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Inflation, Rice Prices, Production and Farmers Terms of Trade within AD–AS Framework

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ABSTRACT

Study analyzed influence of inflation, national rice prices, and rice production on the exchange rate of farmers in Indonesia through the Aggregate Demand-Aggregate Supply (AD-AS) model. Exchange rate of farmers is one of the indicators of farmers' welfare. Use research data is monthly data 2020 - 2024 total of 60 observations. Analysis was regressed with Newey-West autocorrelation consistent standard error to overcome autocorrelation and all disstationary variables through the Dickey-Fuller Augmentation test to increase validity through the Ordinary Least Square formula. Using statistical tests of Stata software data processors in the analysis of time series data on inflation variables, rice prices, rice production and farmers' exchange rates on a national scale. Results of study show that inflation has a negative and insignificant effect on the NTP, rice prices have a positive and significant influence. On the other hand, rice production has a negative and insignificant influence this period on NTP because there is a possibility of an imbalance between supply of rice prices and market demand. Findings support understanding of AD-AS approach where inflation, rice prices play a role as a factor in market demand, rice production as a market supply. Studies contribute empirically to the context of agricultural economics.

Keywords: Farmer's Exchange Rate, Inflation, Rice Prices, Rice Production

Introduction

Indonesia is an agrarian country, has abundant agricultural land as a source of income for farmers, and the contributor of income through production is the agricultural sector which plays a vital role in the Indonesian economy. The Farmer Exchange Rate (NTP) is one of the indicators in measuring the level of welfare of Indonesian farmers. The measurement of NTP is based on the price index received by farmers (IT) against the price index that must be paid by farmers (IB)

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(Daulika et al, 2025). Fluctuations in farmers' exchange rates are influenced by the high increase in the price of agricultural products with inputs paid by farmers. Some areas have experienced a decline or stagnation in farmers' exchange rates as a result of price fluctuations and production costs that farmers must pay. The increase in farmers' production on rice does not guarantee an increase in the volume of farmers' exchange rates because the prices that farmers have to pay for the need for consumption and production inputs are increasing.

The COVID-19 pandemic phenomenon has played a role in pressuring the agricultural sector, especially rice farmers in Indonesia. The impact of the COVID-19 pandemic on the decline in the volume of farmers' exchange rates caused by price increases, distribution that cannot be widely reached. BPS data for 2020-2024 shows that the farmers' exchange rate has decreased until 2024 by 101.28 compared to 2020 which was higher with a value of 106.77. Explained by (Rusmini et al, 2023) Disruptions to the law of supply and demand have an impact on periodic declines in demand as well as recessions that occur shocks the real economic base. That way, supply chain disruptions can occur as a result of the crisis.

Research on factors that can affect farmers' exchange rates has been studied (Syifa Aulia et al, 2010) shows that the use of long-term rice price variables has a negative and significant influence on the Farmer Exchange Rate (NTP). A similar study explaining a 1% increase in inflation can increase the Farmer Exchange Rate (NTP). However, inflation has no significant effect on farmers' exchange rates (Saridewi, 2021). On the other hand, the study carried out by (Tenriawaru et al, 2021) Explaining that an increase in production volume can increase the income received by farmers. This can provide a surplus and increase in the exchange rate of Indonesian farmers.

Explaining that an increase in production volume can increase the income received by farmers. This can provide a surplus and increase in the exchange rate of Indonesian farmers. Does inflation have a significant effect on the Farmer's Exchange Rate, How does the price of rice affect the Farmer's Exchange Rate, Does rice production affect the Farmers' Exchange Rate statistically

Literature Review

Farmer's Exchange Rate (NTP)

The farmers' exchange rate is a measure of farmers' purchasing power and welfare. The measurement can be calculated in the price index of agricultural products received by farmers with the price that farmers must pay (Mulyawan, 2022). If the NTP > 100 farmers will be considered to have a surplus or purchasing power, on the other hand, the NTP < 100 explains that there is a decrease in the purchasing power of farmers. NTP can be calculated by the formula:

$$Nilai\ Tukar\ Petani = \frac{Indeks\ harga\ yang\ diterima}{Indeks\ harga\ yang\ dibayar}\ X\ 100\%$$

This concept can explain the change in farmers' welfare is largely determined by the comparison of the output price received with the input price that must be paid. Thus any macro variable can change relatively.

The Effect of Inflation on Farmers' Exchange Rates

Inflation is a condition of rising prices and has an impact on people's purchasing power. The existence of inflation can reflect an imbalance between supply and demand in the national economy (Hafidz Meiditambua Saefulloh et al, 2023). Some theories explain that inflation has no effect on farmers' exchange rates. This is reinforced by the results of the study (Jumilah et al, 2021) stating that there is no inflation that affects the exchange rate of farmers due to the diversity of farmers' needs accompanied by the inflation rate, making the cost of living index that must be paid increasing. Stable conditions in inflation do not provide an increase in the price of necessities that farmers have to buy and there is no increase in revenue due to an increase in production prices. In the results of the study (Aulia & Syafa'at, 2025) explained that the increase in inflation causes a decline in farmers' welfare through a decrease in the NTP. This is because the index that must be paid by farmers has increased compared to before. Increased inflation can increase the cost of living that farmers have to pay and can ultimately reduce the level of welfare of farmers. Aligned with research (Marsudi et al, 2020) explained that the increase in inflation will have an impact on the high Ib and It, where the increase in the price of agricultural staples will increase and be accompanied by increased income. However, the increase in the price of non-agricultural goods can have implications for an increase in the amount of farmers' spending.

Overall, the literature gives an idea that inflation has the potential to reduce farmers' welfare through increasing the price of goods, living costs, and production costs. However, the large or small scale of influence depends on the dominance on the increase in the output or input side. Based on theory and empirical evidence, this study re-examines whether inflation has a significant effect on the exchange rate of farmers in Indonesia for the 2020-2024 period.

Rice Prices and the Impact on Farmers' Exchange Rates

Rice is one of the food crops that has a major role in Indonesian farmers. In the results of the study (Silvia et al, 2024) The increase in rice prices does not have a positive impact on farmers if there is a shortage of land, an increase in fertilizer prices and a decrease in production yields. The increase in rice prices does not affect the level of farmers' consumption decreases. Because there are other alternatives in the consumption of staple foods. Fluctuations in rice prices can be controlled by rice import activities in reducing prices for farmers and have implications for income uncertainty. So that the exchange rate of farmers cannot always increase in the condition of increasing rice prices in the global market.

Research (Yulianti et al, 2023) shows that the high price of rice in the market can provide an increase in the volume of income. The price of rice at a fairly high position of farmers will increase the amount of rice production and sales will increase which affects the income level of farmers. In general, the two research results can provide an overview of the impact of the increase in rice prices on farmers' exchange rates which are greatly influenced by other factors in increasing income such as land, sales yields, and alternative food crops. Theoretically, an increase in rice

prices can increase the price index received. However, these changes can depend on how the price changes compared to the changes in the costs that farmers have to pay.

Rice Production Volume

The rice production rate is the total amount of rice that has been harvested in a period. The increase in production volume is expected to provide a surplus of farmers' income in encouraging welfare(Rahim et al., 2024) explained that the positive effect on increasing rice production can be supported by the area of harvested land. Land area can provide great possibilities in producing high rice production levels and supporting the productivity of alternative food crops. Because the phenomenon of land conversion can hinder the productivity of farmers.

In line with the results of the research (Triwidia et al, 2024)explained that the increase in production has a negative and significant effect which can reduce the selling price. This is in line with the law of supply and demand. The increase in the supply of production products exceeds the market demand of producers tends to decrease the selling price of crops in order to increase sales. It can be concluded in both studies that rice production can be influenced by the availability of land area, but this must have a good control system and a high level of rice production that is not balanced with market demand will provide low income results for farmers. This study fills the gap to examine the relationship between production levels and NTP empirically in determining the improvement of the welfare of Indonesian farmers.

Research Hypothesis

Based on the theoretical foundation and previous empirical review, the hypothesis of this study is formulated as follows:

H1 : Inflation affects farmers' exchange rates

H2 : Rice prices have a positive effect on farmers' exchange rates

H3 : Rice production affects the exchange rate of farmers in Indonesia

Research Methods

This study uses a quantitative approach. This approach was chosen to obtain valid results regarding the influence of national inflation, national rice prices, and national rice production on farmers' exchange rates. The data used in the analysis is sourced from scientific journal articles as well as official secondary data from national institutions. The analysis was carried out on free and bound variables using a multiple linear regression data analysis model through the OLS (Ordinary Least Square) formula using statistical tests of *Stata* software data processing in solving time series data in inflation variables, rice prices, rice production, and farmers' exchange rates on a national scale in 2020-2024 and using 60 total monthly observation data. In the test results, there was heteroscedasticity and there was a positive autocorrelation in the residual. Thus, the estimation was carried out using regression with Newey-West autocorrelation consistent standard error.

All variables were tested stationary using the Augmented Dickey-Fuller (ADF) root unit test to avoid lancing regression in the time series data. The results of the ADF test show that there are all non-stationary variables because the p-value is greater compared to 0.05. However, it is silent with the first difference of the p-value being less than 0.05. Subsequently, a normality test was carried out using Shapiro-Wilk by producing a Prob>z of 0.00001 which was smaller than 0.05. So that H0 is rejected and the residual is declared to be undistributable normally. This condition is recognized as a limitation of the study, but with the Newey-West regression coefficient is considered consistent and the t-test and F-test are still used as an inferential approach. This approach maintains the coefficient, but by applying standard error correction where the estimates on the t-test and F-test become reliable under the condition that there is an automatic correlation at a given interval:

$$Y = \alpha + \beta 1\ X1 + \ \beta 2\ X2 + \beta 3\ X3 + \ \mu$$

Y= Farmer's Exchange Rate
X1= Inflation
X2= Rice Price
X3= Rice Production

Normality Test

According to studies (Haniah, 2013) Normality test statistical method in order to find out whether the research carried out comes from a population with a normal distribution. Normal distribution is the data pattern that forms on the bell curve. The main objective is to ensure that the pattern of data dissemination is distributed normally and representative of the population. So that the results of the research carried out can produce valid outputs. And the results of the study can be balanced and not tilted to the right or left. That way, further testing can be carried out on the research data.

Multicollinearity Test

The multicollinearity test was first introduced by Ragner Frisch, who explained that there is a high linear relationship in the regression model in each independent variable. The Multicollinearity test is an examination of regression analysis with the aim of finding out whether there is a strong correlation between independent variables (Azizah et al., 2021) High multicollinearity can have an impact on regression results which can be biased and can interfere with the interpretation of individual variables. In the Variance Inflation Factor (VIF), if the VIF value is > 10, it can indicate strong multicollinearity.

Heteroscedasticity Test

The heteroscedasticity test is a test in regression analysis to ensure that the residual value (error) between one data and another data has the same variant or. If the residual variant is different (not constant), the regression model is said to have a heteroscedasticity problem. As a result, the results of the analysis become less efficient, and the interpretation of statistics can be wrong. The Heteroscedasticity test aims to find out whether the regression model has a constant variant of residual or error. The impact on the existence of heteroscedasticity is that the estimates obtained are inefficient. There are two ways to detect through the graph method or statistical test (Andriani, 2017).

Autocorrelation Test

Autocorrelation is a form of assumption violation in OLS regression, where the residual of one observation correlates with another. To detect autocorrelation, there is a method that can be used, namely the Run test which gives the result that there is or is no autocorrelation. If there are variables that are autocorrelated, then the model parameter estimation is no longer BLUE (Best Linear Unbiased Estimator). So that the regression results cannot be relied on for evaluation. This causes interpretation and decision-making based on the OLS model to be wrong (Aprianto et al., 2020)

Results and Discussion

Based on the results of multiple linear regression, analyzing the independent variables X1, X2, X3 as independent variables against the Y variable as dependent variables was obtained in Table 1.

$$Y = 3379.918 + 0{,}9507031X1 + 0{,}0023001X2 - 185{,}5656\ X3 + e$$

Tabel 1. Regresi

Nilai tukar petani	Coefficient	Newey–West Std. err.	t	P>|t|	[95% conf. interval]	
Inflasi	-0.1106509	0.4565235	-0.24	0.809	-1.0255440	0.8042428
Harga beras	0.0025112	00.0008954	2.80	0.007	0.0007168	0.0043057
Produksi padi	-114.842	144.4683	-0.79	0.430	-404.3628	174.6789
cons	-0.0329778	.2014194	-0.16	0.871	-0.4366314	0.3706757

In the implementation of the Augmented Dickey-Fuller (ADF) stationarity test, it was shown that all research variables at the level level had a p-value greater than 0.05 so that they could be categorized as non-stationary. Therefore, a transformation is carried out into the first form of difference. until the value on the stationary of each variable becomes less than 0.05 which can be interpreted that the entire variable has been stationary at the first degree of integration. The overall results of the F test show that the regression model that links inflation, rice prices and rice production is significant on a scale of 5%, which can be proven by the results of the F test worth 0.0042. This can be interpreted that the variables of inflation, rice prices and rice production can explain the variables of farmers' exchange rates simultaneously and are suitable for further analysis.

The result of the determination coefficient value (R-squared) of 0.2119 which can be interpreted that the change in the farmers' exchange rate can be explained by 21% with variations in inflation, rice prices and rice production and the rest can be influenced by other factors outside the model that were not observed in this study. Based on the results of the Newey-West test, it shows that the price of rice has a positive and significant effect on the exchange rate of farmers, which can be proven by a value of 0.007 which is much smaller than 0.05. The rice price coefficient is 0.0025 with a t-test value of 2.80 which can indicate that any increase in rice prices in one unit can increase the value of farmers' roots. On the other hand, the test results on the inflation variable showed that there was a negative and insignificant influence with a value of 0.809 with a test value of t -0.24 and a coefficient value of -0.1106509 which can be interpreted as a change that occurred in the inflation variable that had a negative and insignificant effect on the exchange rate of farmers. The insignificance of inflation variables can be attributed to inflation that is not directly reflected in commodities.

In line with the test results on the rice production variable with a coefficient value of -0.0329778, a t-test value of -0.79 and a p-value of 0.430 which is lighter than 0.05. This illustrates that the variable of rice production has an insignificant and negative influence on the exchange rate of farmers. In this period, it shows that there is no influence of rice production in the short term and it is possible to have implications in the long term through the influence of other variables that are not included in the model.

Normality Test

Tabel 2. Shapiro – Wilk

Variable	Obs	W	V	z	Prob>z
resid	59	0.86169	7.418	4.315	0.00001

Based on the results of the Shapiro - Wilk normality test with a value of W = 0.86169 at a prob>z probability value of 0.00001. With a probability value less than 0.05. So that H0 is rejected

and the residual is declared not to be distributed normally. This condition is a limitation of the study, but with a moderate number of 60 monthly observations and the use of OLS with Newey-West Autocorrelation is consistent and the t-test and F-test can be used and need to be interpreted carefully.

Multicollinearity Test

Tabel 3. VIF

Variable	VIF	1/VIF
Produksi beras	1.09	0.917487
Inflasi	1.08	0.925321
Harga beras	1.01	0.991194
Mean VIF	1.06	

In the results of the multicollinearity test of the Variance Inflation Factor (VIF) on the variables of rice production, rice prices, and inlashes, each have a value of no more than 10. With an average VIF value of 1.06. This condition is well below the general critical limit, so there is no indication of the multiconinity between independent variables in the model. Thus, the follow-up test process can be passed.

Tabel 4. Heteroskedastisitas

chi2(1)	6.85
Prob > chi2	0.0089

H0: Constant variance

The heteroscedasticity test assuming constant variance (H0: Constant variance) showed the result of chi2(1) = 6.85 with a p-value of 0.0089. This result rejects the null hypothesis at a significance level of 5% (due to p-value < 0.05), so there is strong evidence of heteroscedasticity in the residual model. This means that the variance of error is not constant across the level of independent variables, which can affect the validity of statistical inferences such as t-tests and F-tests.

The farmer exchange rate is one of the indicators of farmers' welfare through the calculation of their inputs and outputs. Some of the factors that can affect farmers' exchange rates are inflation, rice prices and rice production. Based on the results, it can be explained that the increase in rice prices has a positive and significant influence on the exchange rate of farmers.

When the demand for rice strengthens, the price of rice will rise and may reflect inflation. However, rice production and inflation have negative and insignificant effects. Where increasing rice production can reduce the exchange rate obtained by farmers and the high input price that must be paid will reduce farmers' income. This can be caused by an imbalance if the increase in rice production is not equal to the volume of rice demand in the market. This results in a decrease in the price of grain or rice and can have implications for farmers' exchange rates as an indicator of farmers' welfare.

The test results may indicate that the inflation rate can be considered as an increase in the aggregate allowability (AD) in the macroeconomy when there is a phenomenon of rising inflation. This could be in line with increasing demand pressures for goods and services. This has implications for the volume of farmers' income and farmers' exchange rates. Through the regression results, inflation has a negative and insignificant effect on the Farmer Exchange Rate (NTP). In accordance with the theory of aggregate demand (AD) where the increase in demand can drive the volume of output produced and the increase in costs that must be paid. Explained in the study (Hanbal et al, 2024) Aggregate demand is the total of goods and services that are in demand by the economy at various price levels, on the aggregate side of supply is the total goods and services offered by producers at various price levels.

The price of rice has a direct relationship with the supplier side and the market demand of the rice commodity, the phenomenon of increasing rice prices reflects an increase in demand or a decrease in supply. From the perspective of farmers, the high price of rice can have implications for increasing their income which can be reflected in the Farmer Exchange Rate (NTP). Significant and positive rice prices can play a role in supporting the mechanism of balancing aggregate demand and aggregate supply. Supported by the results of the study (Wulandari et al, 2025) The increase in rice prices can have an impact on farmers' welfare, improve infrastructure on the amount of production and support for agricultural activities. It is hoped that the high demand for rice in the market can have an impact on increasing the income level of farmers, who will later carry out consumption activities or purchase inputs as the main thing in the implementation of rice production with a much higher output.

Rice production is a form of Aggregate Supply (AS) in the agricultural sector. The increase in production is an additional supply to the rice commodity market which plays a role in stabilizing prices and improving the welfare of Indonesian farmers. The results of the regression above show that rice production is negative and insignificant to the exchange rate of farmers in that period. It is possible that during this period the increase in the amount of rice production is insufficient or disproportionate to market demand. So that the effectiveness on the welfare of farmers cannot be seen in real terms. On the other hand, the results of the research (Beddu et al., 2025) explained that increased production can have an impact on increasing the volume of farmers' income and encourage an increase in the volume of consumption, living standards and investment in the agricultural sector.

Effect of Inflation on Farmers' Exchange Rates

Based on the estimated results, it shows that the inflation coefficient is -0.1106509 with a p value of 0.809, so that this value has a negative effect on the farmers' exchange rate and is not statistically significant on a scale of 5%. This condition can cause the first problem, namely inflation, showing that inflation has an insignificant influence on the exchange rate of Indonesian farmers for the 2020-2024 period. Theoretically, inflation has the potential to reduce farmers' welfare through an increase in the price of consumer goods and the price of production input goods. With an increase in the price of goods in consumption or the price of production inputs, it can reduce the total amount of income in farmers' welfare.

The results of the study show that inflation has a negative and insignificant effect on farmers' exchange rates. So that inflation that can reflect aggregate demand is not strong enough to change the position of farmers' exchange rates in the short term. This phenomenon can indicate that there is an increase in inflation and that there is an adjustment in the supply of agricultural sketches that can be able to withstand the increase in output prices (It). So that through this it can provide stability in the ratio of the index received with the index that must be paid. explained in the results of the study (Setiawan et al, 2024)that there is a significant inflation in the short term, however, it will be different in the application in the long term and this shows inconsistency in inflation in affecting the welfare of farmers. In the framework of aggregate demand and aggregate supply, inflation can reflect the demand side, but realistic supply-side adjustments have an impact on the increase in output prices and make the NTP small.

The results of the results on the inflation coefficient show that there is a negative and insignificant influence, illustrating that general price pressures in the 2020-2024 period are not strong enough to have an influence on changing the volume of farmers' purchasing power in the short term. This phenomenon in the framework of Aggregate Supply and Aggregate Supply (AD-AS) inflation faced by farmers shows that many of them run on the cost push inflation mechanism, namely the many increases in production inputs and living costs that farmers must pay. On the other hand, the price of output received by farmers is relatively fixed. In this condition, it can be emphasized that the need for the role of government policies in stabilizing output prices and interventions in the form of input subsidies, energy price protection for farmers and supply chain efficiency in reducing the cost pressures that must be paid on production inputs or farmers' living costs. In emphasizing the research (Scherfranz et al., 2025) explained that the petitioners have the assumption that the cost of governance and practical work on a high scale is due to unreasonable control, more profitable suppliers and lower output price payments than non-agricultural managers.

Rice Prices and the Impact on Farmers' Exchange Rates

The regression results showed that the rice price variable with a coefficient of 0.0025112 and a p-value of 0.007. So that the influence on the exchange rate of farmers can be interpreted positively and significantly at the level of 5 percent. illustrating that every one unit increase in the price of rice can provide an increase in the rupiah exchange rate of 0.25. The speed of increasing rice prices with a balance in production volume and stability in production input prices can balance the It and Ib ratios which reflect on the welfare of farmers.

From the point of view of AD-US rice prices will meet at the middle point between demand and supply. This positive significant increase in rice prices can be indicated as a strengthening of demand for rice and a tightening on the supply side. so that there is a shift in the AD curve on the right side which has an impact on the price increase. Based on the theory that the cause of the increase in output prices can be due to the high demand for the rice commodity, as long as it is not in line with the surge in input prices, it can provide high income yields and improve the welfare of farmers. confirmed in the results of the discussion by (Murdy, 2017) that the price of rice producers can be a form of contribution in increasing the income and welfare of food crop farmers.

The results of the estimation show that the rice price coefficient has a positive and significant influence on the exchange rate of farmers, indicating that there is an increase in income through rice prices as the main channel for improving the condition of farmers' exchange rates. The AD-US field angle explained that the strengthening of rice prices reflects demand pull inflation in the agricultural sector by increasing the price received. Based on certain conditions such as consumer price transmission to farmers are not disturbed by market structure and import policies. This can have implications for HPP, Bulog's absorption volume and the regulation of restrictions on imported goods on rice commodities need to be emphasized in regulating rice price inflation with market needs of producers. According to the results of the study (Fitrawaty et al, 2023) related to the increase in rice prices influenced by rice production, government intervention is needed in tightening rice production limits at minimum and maximum thresholds in order to control production on rice prices. This is to prevent excessive rice price increases that burden low-income people and protect farmers' income at low rice prices.

Rice production affects the Farmers' Exchange Rate statistically

The regression results showed that the rice production variable had a coefficient of -114.842 with a t-test result of -0.79 and a p-value of 0.430, so it had a negative and insignificant influence on NTP at the level of 5 percent. Economically, the negative coefficient can explain that excess supply with a high production volume can reduce the price of grain to farmers. So that the accepted index can weaken with the income received being lower than the index that must be paid. However, the results show that rice production during the 2020-2024 period is not significant

where it can still be absorbed in other regions by distribution and export, so that the price decline can be reduced.

In the AD-US model, rice production presents on the side of aggregate supply on the rice market commodity. Negative and insignificant coefficients indicate that there is a supply shock with a shift in the US curve to the right as rice production increases tends to decrease the value of the output. Thus, the policy of increasing rice production does not guarantee the welfare of farmers without good demand management for commodities and trade systems. Explained in the study (Zega & Hakim, 2024)that there is still no evidence that can show that the high volume of rice production can provide welfare to farmers, especially the food self-sufficiency program.

Rice production has a negative and insignificant influence on farmers' exchange rates, emphasizing that the increase in harvest volume for the 2020-2024 period cannot directly interpret farmers' purchasing power. This can be observed in the AD-US framework, the increase in rice supply reflects a shift in the US curve to the right with the balance of demand and adequate absorption has a tendency to suppress the price of grain or rice on the producer scale and weaken the farmer income index. This is in line with the research (Triwidia et al, 2024) which explains that increasing production can reduce income on the farmer's side. This research criticizes the policy approach that only focuses on crop yields, but it needs to be emphasized on inter-regional distribution programs, down streaming, and production scale management so that the increase does not reduce the exchange rate of farmers.

Conclusions and Suggestions

The study concluded that inflation has a negative and insignificant influence on farmers' exchange rates in the 2020-2024 period. so that monthly inflation changes do not provide statistical evidence of a decrease or increase in NTP in the short term. This shows the price and cost of living pressures of farmers during the pandemic and recovery. On the other hand, rice prices have a positive and significant influence on the NTP, which can be interpreted that the increase in national rice prices can be attributed to improving the welfare of farmers through the NTP. Meanwhile, rice production has a negative and statistically insignificant effect on NTP. Thus, an increase in the volume of rice production can have an impact on decreasing output prices. This can be caused by an imbalance between the volume of demand for the rice commodity and the production capacity of rice by producers. This study has limitations, first in the normality test which shows that the residual distribution is abnormal so it needs to be interpreted carefully even though Newey-West has been used. Second, the value at the R-square is 21 percent which indicates that there are many factors outside the model that can affect NTP.

Bibliography

Andriani. S. (2017). Uji Park dan uji Breusch–Pagan–Godfrey dalam pendeteksian heteroskedastisitas pada analisis regresi. *Al-Jabar: Jurnal Pendidikan Matematika*, 8(1), 63–72. https://doi.org/10.24042/ajpm.v8i1.1014

Aprianto, A., Debataraja, N. N., & Imro'ah, N. (2020). Metode Cochrane–Orcutt untuk mengatasi autokorelasi pada estimasi parameter ordinary least squares. *Bimaster: Buletin Ilmiah Matematika, Statistika dan Terapannya*, 9(1). https://doi.org/10.26418/bbimst.v9i1.38590

Syafa'at, I. A. S. (2025). Pengaruh inflasi dan PDRB terhadap nilai tukar petani (NTP) di Provinsi Jawa Barat. *Agricore: Jurnal Agribisnis dan Sosial Ekonomi Pertanian Unpad*, 10(1). https://doi.org/10.24198/agricore.v10i2

Azizah, I. N., Arum, P. R., & Wasono, R. (2024). Model terbaik uji multikolinearitas untuk analisis faktor-faktor yang mempengaruhi produksi padi di Kabupaten Blora tahun 2020. *Prosiding Seminar Nasional Unimus, 7*.

Badan Pusat Statistik. (2025a). Nilai Tukar Petani. https://www.bps.go.id/id/statistics-table/2/MTc0MSMy/nilai-tukar-petani--maret-2024.html

Badan Pusat Statistik. (2025b, November). Luas Panen, Produksi, dan Produktivitas Padi Menurut Provinsi, 2024. https://www.bps.go.id/id/statistics-table/2/MTQ5OCMy/luas-panen--produksi--dan-produktivitas-padi-menurut-provinsi.html

Badan Pusat Statistik. (2025c, November). Rata-rata Harga Beras di Tingkat Perdagangan Besar (Grosir) Indonesia. https://www.bps.go.id/id/statistics-table/2/Mjk1IzI=/rata-rata-harga-beras-di-tingkat-perdagangan-besar--grosir--indonesia.html

Bank Indonesia. (2025, November). Tingkat Inflasi Indonesia 2023-2024. https://www.bps.go.id/id/statistics-table/2/Mjk1IzI=/rata-rata-harga-beras-di-tingkat-perdagangan-besar--grosir--indonesia.html

Beddu, M., Modding, B., & B, H. (2025). Peningkatan Produksi Beras terhadap perbaikan ekonomi masyarakat melalui Kerjasama Industri di kabupaten Pinrang. *Amsir Community Service Journal,* 3(1), 70–74. https://doi.org/10.62861/acsj.v3i1.452

Daulika, P., Fahrunsyah, F., Syakhril, S., Saleh, M., & Karno, K. (2025). Analisis Nilai Tukar Petani Tanaman Pangan di Kabupaten Kutai Kartanegara, Kalimantan Timur. *RIGGS: Journal of Artificial Intelligence and Digital Business,* 4(2), 2355–2359. https://doi.org/10.31004/riggs.v4i2.860

Fitrawaty, Hermawan, W., Yusuf, M., & Maipita, I. (2023). A simulation of increasing rice price toward the disparity of income distribution: An evidence from Indonesia. *Heliyon*, 9(3). https://doi.org/10.1016/j.heliyon.2023.e13785

Saefulloh, M. H. M., Fahlevi, M. R., & Centauri, S. A. (2023). Pengaruh inflasi terhadap pertumbuhan ekonomi: Perspektif Indonesia. *Jurnal Keuangan Negara dan Kebijakan Publik*, 3(1), 17.

Hanbal, H., Saputri, H. E., Lalita, N. T., & Sarpini. (2024). Mengungkap dinamika ekonomi (permintaan dan penawaran agregat dalam perekonomian Indonesia). *Merdeka Indonesia Journal International (MIJI), 4*(2), 13–25. https://doi.org/10.5555/miji.v4i2.173

Haniah, N. (2013*).* Uji Normalitas Dengan Metode Liliefors. http://statistikapendidikan.com

Jumilah, Andriyani, D., & Nailufuar, F. (2021). Pengaruh Inflasi Dan Produk Domestik Regional Bruto (Pdrb) Sektor Pertanian Terhadap Nilai Tukar Petani Di Provinsi Aceh Tahun 2008-2019. http://ojs.unimal.ac.id/index.php/JEPU

Marsudi, E., Syafitri, Y., & Makmur, T. (2020). Faktor-faktor yang mempengaruhi nilai tukar petani padi dan perkembangannya di Provinsi Aceh (Factors affecting the exchange rate of rice farmers and their development in Aceh Province). *Jurnal Agrisep*, *21*(2), 51–60. https://doi.org/10.17969/agrisep.v21i2.17220

Mulyawan, Y. (2022). Pengaruh Inflasi Terhadap Nilai Tukar Petani Di Indonesia (Vol. 7, Issue 1).

Murdy, S. (2017). Do Prices Affect Farmer's Term of Trade in Indonesia?. *Jurnal Manajemen Dan Agribisnis*. https://doi.org/10.17358/jma.14.3.264

Rahim, R., Utami, N., Nurfalah, R., Anggraeni, Y., Kurnia, R., Dela, A., & Pasaribu, S. (2024). Dinamika Ketahanan Pangan: Analisis Pengaruh Luas Panen Padi, Konsumsi Beras, Harga Beras, dan Jumlah Penduduk Terhadap Produksi Padi di Wilayah Sentra Padi di Indonesia Tahun 2017-2021. *Innovative: Journal Of Social Science Research,* 4(3), 17083–17093. https://doi.org/10.31004/innovative.v4i3.12524

Khoirunisa, D. U., Rahmah, L. I., Amalia, L., Nabillah, M. F., & Fernanda, M. F. (2025). Analisis faktor-faktor yang memengaruhi kesempatan kerja di 20 provinsi dengan penduduk terpadat tahun 2017–2024. *Jurnal Ekonomi dan Pembangunan Indonesia*, *3*(3), https://doi.org/10.61132/jepi.v3i3.1621

Larasati Puspita Saridewi. (2021). Analisis Nilai Tukar Petani Komoditas Padi Di Yogyakarta. *Journal of Agribusiness Science and Rural Development*, *1*(1), 18-25. https://doi.org/10.32639/jasrd.v1i1.11

Scherfranz, V., Schaak, H., Kantelhardt, J., Reimand, K., Braito, M., Bodea, F. V., Costache, C., Popa, R., de Vries, R., Kleijn, D., Kadulin, A., Melts, I., Hood, A. S. C., Potts, S. G., & Schaller, L. (2025). Farmers' perceived financial and non-financial costs of their biodiversity measures – Exploring viewpoints with Q-methodology. *Ecological Economics*, *236*, 108694. https://doi.org/10.1016/j.ecolecon.2025.108694

Setiawan, A. B., Yusuf, M., Prajanti, S. D. W., Prasetyo, F. H., Bowo, P. A., & Maftukhah, I. (2024). Unraveling the Interplay among Inflation, Rice Prices, and Farmers Exchange Rate in Indonesia. *Agro Ekonomi*, 35(1), 1. https://doi.org/10.22146/ae.86078

Silvia, E. D., Susanti, R., Ariani, F., & Yunus, M. (2024). Dampak Perubahan Harga Beras terhadap Kesejahteraan Petani. *Jurnal Alwatzikhoebillah : Kajian Islam, Pendidikan, Ekonomi, Humaniora,* 10(2), 475–480. https://doi.org/10.37567/alwatzikhoebillah.v10i2.2874

Aulia, S. S., Rimbodo, D. S., & Wibowo, M. G. (2021). Faktor-faktor yang memengaruhi nilai tukar petani (NTP) di Indonesia. *JEBA (Journal of Economics and Business Aseanomics)*, *6*(1), xx–xx. https://doi.org/10.33476/j.e.b.a.v6i1.1925

Tenriawaru, A. N., Arsyad, M., Amiruddin, A., Viantika, N. M., & Meilani, N. H. (2021). Analisis dan Determinan Nilai Tukar Petani Tanaman Pangan (NTPP) di Provinsi Sulawesi Selatan. AGRITEXTS: *Journal of Agricultural Extension*, 45(2), 146. https://doi.org/10.20961/agritexts.v45i2.57364

Triwidia, E., Nuraini, I., Boedirochminarni, A., & Firmansyah, M. (2024). Analisis Pengaruh Produktivitas Padi, Indeks Harga yang Dibayar Petani dan Produksi Padi Terhadap Kesejahteraan Petani di Indonesia". *JSHP : Jurnal Sosial Humaniora Dan Pendidikan,* 8(2), 213–223. https://doi.org/10.32487/jshp.v8i2.2086

Wulandari, N., Asra, M., Nur Afifa, R., & Sains Islam Al Mawaddah Warrahmah Kolaka, U. (2025). Pengaruh Kenaikan Harga Beras Terhadap Kesejahteraan Petani Dalam Perspektif Ekonomi Islam (Studi Kasus Desa Mokupa Jaya). *JEBS,* 8, 2025. https://journal.usimar.ac.id/index.php/jebs/index

Yulianti, N. D., Gunawan, S. A., Hizbandyah, B. N., Brata, A. S., & Maesaroh, S. S. (2023). Analisis Harga Gabah Kering Panen Dan Harga Beras Premium Terhadap Nilai Tukar Petani Di Jawa Barat Periode 2019-2021. *Jurnal Ilmu-Ilmu Agribisnis*, 11(3), 137. https://doi.org/10.23960/jiia.v11i3.7214

Zega, Y., & Hakim, D. B. (2024). The Effect of Rice Self-Sufficiency on Farmers' Welfare in Indonesia: A Dynamic Panel Data Approach. *Jurnal Ekonomi Dan Kebijakan Pembangunan,* 13(2), 133–153. https://doi.org/10.29244/jekp.13.2.2024.133-153