

The ADF test for unit root can examine the unit root separately for each variable. Hence, the separate equation is given below:

Farmers' Income

$$d(FI_t) = \alpha_0 + \beta t + \gamma FI_{t-1} + d(FI_t(-1)) + \epsilon_t \quad (3)$$

Agricultural Credits

$$d(AC_t) = \alpha_0 + \beta t + \gamma AC_{t-1} + d(AC_t(-1)) + \epsilon_t \quad (4)$$

Agribusiness Microfinance Institutions Profitability

$$d(AMFIP_t) = \alpha_0 + \beta t + \gamma AMFIP_{t-1} + d(AMFIP_t(-1)) + \epsilon_t \quad (5)$$

Government Subsidies

$$d(GS_t) = \alpha_0 + \beta t + \gamma GS_{t-1} + d(GS_t(-1)) + \epsilon_t \quad (6)$$

Governmental Agricultural Loans

$$d(GAL_t) = \alpha_0 + \beta t + \gamma GAL_{t-1} + d(GAL(-1)) + \epsilon_t \quad (7)$$

Table 2: Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
FI	30	22.092	1.908	14.098	27.227
AC	30	0.342	0.987	0.319	0.402
AMFIP	30	48.008	2.976	41.092	55.999
GS	30	44.982	2.027	32.075	52.955
GAL	30	0.543	0.272	0.429	0.612
EG	30	4.567	0.762	3.892	7.927

Using a correlation matrix, the study also illustrates the correlation between the variables. In Indonesia, agricultural credits, the profitability of agribusiness microfinance

Table 3: Matrix of Correlations

Variables	FI	AC	AMFIP	GS	GAL	EG
FI	1.000					
AC	0.774	1.000				
AMFIP	0.620	0.664	1.000			
GS	0.521	0.629	0.529	1.000		
GAL	0.487	0.661	0.538	0.777	1.000	
EG	0.488	0.721	0.377	0.511	0.653	1.000

In addition, the unit root is examined using the ADF test. The tests revealed that the AC and GAL are level and steady. In contrast, FI, AMFIP, GS, and EG are stationary at first difference. This is highlighted in Table 4.

The co-integration of the model has also been examined

Economic Growth

$$d(EG_t) = \alpha_0 + \beta t + \gamma YEG_{t-1} + d(EG_t(-1)) + \epsilon_t \quad (8)$$

The co-integration of the model has also been examined using the co-integration examination test. The study also utilized the ARDL model to investigate the relationship between the variables. The ARDL model is useful for time series data and variables with no unit root at I(0) and I(1) (Mensah et al., 2019). Additionally, the ARDL model controls the influence of autocorrelation and heteroscedasticity. The ARDL equation is as follows:

$$\Delta FI_t = \alpha_0 + \sum \delta_1 \Delta FI_{t-1} + \sum \delta_2 \Delta AC_{t-1} + \sum \delta_3 \Delta AMFIP_{t-1} + \sum \delta_4 \Delta GS_{t-1} + \sum \delta_5 \Delta GAL_{t-1} + \sum \delta_6 \Delta EG_{t-1} + \varphi_1 FI_{t-1} + \varphi_2 AC_{t-1} + \varphi_3 AMFIP_{t-1} + \varphi_4 GS_{t-1} + \varphi_5 GAL_{t-1} + \varphi_6 EG_{t-1} + \epsilon_t \quad (9)$$

4. RESEARCH FINDINGS

Using descriptive statistics, the study describes the factors in depth. The findings revealed that the average value for FI was 22.092 percent, the average value for AC was 0.342 percent, and the average value for AMFIP was 48.008 percent. The research also revealed that the average value for GS was 44.982 percent, while the average value for GAL was 0.543 percent and the average value for EG was 4.567 percent. Table 2 emphasizes these numbers.

institutions, government subsidies, government agricultural loans, and economic growth were found to have a strong and positive relationship with farmers' income. This is highlighted in Table 3.

using the co-integration examination test. The results demonstrated that the computed f-statistics (5,553) exceed the critical values. The results suggested that co-integration exists. This is highlighted in Table 5.

Table 4: Unit Root Test

Augmented Dickey-Fuller Test (ADF)	Level	t-statistics	p-values
FI	I(1)	-5.720	0.000
AC	I(0)	-2.712	0.031
AMFIP	I(1)	-4.984	0.001
GS	I(1)	-6.772	0.000
GAL	I(0)	-2.029	0.039
EG	I(1)	-5.188	0.000

Table 5: ARDL Bound Test

Model	F-statistics	Lag	Level of Significance	Bound test critical values	
				I (0)	I (1)
FI/ (AC, AMFIP, GS, GAL, EG)	5.553	4	1%	6.672	6.920
			5%	5.091	5.534
			10%	4.729	4.928

The article examines the effect of agricultural credits given by microfinance organizations, the profitability of agribusiness microfinance institutions, government subsidies, government agricultural loans, and economic growth on the income of Indonesian farmers. The study also utilized the ARDL model to examine the short-run

relationship between the variables. In the short term, agricultural credits, the profitability of agribusiness microfinance institutions, government subsidies, government agricultural loans, and economic growth were found to have a strong and positive relationship with farmers' income in Indonesia. This is highlighted in [Table 6](#).

Table 6: Short-Run Coefficients

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(AC)	2.733	0.673	4.061	0.002
D(AMFIP)	1.027	0.290	3.541	0.011
D(GS)	3.905	1.291	3.025	0.024
D(GAL)	2.892	0.673	4.297	0.001
D(EG)	1.827	0.533	3.428	0.009
CointEq(-1)*	-1.892	0.374	-5.059	0.000
R-squared	0.673	Mean dependent var		-0.034
Adjusted R-squared	0.612	SD dependent var		2.252

The study also utilized the ARDL model to examine the long-term relationship between the variables. The results suggested that agricultural credits, the profitability of agribusiness microfinance institutions, government

subsidies, government agricultural loans, and economic growth have a significant and favorable long-term relationship with farmers' income in Indonesia. This is highlighted in [Table 7](#).

Table 7: Long-Term Coefficients

Variable	Coefficient	Std. Error	t-Statistic	Prob.
AC	2.938	0.539	5.451	0.000
AMFIP	1.784	0.463	3.853	0.011
GS	4.671	1.823	2.562	0.043
GAL	2.883	0.476	6.057	0.000
EG	2.763	1.033	2.674	0.039
C	1.892	0.432	4.379	0.002

5. DISCUSSIONS

The article examines the effect of agricultural credits given by microfinance organizations, the profitability of agribusiness microfinance institutions, government subsidies, government agricultural loans, and economic growth on the income of Indonesian farmers. Agriculture credit was found to have a favorable correlation with farmer income. These results are consistent with a previous study conducted by [Abdallah \(2018\)](#), which demonstrates that a number of financial institutions provide credit specifically to individuals or companies engaged in agricultural industries. These loans allow them to make additional agricultural investments to increase their

efficiency and yield. Consequently, total revenues rise, ensuring an increase in farmers' income. These findings are also corroborated by the research of [Akhtar et al. \(2019\)](#), which indicates that the growth in the issuance of credit by financial institutions to enterprises engaged in the agriculture business enhances their financial capacity and enables them to broaden their agricultural scope. This thus increases the company's ability to pay farmers more. These outcomes are consistent with [Ullah et al. \(2020\)](#)'s research. According to this previous study, boosting agricultural credits can increase farmers' revenue by raising the quality of their output.

The results indicated that the profitability of agribusiness

microfinancing institutions (AMI) is positively correlated with farmers' income. These findings are consistent with [Hossain et al. \(2019\)](#). The study asserts that certain AMIs provide short-term loans to various individuals and enterprises, particularly agricultural businesses. If AMI profitability improves, enterprises will have more resources to give microfinance to agribusiness, and the resulting agricultural expansion will allow farmers to earn more money. These outcomes are also corroborated by [Oluwamayokun et al. \(2021\)](#)'s study. This study hypothesizes that the profitability of AMIs dictates their ability to provide loans or credits. Agribusinesses with access to loans and credit can expand their operations and pay their employees more. Following the findings of [Ogundeji et al. \(2018\)](#), if the profitability of AMIs increases the funding allocated to agriculture and encourages agriculture enterprises to pay farmers a higher wage, the results presented here are consistent.

The results revealed a correlation between government subsidies and the income of farmers. These findings concur with a previous study by [Amfo et al. \(2020\)](#) that provides light on government subsidies to the agriculture business. When the government offers various monetary incentives to agribusinesses and agricultural organizations to maintain their supply, farms can earn more from the sale of agricultural commodities, according to a prior study. These findings are further corroborated by the research of [Yanuarti et al. \(2019\)](#), which demonstrates that when the government agrees to provide agricultural enterprises with subsidies, the firms maintain their productivity and marketing efforts and can generate larger revenues. Thus, the enterprises can enhance the revenue levels of farmers. These results are also consistent with [Hemming et al. \(2018\)](#)'s research. Farmers' incomes improve due to the expansion of agricultural firms that can receive greater government subsidies.

The findings revealed a correlation between government agricultural loans and farmer income. These findings are reinforced by the research of [Kuye et al. \(2019\)](#), which asserts that the likelihood of a rise in farmers' incomes increases if the government formulates its policies to provide loans to small agricultural enterprises. These findings are consistent with a previous study by [Soullier et al. \(2018\)](#), which found that in countries where the government provides agricultural loans to businesses on lenient terms regarding interest, collateral, and loan repayment, agricultural businesses can benefit from government loans and earn more. Therefore, agricultural corporations can generate greater profits for farmers. These findings are consistent with [Onyiriuba et al. \(2020\)](#), who found that an increase in government agricultural loans ultimately leads to a rise in farmer earnings.

The results demonstrated a positive relationship between economic growth and farmers' income. These findings are consistent with a previous study by [Maja et al. \(2021\)](#), which indicates that when a country's economic growth rate increases, there is an increase in the usage of

information and communication technologies. This improves the knowledge and abilities of farmers, allowing them to execute agricultural operations more effectively and make more money. Consequently, farm revenues are more likely to rise. These conclusions are corroborated by [Rahman et al. \(2020\)](#)'s study, which indicates that a country with a greater economic growth rate has an effective agricultural system. Within this agricultural system, farmers can earn more revenue. These outcomes concur with the findings of [Akbari et al. \(2020\)](#). This previous study demonstrates that economic growth contributes significantly to agricultural growth and, thus, enhances farmer earnings.

6. THEORETICAL IMPLICATIONS

Due to its contributions to the body of knowledge, the current study may provide researchers with guidelines. The emphasis of the study is the effects of agricultural credits, AMI profitability, government subsidies, government agricultural loans, and economic growth on farmers' income. Previous studies have analyzed the role of agricultural credits, AMI profitability, government subsidies, governmental agricultural loans, and economic development in determining farmers' income. Still, there is no comprehensive simultaneous study on the relationship between these factors and farmers' income. The current research distinguishes itself in the literature by concurrently evaluating the correlations between these parameters.

Similarly, most available research focuses solely on the effect of government policy on farmers' income levels. In contrast, the current study, which examines government agricultural loans and economic growth as two government policies affecting farmers' income, contributes to the body of knowledge. In addition, this is the first study to analyze agricultural credits, AMI profitability, government subsidies, government agricultural loans, and economic growth to evaluate farmers' income within the Indonesian economy.

7. EMPIRICAL IMPLICATIONS

This literary work is incredibly important for emerging economies like Indonesia. This document guides economists and the government on how to grow the agricultural sector and improve the welfare of farmers. The report recommends that a policy be enacted to encourage financial institutions to give special agriculture credits by implementing simple procedures and favorable interest rates to increase farmers' income levels. It is recommended that authorities attempt to increase the profitability of AMI to expand agriculture and increase farmers' income. The study presents a guideline that the government must assess the need for agriculture in the country and devise a strategy to provide various subsidies to agribusinesses to flourish and increase farmers' income levels.

Similarly, the government must use various financial instruments to expand agricultural loans directly or via financial institutions to increase farmers' income. Using

government and micro-financial institutions to enhance farmers' incomes, the study aids policymakers in formulating relevant policies. The study also indicates that politicians must work to boost the rate of economic growth to increase farmers' income.

8. CONCLUSION

The study aims to determine the effectiveness of agricultural credits, AMI profitability, government subsidies, and government loans in boosting farmers' income. It also investigates the impact of economic growth on the income of farmers. According to empirical evidence from the Indonesian economy, farmers' income is positively correlated with agricultural credits, AMI profitability, government subsidies, government agricultural loans, and economic growth. The results suggested that the expansion in agribusiness and the acceleration of profitability boost farmers' income in countries where financial institutions grant special credits for encouraging agriculture. When institutions have the policy to give financing to agribusiness, the results also reveal that farmers could utilize new sources and technologies for various agricultural operations.

Consequently, the expansion of agriculture increases farmers' incomes. In addition, the results suggested that government subsidies make it easier for farmers to use innovative agricultural technologies and practices. Therefore, increased production increases the income share of farmers. In addition, when the government recognizes the importance of agriculture and establishes special rules for arranging agricultural loans, the number of people working on farms to cultivate food and non-crops, plants, and greenery increases, and yields are of higher quality. Therefore, the growth in agricultural revenues increases the income of farmers. The study also revealed that as a nation's economic growth increases, the agricultural sector expands and generates greater money for farmers.

9. LIMITATIONS

There are certain limits to the study's implications. With some revisions, the authors can provide a superior research paper. In this study, only a few variables, including agricultural credits, AMI profitability, government subsidies, government loans, and economic growth, were considered to determine farmers' income levels. Farmers' revenues can also be changed by technical innovation, business size, and the farmers' job productivity. Fewer explanatory elements of farmers' income limit the research's comprehensiveness and may doubt the conclusions' dependability. The authors evaluated the role of agricultural credits, AMI profitability, government subsidies, government agricultural loans, and economic growth on farmers' income levels in Indonesia. They gathered data from a restricted period. The conclusions of a study undertaken in a single country may not apply to all countries, and if they are based on data from a specified period, they may lack validity. For broader and more conclusive results, authors must analyze the relationship

between agricultural credits, AMI profitability, government subsidies, government agricultural loans, economic growth, and farmers' income in many nations over a longer period.

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