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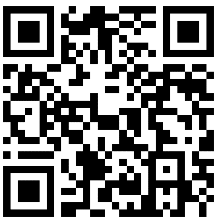
The Influence of Rice Productivity, Gross Regional Domestic Product of the Food Crop Subsector and Inflation on the Exchange Rates of Food Crop Farmers in Indonesia



Kurniati[1], Devi Valeriani[2], Ayu Wulandari[3]

[1] Student Department of Economic, Faculty of Economic, University of Bangka Belitung, Indonesia

[2,3] Lecturer Department of Economic, Faculty of Economic, University of Bangka Belitung, Indonesia

ABSTRACT: The farmer exchange rate is a comparative value between the price index received by farmers and the index paid by farmers. In this context, it is necessary to develop indicators that can accurately measure the purchasing power of farmers, who represent a significant proportion of the agricultural sector. The objective of this study is to analyze and determine the effect of rice productivity, food crop subsector GRDP, and inflation on the exchange rate of food crop farmers in Indonesia. This type of research is a quantitative research study. The data for this study were obtained from the Central Bureau of Statistics, which provided secondary data. The data utilized in this study are comprised of data on the exchange rate of food crop farmers, rice productivity, food crop subsector GRDP, and inflation for the years 2020-2022. The data analysis employed panel data linear regression analysis. The results indicated that rice productivity exerted a negative and insignificant influence on the exchange rate of food crop farmers in Indonesia. Conversely, the GRDP of the food crop subsector and inflation exhibited a negative and significant effect on the exchange rate of food crop farmers in Indonesia.

KEYWORDS: Farmer's Exchange Rate, Rice Productivity, GRDP of Food Crops Subsector, Inflation

I. INTRODUCTION

Indonesia is a country with a significant agricultural sector, which contributes significantly to the country's economy. Indonesia is an agrarian country with a variety of resources, including a large land area, fertile soil, and high biodiversity. This will make Indonesia the largest agricultural country in the world (Hidayat et al., 2022). The advancement of agriculture in Indonesia has played a pivotal role in the country's overall development, both directly and indirectly. It has created a conducive environment for the implementation of various development initiatives and fostered interconnectivity with other sectors. Economic development is a form of government policy that is designed to achieve public welfare. The objective of economic development is to enhance the quality of life for citizens, expand employment opportunities, and foster income equality across the region (Wulandari, 2021). As stated by Sahri et al. (2022), the objective of agricultural development, particularly in the context of food production, is to enhance food self-sufficiency, augment farmers' income, enhance local nutrition, and expand employment opportunities, while maintaining the sustainability of natural resources. In this context, it is necessary to develop indicators that can accurately measure the purchasing power of farmers, who represent a significant proportion of the agricultural sector. Given that a significant proportion of the Indonesian population continues to derive their livelihood from agriculture, there is considerable optimism that the agricultural sector can serve as a catalyst for economic growth, enhance farmers' incomes and alleviate poverty.

The farmer exchange rate is a comparative value between the price index received by farmers and the index paid by farmers. The price index received from farmers represents a price index that indicates fluctuations in the prices paid to farmers for their agricultural products. The price index paid by farmers is a price index that reflects price developments in accordance with the needs of farmers, both in household consumption and in the process of agricultural production (Central Bureau of Statistics, 2022). As posited by Tenriawaru et al. (2021), the exchange rate for food crop farmers serves as an indicator of the extent of farmer welfare, delineating the purchasing power of products in relation to farmer income. This metric elucidates the capacity of farmers to procure essentials and inputs for production. The term "food" is of paramount importance in the field of agriculture, as it is

one of the most fundamental necessities for human survival. As Keumala and Zainuddin (2018) posit, the current surge in food prices, particularly rice, is attributable to the discrepancy between the value that farmers must pay and the value they receive. This undoubtedly poses a threat to the welfare of farmers and the economy of the community. As stated by Sahri et al. (2022), the objective of agricultural development, particularly in the context of food production, is to enhance food self-sufficiency, augment farmers' income, enhance local nutrition, and expand employment opportunities, while maintaining the sustainability of natural resources.

The following figure presents the exchange rate of food crop farmers in Indonesia from 2019 to 2023, based on data obtained from the Central Statistics Agency:

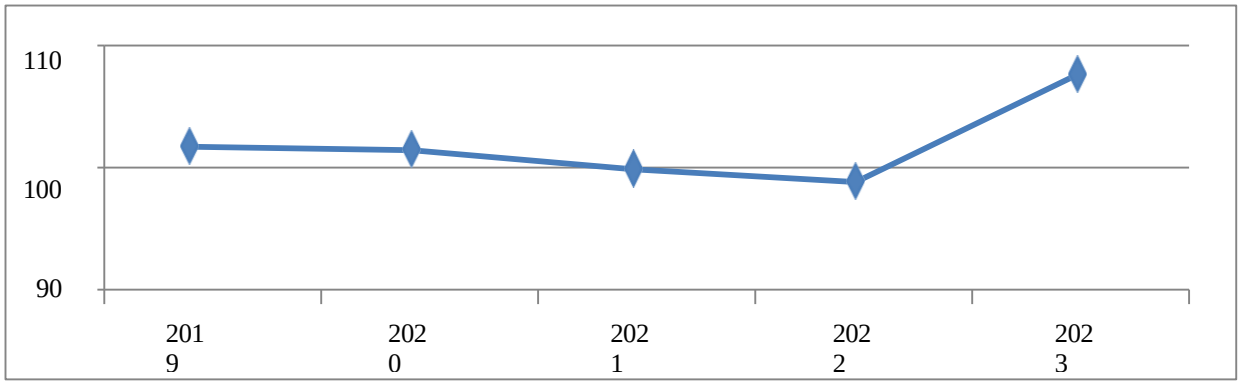


Figure 1.1 Farmer Exchange Rate for Food Crops in Indonesia 2019-2023

Source: Data processed, 2024

Figure 1.1 illustrates a decline in the exchange rate of food crop farmers in Indonesia from 2019 to 2022. However, in 2023, the rate increased significantly, reaching a peak of 107.63 percent. The percentage increase compared to the previous year, namely 2022, by 8.81 percent. The lowest percentage of food crop farmers in Indonesia was observed in 2022, with an exchange rate of 98.82 percent. The percentage of food crop farmers' exchange rate decreased in comparison to the previous year of 2021, with a decline of 1.06 percent. The average exchange rate of food crop farmers in Indonesia from 2019 to 2023 was 101.90 percent.

II. LITERATURE REVIEW

A. Farmer Exchange Rate

The farmer exchange rate is defined as the ratio between the price index received by farmers and the price index paid by farmers, expressed as a percentage. The price index received by farmers is an index based on the development of producers in terms of their farm business production. Consequently, the value of the price index received by farmers serves as an indicator of fluctuations in agricultural production. Agricultural products are utilized as data to support the calculation of agricultural sector income. The price index paid by farmers is a price index based on changes in prices required by farmers, such as the consumption needs of farmers and the needs of the agricultural production process. The value of the price index is determined by this index. The price index paid by farmers can be utilized to identify fluctuations in the prices of goods utilized in the agricultural production process (Aulia et al., 2021).

In conceptual terms, the exchange farmer rate is a measure of the ability of farmers to exchange agricultural products produced with agricultural products purchased for agricultural production. The farmer exchange rate is defined as the ratio between the price received by farmers and the price paid by farmers. The exchange farmer rate is expressed in the form of an index as follows:

FER = PIR/PIP ……(1)

Description:
FER : Farmer Exchange Rate
PIR : Price Index Received by Farmers PIP : Price Index Paid by Farmers
Here are some theories that match this research as follows:

a. Farming Business Theory

Farming theory encompasses a range of human activities related to the management of natural resources and the

environment, with the objective of creating agricultural products that meet food needs, improve the welfare of farmers, and generate maximum economic profit (Sinaga et al., 2014). Farming is a science that examines the optimal coordination of production factors to maximize profits for farmers. Farming encompasses a range of activities, including processing, planting, maintaining land, harvesting crops, and raising livestock. These activities are aimed at producing food, feed, fiber, industrial raw materials, and sources of income. Farming is a significant contributor to the economies of many countries, providing food for the population and raw materials for industry. The development of farming science in Indonesia is a long-standing phenomenon, shaped by a multitude of geographical, cultural, and socioeconomic factors across the country (Fadhla, 2017).

b. Production Theory

Production is an activity carried out by individuals or groups in the creation or addition of goods and services. The production of goods and services is supported by a number of factors, which are collectively known as production factors. All forms of business activities that convert inputs into outputs can be observed through the production function of a business item. The production function of goods can be used to determine the optimal amount of goods that can be produced. The production function can be formulated in the form of the Cobb-Douglas function equation (Sukirno, 2015), as follows:

$$Q = f(K,L,R,T) \quad (2)$$

The expansion of capital resources has the effect of increasing the rate of output growth. The growing volume of private investment will decelerate the generation of output and utilization of labor, as postulated by Keynes in his multiplier model, which represents a component of economic growth. Consequently, all components will expand in tandem with the expansion of one component (Valeriani, 2019).

B. Rice Productivity

Productivity is defined as the ability of land to produce certain crops. Rice productivity is the amount of rice production (paddy rice and field rice) calculated per unit area of land (Central Bureau of Statistics, 2022). Rice is one of the most important foodstuffs in Indonesia, and the demand for rice tends to increase along with the increase in population. As an agrarian country, Indonesia has significant potential to achieve food self-sufficiency, particularly in rice production. Productivity is a function of the comparison between economic resources utilized and the results achieved. However, numerous perspectives posit that productivity not only considers the quantity but also the quality of the products produced and should be utilized as a measure of productivity levels.

To calculate productivity, you can use the following formula:

$$Produktivity = \frac{Output}{Input} = \frac{Total\ Production}{Land\ Area} \quad (3)$$

As stated by Alamri et al. (2022), the advancement of technology, including the utilization of agricultural tools and machinery, the expansion of agricultural land, and the implementation of pest and plant disease control measures, can collectively enhance productivity. Additionally, the diversification of food sources, which encourages the consumption of a diverse range of foods, can help to reduce reliance on a single source of food, such as rice. Regulating food prices and distribution also contributes to improving food security by ensuring the availability of sufficient food to meet family needs. The agricultural sector, in order to produce rice, corn, and other agricultural products, requires a number of inputs, including labor, land, technology, and capital.

C. GRDP of Food Crop Subsector

The growth and development of a country or region can be quantified by means of an indicator designated as gross regional domestic product (GRDP). GRDP is defined as the sum of the added value (products) created by various business activities within a region (Pratiwi, 2015). In the calculation of gross regional domestic product (GRDP), two types of prices are employed: gross regional domestic product based on current price and gross regional domestic product based on constant prices. Based on current prices represents the value added by the production of goods and services in the current year, calculated using current prices. Conversely, based on constant prices represents the added value of goods and services, and these prices serve as a reference point for one year (Rhomadoni et al., 2018).

$$GRDP = (Q_1 \times P_1) + (Q_2 \times P_2) + (Q_3 \times P_3) + \dots + (Q_n \times P_n) \quad (4)$$

D. Inflation

In general, inflation is defined as the sustained increase in the prices of goods and services. As the prices of domestic goods and services rise, so too does the rate of inflation. The rise in the cost of goods and services results in a decline in the purchasing power of money (Central Bureau of Statistics, 2020). Nevertheless, an increase in the price of a single or two select goods is not

regarded as inflation unless the rise is pervasive and results in a minimal increase in the cost of other goods.

The following theories of inflation have been proposed by researchers (Simanungkalit, 2020) :

a. The Quantity Theory of Money

The theory of inflation was initially developed from a theory known as the quantity theory of money. The quantity theory is essentially a hypothesis regarding the factors that result in fluctuations in the price level when the increase in the amount of money in circulation is the primary factor or factors that influence the rise in the price level.

b. Keynes' Theory

Keynes came to understand that inflation is caused by an excessive desire for more of the available goods and services. As a consequence of the excessive desire to fulfill needs, demand increases while supply remains fixed. Consequently, prices will rise, and agencies will print more money to purchase goods and services. Furthermore, inflation may arise as a consequence of Entrepreneurial success. Entrepreneurs receive credit, which they then use to purchase goods and services. This increases aggregate demand while aggregate supply remains constant, which in turn causes price increases.

c. Structural Theory

This theory posits that two structural issues in a developing economy can give rise to inflation. Firstly, export earnings are inelastic, meaning that the growth of export value is slower than that of other sectors. This is due to a deterioration in the terms of trade and the production of export goods that are less responsive to price increases. As export growth decelerates, the capacity to import essential commodities will concomitantly diminish. It is not uncommon for developing countries to implement import substitution policies, despite the high costs and subsequent inflationary effects. Secondly, another issue with the economic structure of developing countries is that domestic food production is inelastic. This means that the growth of domestic food production is not as fast as the increase in population and per capita income. Consequently, domestic food prices tend to increase more than the increase in prices of other goods.

III. METHODOLOGY

This research employs a quantitative approach, which a methodology is based on the examination of secondary data and the statistical analysis of numerical data through the use of research tools in order to test the hypothesis (Balaka, 2022). The research was conducted in 34 provinces of Indonesia between 2020 and 2022. The sample of this study is a saturated sample, comprising data on rice productivity, GRDP, inflation, and the exchange rate of food crop subsector farmers in Indonesia, with a total of 102 observations. The number of samples obtained from panel data in 34 provinces is as follows: Aceh, North Sumatra, West Sumatra, Riau, Jambi, South Sumatra, Bengkulu, Lampung, Bangka Belitung Islands, Riau Islands, DKI Jakarta, West Java, Central Java, DI Yogyakarta, East Java, Banten, Bali. The provinces of West Nusa Tenggara, East Nusa Tenggara, West Kalimantan, Central Kalimantan, South Kalimantan, East Kalimantan, North Kalimantan, North Sulawesi, Central Sulawesi, South Sulawesi, Southeast Sulawesi, Gorontalo, West Sulawesi, Maluku, North Maluku, West Papua, and Papua were included in the study. The period under consideration is 2020 to 2022. The research employs secondary data. The data utilized in this study were obtained from the Indonesian Central Bureau of Statistics and encompass information on rice productivity, the gross domestic product (GDP) of the food crop subsector, inflation, and the exchange rate of food crop farmers in 34 provinces across Indonesia.

This study employs a quantitative approach utilizing panel data linear regression analysis techniques. Linear regression analysis is a statistical analysis employed to assess the influence of relationships between multiple independent variables and a dependent variable. The multiple linear regression equation model, as outlined by Saputra et al. (2015), can be expressed as follows:

$$ERFCF_{it} = a + b_1PR_{it} + b_2GDRP_{it} + b_3INF_{it} + \varepsilon_{it} \quad \text{..... (5)}$$

Keterangan :

FCFER	: Food Crop Farmer Exchange Rate
PR	: Productivity Rice
GDRP	: Gross Regional Domestic Product
INF	: Inflation
a	: Intercept
$b_{1,2,3}$	: Koefisien regresi variabel independen
ε_{it}	: error term

IV. RESULT AND DISCUSSION

1. Panel Data Regression Model Selection

A. Chow Test

The Chow test is employed to ascertain the optimal model between the common effect model and the fixed effect model. The results of the chow test are presented in Table 4.1

Table 4. 1 Chow Test Result

Effects Test	Statistic	d.f.	Prob.
Cross-section F	8.194333	(33,65)	0.0000
Cross-section Chi-square	167.379485	33	0.0000

Source: Data processed, 2024

Table 4.1 indicates that the Chow test yielded a probability of cross-section F of 0.0000 with a significance level of 0.05, thereby rejecting the null hypothesis (H_0). The probability value of 0.0000 < 0.05 indicates that the model decision employed in the Chow test is the fixed effect model.

B. Hausman Test

The Hausman test is employed to ascertain the optimal model between the random effect model and the fixed effect model. The results of the Hausman test can be found in Table 4.2.

Table 4. 2 Hausman Test Result

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	7.324923	3	0.0622

Source: Data processed, 2024

Table 4.2 indicates that the Hausman test yielded a probability of cross-section randomness of 0.0622 with a significance level of 0.05, thereby supporting the null hypothesis (H_0). The probability value of 0.0622 exceeds the significance level of 0.05, indicating that the model decision employed in the Hausman test is the random effect model.

C. Uji Lagrange Multiplier

The Lagrange multiplier test is employed to ascertain the optimal model between the common effect model and the random effect model. The results of the Lagrange Multiplier test are presented in Table 4.3.

Table 4. 3 Lagrange Multiplier Test Result

Test Hypothesis			
	Cross-section	Time	Both
Breusch-Pagan	45.23207	0.439513	45.67158
	(0.0000)	(0.5074)	(0.0000)

Source: Data processed, 2024

Table 4.3 indicates that the Lagrange multiplier test yielded a cross-section Breusch-Pagan probability of 0.0000 with a significance level of 0.05, thereby supporting the null hypothesis (H_0). The probability value of 0.0000 is less than the significance level of 0.05, indicating that the model decision utilized in the Lagrange multiplier test is the random effect model.

1. Classical Assumption Test

a. Normality Test

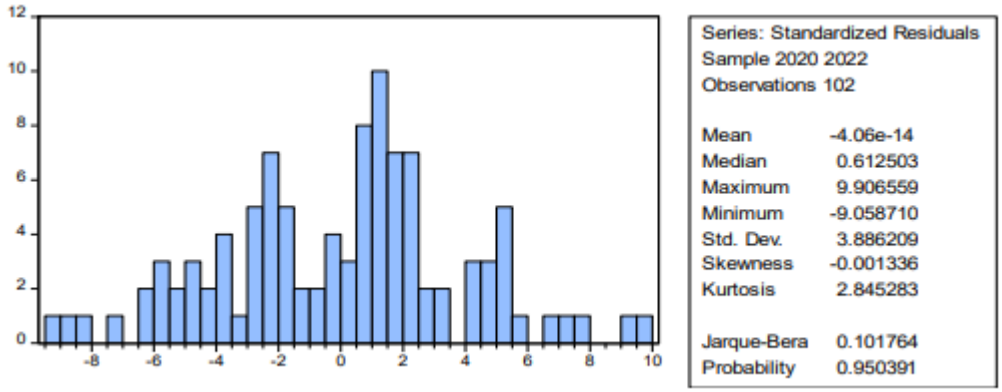


Figure 4.1 Normality Test Result

Source: Research results, data processed, 2024

Figure 4.1 indicates that the normality test yielded a probability of 0.950391, which is greater than 0.05. This result supports the hypothesis that the data are normally distributed. This indicates that the regression model employed in the study is normally distributed.

a. Multikollinearity Test

Table 4. 4 Multikollinearity test Result

	PR	GRDP	INF
PR	1	-0.272012	0.058109
GRDP	-0.272012	1	-0.003224
INF	0.058109	-0.00322423	1

Source: Data processed, 2024

Table 4.4 indicates that the correlation values of all independent variables are below 0.80, suggesting that the data in this study do not exhibit the symptoms of multicollinearity.

b. Heteroscedasticity Test

Table 4. 5 heteroscedasticity Test Result

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.566105	1.634237	0.346403	0.7298
PR	0.060409	0.035204	1.715988	0.0893
GRDP	-0.001455	0.001537	-0.946311	0.3463
INF	-0.031186	0.080802	-0.385952	0.7004

Source: Data processed, 2024

Table 4.5 indicates that the results of the heteroscedasticity test yielded a probability value for all variables in this study exceeding 0.05. This suggests that the regression model in this study does not exhibit heteroscedasticity or homoscedasticity.

1. Panel Data Regression Equation Model

Table 4. 6 Panel Data Regression Equation Model Result

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	104.0662	2.730220	38.11641	0.0000
PR	-0.088442	0.059048	-1.497790	0.1374
GRDP	-0.005325	0.002287	-2.328165	0.0220
INF	-0.459887	0.107515	-4.277414	0.0000

R-squared	0.221999	Mean dependent var	34.42381
Adjusted R-squared	0.198183	S.D. dependent var	2.381114
S.E. of regression	2.132151	Sum squared resid	445.5146
F-statistic	9.321296	Durbin-Watson stat	1.999630
Prob(F-statistic)	0.000018		
	Unweighted Statistics		
R-squared	0.046063	Mean dependent var	98.22784
Sum squared resid	1525.365	Durbin-Watson stat	0.584033

Source: Data processed, 2024

The results of the panel data regression model in Table 4.6 are as follows:

$$ERFCF_{it} = a + b_1PR_{it} - b_2GDRP_{it} - b_3INF_{it} \quad (6)$$

$$ERFCF_{it} = 104.0662 - 0.088442PR_{it} - 0.005325GDRP_{it} - 0.459887INF_{it} \quad (7)$$

The preceding equation can be elucidated as follows:

a. The regression coefficient of the food crop farmer exchange rate is 104.0662.

The value of rice productivity, gross regional domestic product of the food crop subsector, and inflation is 0 (zero), which indicates that the variable exchange rate of food crop farmers has a value of 104.0662.

b. Rice productivity regression coefficient of -0.088442

The value of productivity has a positive and insignificant current. An increase of one percent in the value of productivity would result in the following changes: This will result in a decrease in the exchange rate of food crop farmers by 0.088442 percent.

c. Regression coefficient of gross regional domestic product of food crop subsector -0.005325

The GRDP value of the food crop subsector has a positive and insignificant effect. An increase of one percent in the value of the GRDP of the food crop subsector will result in a reduction in the exchange rate of food crop farmers by 0.005325 percent. Consequently, the exchange rate of food crop farmers will be reduced by 0.005325 percent.

d. The inflation regression coefficient is -0.459887.

The value of inflation has a negative and significant effect. An increase of one percent in the inflation value would result in the following consequences. Consequently, the exchange rate of food crop farmers will be reduced by 0.459887 percent.

The results of the provincial individual effects equation model are presented in the following table.

1. Hypothesis Test

a. T-statistic Test

Table 4. 8 T-statistic Test Result

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	104.0662	2.730220	38.11641	0.0000
PR	-0.088442	0.059048	-1.497790	0.1374
GRDP	-0.005325	0.002287	-2.328165	0.0220
INF	-0.459887	0.107515	-4.277414	0.0000

Source: Data processed, 2024

1) H_1 : There is a positive and significant influence between rice productivity on the exchange rate of food crop farmers in Indonesia:

a. The value of tcount = -1.497790 indicates that an increase in rice productivity is associated with a decrease in the exchange rate for food crop farmers in Indonesia.

b. The ttable value with a significance level of 0.05 and a degree of freedom (df) = (n-k) or (102-4) = 98, then the ttable value is obtained as 1.98446745

c. The value of tcount < ttable (-1.497790 < 1.98446745) means that H0 is accepted and H1 is rejected..

d. The probability value of rice productivity obtained is 0.1374 > 0.05, meaning that H0 is accepted and H1 is rejected.

e. Rice productivity has a negative and insignificant effect on the exchange rate of food crop farmers in Indonesia.

2) H_2 : there is a positive and significant influence between the gross regional domestic product of the food crop subsector on

the exchange rate of crop farmers in Indonesia.

a. The value of tcount = -2.328165 shows that the greater the gross regional domestic product, the lower the exchange rate of food crop farmers in Indonesia.
b. The ttable value with a significance level of 0.05 and a degree of freedom (df) = (n-k) or (102-4) = 98, the tatbel value obtained is 1.98446745.
c. The value of tcount < ttable (-2.328165<1.98446745) means that H0 is accepted and H2 is rejected.
d. The probability value of the gross regional domestic product of the hand crop subsector obtained 0.0220 <0.05 means that H0 is rejected and H2 is accepted.
e. Gross regional domestic product of food crop subsector has a negative and significant effect on the exchange rate of food crop farmers in Indonesia.

3) H_3 : there is a negative and significant influence between inflation and the exchange rate of food crop farmers in Indonesia.

a. The value of thitung = -4.277414 shows that the greater the inflation value, the lower the exchange rate of food crop farmers in Indonesia.
b. The ttable value with a significant level of 0.05 and free degree (df) = (n-k) or (102-4) = 98, the ttable value is 1.98446745.
c. The value of titung<ttabel (-4.277414<1.98446745) means that H0 is accepted and H3 is rejected.
d. The probability value of inflation obtained by 0.0000 <0.05 means that H0 is rejected and H3 is accepted.
e. Inflation has a negative and significant effect on the exchange rate of food crop farmers in Indonesia.

b. F-Statistic Test

Table 4. 9 F-Statistic Test Result

R-squared	0.221999	Mean dependent var	34.42381
Adjusted R-squared	0.198183	S.D. dependent var	2.381114
S.E. of regression	2.132151	Sum squared resid	445.5146
F-statistic	9.321296	Durbin-Watson stat	1.999630
Prob(F-statistic)	0.000018		

Source: Data processed, 2024

Table 4.10 above can contain an interpretation of the model taken in the research method as follows:

a. The value of Fcount = 9.321296, indicating that the greater the value of rice productivity, GDP of food crop subsector, and inflation will increase the value of the exchange rate of food crop farmers in Indonesia.
b. Ftable value with a significance level of 0.05 and a degree of numerator (k-1) or (4-1)=3 and denominator (n-k) or (102-4)=98. Then the Ftable value obtained is 2.69742322
c. The value of Fhitung>Ftabel (9.321296>2.69742322) means that H0 is rejected and Ha is accepted.
d. The probability value of rice productivity, GRDP of food crop subsector and inflation obtained 0.000018<0.05 means that H0 is rejected and H4 is accepted.
e. Rice productivity, GDP of food crop subsector, and inflation have a positive and significant effect on the exchange rate of food crop farmers in Indonesia.

c. Determinant Coefficient Test (R^2)

Table 4. 10 Determinant Coefficient Test Result

R-squared	0.221999	Mean dependent var	34.42381
Adjusted R-squared	0.198183	S.D. dependent var	2.381114

Source: Data processed, 2024

Table 4.10 illustrates that the coefficient of determination, as indicated by the adjusted R-squared value, attained a value of 0.198183, representing a 19.81% level of determination. This figure illustrates the extent to which rice productivity, the food crop subsector GRDP, and inflation influence the exchange rate of food crop farmers collectively. The remaining 80.19% of the total is influenced by other variables that are not included in this study.

2. Discussion

a. The Effect of Rice Productivity on Farmer Exchange Rate of Food Crops in Indonesia

The productivity of rice has a negative and insignificant effect on the exchange rate of food crop farmers in Indonesia from 2020 to 2022. These findings align with the results of panel data regression, which revealed a t-value of -1.497790, below the critical t-value of 1.98446745. This indicates that the null hypothesis (H0) is accepted, while the alternative hypothesis (H1) is rejected. Additionally, the probability value of rice productivity, equal to 0.1374, is greater than 0.05, suggesting that the null hypothesis is accepted and the alternative hypothesis is rejected. This is accompanied by a coefficient of -0.459887 percent.

The findings of this study indicate that rice productivity has a negative and insignificant effect on the exchange rate of food crop farmers in Indonesia. A one percent increase in rice productivity is associated with a reduction in the exchange rate of food crop farmers in Indonesia by -0.459887 percent. The results indicate that rice productivity has no significant effect on the exchange rate of food crop farmers.

b. The Effect of GRDP of Food Crop Subsector on the Exchange Rate of Food Crop Farmers in Indonesia

A negative and significant effect on the exchange rate of food crop farmers in Indonesia was observed from 2020 to 2022, as a result of the GDP of the food crop subsector. This result is in accordance with the data processing of panel data regression, which yielded a value of tcount < ttable (-2.328165 < 1.98446745). This indicates that H0 is accepted and H2 is rejected, with a probability value of the gross regional domestic product of the hand crop subsector obtained at 0.0220 < 0.05. This further indicates that H0 is rejected and H2 is accepted, with a coefficient of -0.005325 percent.

The findings of this study indicate that the GDP of the food crop subsector has a negative and statistically significant effect on the exchange rate of food crop farmers. This demonstrates that an increase in the GDP of the food crop subsector is associated with a decline in the exchange rate of food crop farmers, while a decrease in the GDP of the food crop subsector is linked to an increase in the exchange rate of food crop farmers. For instance, an increase of 1% in the GDP of the food crop subsector is estimated to result in a reduction of 0.014957% in the exchange rate of food crop farmers in Indonesia.

c. The Effect Of Inflation On The Exchange Rate Of Food Crop Farmers In Indonesia

The inflationary environment between 2020 and 2022 had a discernible and adverse impact on the exchange rate of food crop farmers in Indonesia. This result is in accordance with the data processing of panel data regression, which yielded a value of t- count < t-table (-4.277414 < 1.98446745). This indicates that the null hypothesis (H0) is accepted and the alternative hypothesis (H3) is rejected. Furthermore, the probability value of inflation, obtained at 0.0000 < 0.05, indicates that the null hypothesis (H0) is rejected and the alternative hypothesis (H3) is accepted, with a coefficient of -0.459887 percent.

The findings of this study indicate that inflation has a negative and statistically significant impact on the exchange rate of food crop farmers. This demonstrates that when inflation increases, the exchange rate of food crop farmers declines, and conversely, when inflation decreases, the exchange rate of food crop farmers rises. For instance, an increase of 1% in inflation will reduce the exchange rate of food crop farmers in Indonesia by -0.619652%.

V. CONCLUSIONS

The results of the discussion and analysis of research on the effect of rice productivity, the GRDP of the food crop subsector, and inflation on the exchange rate of food crop farmers in Indonesia indicate the following conclusions:

1. The impact of rice productivity on the exchange rate of food crop farmers in Indonesia is found to be both negative and insignificant. This implies that rice productivity does not exert a significant influence on the exchange rate of food crop farmers in Indonesia.
2. The GDP of the food crop subsector has a negative and significant effect on the exchange rate of food crop farmers in Indonesia. This implies that high economic growth does not guarantee high welfare. In fact, this situation can worsen the income of farmers and reduce their purchasing power, thereby reducing the welfare of farmers.
3. The inflation rate has a negative and significant impact on the exchange rate of food crop farmers in Indonesia. Inflation leads to an increase in the price of goods and services consumed by the community, which has a detrimental effect on the ability of farmer households to meet their daily needs. Consequently, the diverse needs of farmers, coupled with inflation, led to a rise in the cost of living index, with the index that farmers must pay also increasing.

VI. ACKNOWLEDGMENT

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