



The Influence Of Inflation, Rupiah Exchange Rate, International Wheat Price, and Import Price On Wheat Imports From Australia In 2010-2023

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Abstract. Indonesia, as a country with an open economic system, engages in international trade to meet domestic needs. Wheat is one of the commodities imported due to high domestic demand and the limitations of a tropical climate that hinder local wheat cultivation. Consequently, Indonesia has continued importing wheat from the New Order era to the present. It is said that Indonesia has become dependent on wheat imports. One of the main wheat suppliers to Indonesia is Australia, with import volumes showing a fluctuating trend from 2010 to 2023. These fluctuations are affected by several factors, including inflation, the Rupiah exchange rate, worldwide wheat prices, and import expenses. This study seeks to: (1) Evaluate the concurrent effects of inflation, the Rupiah currency rate, world wheat prices, import costs in respect to Australia's wheat imports volume; (2) examine the individual effects of inflation, the Rupiah exchange rate, international wheat prices, and import prices Regarding the wheat import volume from Australia; and (3) explore the short-term and long-term impacts of each variable. Using monthly time series data from January 2010 to December 2023, this study employs a quantitative approach under Error Correction Model (ECM). The study's results demonstrate that inflation, the Rupiah exchange rate, international wheat prices, and import prices collectively exert a considerable influence Regarding the wheat import volume from Australia. Inflation and worldwide wheat prices exert a considerable positive impact, whilst import costs and the Rupiah exchange rate impose a major negative effect. Over the long term, all variables substantially influence wheat import volumes; conversely, in the near term, only import prices exert a negative and significant effect.

Keywords: Inflation, Rupiah Exchange Rate, International Wheat Price, Import Price, Wheat Imports

1. INTRODUCTION

The agricultural sector plays a crucial role in ensuring Indonesia's food security, as mandated by Law No. 18 of 2012 on Food. However, Indonesia's dependence on food imports, particularly wheat, has been increasing. Data indicate that the volume of agricultural imports has risen significantly over the past decade (BPS, 2023). This situation highlights major challenges to national food security due to the country's minimal wheat production, which is hindered by the tropical climate, limited research, and insufficient investment in the sector (Ministry of Agriculture, 2022).

Wheat has become one of the staple food commodities consumed by Indonesians, second only to rice. Per capita wheat flour consumption continues to rise in line with lifestyle changes and the growing demand for wheat-based products such as instant noodles and bread (Agricultural Data and Information Center, 2021). Wheat is utilised not only for human consumption but also as animal feed, especially with the implementation of maize import limits in 2016 (Ministry of Trade, 2020). Import data indicate that Australia is the foremost provider of wheat to Indonesia, succeeded by Canada, Ukraine, Argentina, and the United States (FAO, 2022). Geographical reasons and bilateral trade agreements, like the Indonesia-Australia

Comprehensive Economic Partnership Agreement (IA-CEPA), have facilitated the substantial volume of wheat imports from Australia (Ministry of Industry, 2021).

However, wheat imports from Australia have fluctuated due to various economic and geopolitical factors. In 2013, the government attempted to reduce import dependence, but the policy was short-lived (Ministry of Finance, 2014). In 2018, imports plummeted due to a surge in global wheat prices caused by droughts in major wheat-producing countries (USDA, 2019). In 2021, imports sharply increased as wheat production in Australia improved, but they declined again in 2022 due to the Russia-Ukraine war, which triggered a spike in global food prices (World Bank, 2022). Additionally, weakened consumer purchasing power and declining wheat flour consumption have also contributed to fluctuations in wheat imports (BPS, 2022). Multiple critical elements affect the dynamics of wheat imports in Indonesia, such as inflation, the exchange rate of the Rupiah against the US dollar, global wheat prices, and import costs. Elevated inflation frequently stimulates a rise in imports as people want more economical food options (Bank Indonesia, 2021). Fluctuations in the Rupiah exchange rate directly impact import costs, where Rupiah depreciation raises wheat import prices and vice versa (IMF, 2022). The volatility of international wheat prices, influenced by weather conditions, geopolitical tensions, and logistical costs, also determines Indonesia's annual wheat import volume (OECD, 2023).

These problems lead this study to investigate the effects on the volume of wheat imports from Australia from 2010 to 2023 inflation, currency rates, international wheat prices, and import prices.

2. RESEARCH METHODS

This study utilises a quantitative methodology, necessitating comprehensive numerical analysis, encompassing data collection, interpretation, and presenting of results. Therefore, it is recommended that the final study be supplemented with visual representations such as images, tables, graphs, or other displays to enhance clarity (Siyoto & Sodik, 2015).

This analysis utilises secondary data comprising time series data from January 2010 to December 2023. The data were acquired by documentary methods from sources including Bank Indonesia, the Ministry of Trade, Index Mundi, and UN Comtrade. The gathered data will be examined utilising the Error Correction Model (ECM) to elucidate the link between the independent and dependent variables, aided by EViews 13 software.

The study is conducted in Indonesia and focuses on analyzing how inflation, exchange rates, international wheat prices, and import prices influence the volume of wheat imports from Australia from 2010 to 2023.

3. RESULTS AND DISCUSSION

Research Results and Discussion

Stationarity Test Results

1) Unit Root Test Results

Following the execution of a root test or unit root test utilising the Augmented Dickey-Fuller (ADF) test, it is determined that only the wheat import volume variable (Y) and the import price (X4) are stationary at the level level. The wheat import volume variable (Y) has an absolute value of the ADF test $>$ Mackinnon's critical value at $\alpha=5\%$, which is $-4.450773 > -2.878829$. This is also supported by the probability value <0.05 , which is $= 0.0004$. Then for the import price variable (X4) have ADF test absolute value $<$ critical value Mackinnon on $\alpha=5\%$, which is $-3.390891 > -2.878937$. This is also supported by the probability value > 0.05 which is 0.0126 . Thus, both variables are stationary at the level level.

Inflation volume (X1), Rupiah exchange rate (X2), and international wheat price (X3) are non-stationary at the level, exhibiting a probability value exceeding $\alpha = 5$ percent, and possess an ADF test absolute value less than Mackinnon's critical value at $\alpha = 5\%$. The Augmented Dickey-Fuller (ADF) test, employing a Mackinnon critical value of 5%, demonstrates that not all variables display stationarity at the unit root, requiring the implementation of an integration test.

2) Degree of Integration Test Results

The Augmented Dickey-Fuller (ADF) test indicates that not all variables demonstrate stationarity at the level level. Therefore, integration testing must be performed to determine the stationarity of each variable. Employing the ADF test at a 5% significance level, the absolute value of the ADF test statistic for the wheat import volume variable surpasses Mackinnon's critical value at the 5% confidence level, namely $-13.03344 > 2.878937$. This is further corroborated by a probability value of <0.05 , namely $= 0.0000$. Consequently, the variable representing wheat import volume is steady at the first level of differentiation. The absolute value of the inflation variable in the ADF test exceeds the 5% critical criterion, namely $= -9.989220 > -2.878829$. This is further corroborated by a probability value of <0.05 , namely $= 0.0000$. Thus, the inflation variable is steady at the first level of differentiation. Fluctuating exchange rate Therefore, the exchange rate variable is stationary at the first degree of

differentiation. -13.97927 exceeds -2.878829 . This is further substantiated by the probability value <0.05 , which is equivalent to 0.0000 . Therefore, the exchange rate variable is stationary at the first degree of differentiation. The absolute value of the ADF test for the worldwide wheat price variable exceeds the 5% critical criterion, specifically $-10.68038 > -2.878829$. This is further corroborated by the probability value <0.05 , which equals 0.0000 . Consequently, the international wheat price variable is stationary at the first level of differentiation. The absolute value of the import price variable in the ADF test exceeds the 5% critical criterion, specifically $-9.566934 > -2.879155$. Consequently, the import price variable is stationary at the first level of differentiation.

Under the Augmented Dickey-Fuller test (ADF-test), all variables show stationarity at the Mackinnon 5% critical point. All variables thus show stationarity at the first difference and satisfy the criteria for inclusion in the Error Correction Model (ECM) analysis.

Cointegration Test Results

1. The coefficient of the inflation variable indicates a positive sign that has a statistically significant effect on the volume of wheat imports at a probability of $0.0017 < \alpha = 5\%$. If the inflation variable increases by 1%, assuming other factors are constant, then the volume of wheat imports will increase by 0.125851%.
2. The coefficient of the exchange rate variable exhibits a negative sign, demonstrating a statistically significant effect on the amount of wheat imports with a probability of $0.0440 < \alpha = 5\%$. If the exchange rate variable increases by 1%, assuming other factors are constant, then the volume of wheat imports will decrease by 0.746054%.
3. The coefficient of the international wheat price variable shows a positive sign that has a statistically significant effect on the volume of wheat imports at a probability of $0.0000 < \alpha = 5\%$. If the international wheat price variable increases by 1% assuming other aspects are constant, then the volume of wheat imports will increase by 1.406315%.
4. The coefficient of the import price variable shows a negative sign that has a statistically significant effect on the volume of wheat imports at a probability of $0.0000 < \alpha = 5\%$. If the import price variable increases by 1% assuming other aspects are constant, then the volume of wheat imports will be subject to a shrinkage of 1.717241%.
5. With an R-squared coefficient of 0.224699, the independent variables in the model help to explain 22.46% of the variance in the dependent variable, wheat import volume, over the long run.

6. The probability value coefficient of the F-statistic is $0.0000 < \alpha = 5\%$, signifying that all independent variables together exert a statistically significant influence on the dependent variable.

The outcomes of the cointegration test utilising the Augmented Dickey-Fuller indicate that the residual variable ECT(-1), as a linear combination of all variables employed in this study, is stationary. Particularly $-7.307272 > -3.469691$, -2.878723 , and -2.576010 , the absolute computed value of each variable surpasses the absolute critical value at the 1%, 5%, and 10% levels. A probability value of 0.0000, less than 5%, confirms this even more.

The cointegration test results demonstrate that both the dependent and independent variables in this study display cointegration, indicating a long-term equilibrium among wheat import volume, inflation, the rupiah exchange rate, international wheat prices, and import prices. The analysis can thereafter be performed using the Error Correction Model (ECM). Short-Term Model (ECM)

1. The coefficient of the inflation variable exhibits a positive sign, which lacks statistical significance for alterations in the volume of wheat imports, with a probability of 0.4488 exceeding $\alpha = 5\%$.
2. The exchange rate coefficient shows a negative sign which has no statistically significant impact [there is a volume of wheat imports at a probability of $0.2535 > \alpha = 5\%$].
3. The coefficient of international wheat prices displays a positive sign, signifying a statistically significant impact on the volume of wheat imports with a probability of 0.6707, surpassing $\alpha = 5\%$.
4. The import price coefficient shows a negative sign that has a statistically significant effect on the volume of wheat imports at a probability of $0.0011 > \alpha = 5\%$. If the change in import prices increases by 1%, assuming other factors are constant, then the change in the volume of wheat imports will decrease by 0.941722%.
5. The constant number of 0.006488 implies that the increase of wheat imports equals 0.006488% should all the variables of inflation, exchange rate, international wheat price, and import price be zero.
6. With an R-squared value of 0.270300, other elements not included in the estimation model explain the remaining 72.97% while the variables of inflation, exchange rate, international wheat price and import price can help to explain the variation in wheat imports from Australia to Indonesia by 27.03%.
7. Based on the simultaneous test outcomes conducted by considering its significance, simultaneously the independent variables trigger the dependent variable, as evidenced by

the probability value (F-statistic) of $0.000000 < \alpha = 5\%$, which means that simultaneously the independent variables can trigger the dependent variable with a 95% confidence level in the short term.

8. The variable of wheat import volume is not only influenced by inflation, exchange rate, international wheat price and wheat price, but also triggered by the error term (ECT) variable. The RCT regression coefficient (-1) in this study is -0.469691 with an F-statistic probability of $0.0000 < \alpha = 5\%$, with a negative coefficient value which means that the variables of wheat import volume, inflation, exchange rate, international wheat price, and import price will move towards a balance value (cointegrated) in the long term.
9. The coefficient value (Error Correction Term) is -0.469691, indicating that over 50% of the discrepancy between the long-term and short-term models will be rectified in around fifteen days. This statistic is derived by multiplying the coefficient of 50% by 30 (thirty days), as the observational data is monthly.
10. The results of short-term regression or ECM, obtained the probability value of ECT (-1) of $0.0000 < \alpha = 5\%$ which is statistically significant. The coefficient value of ECT (-1) of 0.469691 must be negative and statistically significant. By fulfilling these requirements, the use of the ECM model is appropriate in this study

Classical Assumption Test

1) Normality Test

Table 1. Normality Test Results

Test	Jarque-Bera	Probability	Information
Normality	3.571358	0.167638	Normal

According to Table 1, it can be inferred that at $\alpha = 5\%$, the residuals of the short-term equation model (3.2), which indicate the relationship of independent variables significantly influencing the dependent variable, are normally distributed. The p-value of 0.167638 exceeds the significance level of $\alpha = 5\%$. Consequently, H_0 is approved whereas H_1 is refused.

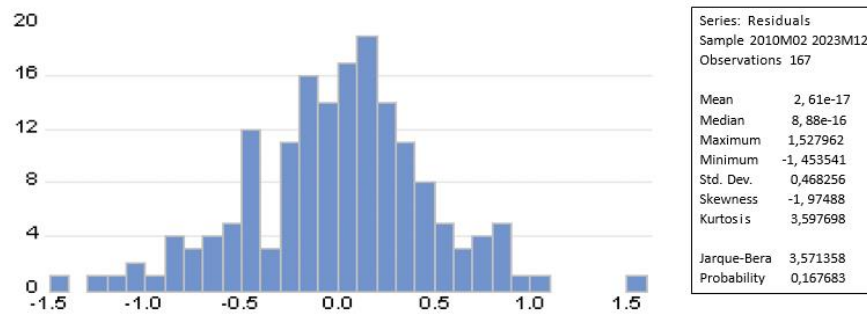


Figure 1. Normality Test Results

2) Autocorrelation Test

Table 2. Durbin-Watson Values

DW Terms	Conclusion
$0 < DW < dl$	Autocorrelation occurs
$dl \leq DW \leq du$	Cannot be concluded
$du < DW < 4-du$	No autocorrelation
$4-du \leq DW \leq 4-dl$	Cannot be concluded
$4-dl < d < 4$	Autocorrelation occurs

Table 3. Autocorrelation Test Results

dU	DW-Test	4-dU	Information
1,7961	2,169227	2.2039	No autocorrelation

Source: Appendix 8, processed 2024

The earlier stated mathematical findings are valid when DW is 2.169227, which lies between the DU and (4-DU) values of 1.7961 and 2.2039 ($DU < DW < 4-DU$). The presumption of the absence of residual autocorrelation among observations is fulfilled. Thus, the null hypothesis (H_0) is accepted whereas the alternative hypothesis (H_1) is rejected, signifying the lack of residual autocorrelation.

3) Multicollinearity Test

Table 4. Multicollinearity Test Results

Variables	Coefficient Variance	VIF No Centered	VIF Centralized
C	0.002889	1.019533	NA
D(X1)	0.010533	1.057350	1,057186
D(LN_X2)	5.143896	1.070173	1.054030
D(LN_X3)	0.657473	1.044445	1.043306
D(LN_X4)	0.080728	1.021188	1.021122
ECT(-1)	0.004379	1.009962	1.009962

Source: Appendix 9, processed 2024

Table 4 indicates that the assumption of no multicollinearity is met if the VIF value for each independent variable is below 10.

4) Heteroscedasticity Test

Table 5. Heteroscedasticity Test Results

F-statistic	1.827466	Prob. F(5,89)	0.1103
Obs*R-Squared	8.968837	Chi-Square Prob.(5)	0.1103
Scaled explained SS	8,796950	Chi-Square Prob.(5)	0.1174

Source: Appendix 9, processed 2024

Based on Table 5, a conclusion can be drawn with a Chi Square probability value of 0.1103 which is greater than $\alpha = 5\%$, using the Harvey method, so that the assumption of no heteroscedasticity in this model is met.

Statistical Test

Coefficient of Determination R²

Table 6. Determination Coefficient Value

Connection	R-Squared Value
Long-term	0.224699

Short-term	0.270300
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Source: Appendix 6 and 8, processed 2024

From Table 6 the following information can be obtained:

1. The R-squared coefficient in the long-term estimation of OLS regression indicates a significant long-term connection with a value of 0.224699 between the dependent and independent variables. With the other variation ascribed to elements not included in the study, the independent variables in this analysis account for 22.46% of the variance in the dependent variable.
2. With a value of 0.270300, the coefficient of determination denoted as R squared in the short-term estimation signifies the important short-term relationship of independent factors with the dependent variable. Whereas the remaining variance is allocated to other unexplored factors, the independent variables in this analysis explain 27.03% of the variance in the dependent variable..

Testing the Effect of Inflation, Rupiah Exchange Rate, International Wheat Prices, and Import Prices on the Volume of Wheat Imports from Australia to Indonesia (F Test)

Table 7. Determination Coefficient Value

Connection	F-Statistic Prob. Value	Alpha Value	F-value count	F-table value	Decision
Long-term	0.00000	0.05	11.81026	2.43	Ho was rejected
Short-term	0.00000	0.05	11.92775	2.43	Ho was rejected

Source: Appendix 6 and 8, processed 2024

Table 7 displays the simultaneous impact test findings for the investigation of long-term and short-term relationships between the dependent and independent variables.

1. The Effect of Inflation, Rupiah Exchange Rate, International Wheat Prices and Wheat Prices on the Volume of Wheat Imports from Australia to Indonesia

At least one independent variable clearly influences the dependent variable over long terms at a significance threshold of $\alpha = 5\%$. With a value of 0.00000 below the significance level $\alpha = 5\%$, the independent variables together affect the dependent variable, therefore confirming the validity of the regression model. With database 1 = 4, database 2 = 163, $\alpha = 5\%$, the F-count of 11.81 surpasses the F-table value of 24.3. The F-count (11.81) therefore surpasses the F-table (2.43), and the probability value is less

than 0.05; hence, H0 is refuted and H1 is approved. This suggests that long-term wheat import volume from Australia to Indonesia is influenced by inflation, rupiah currency rate, international wheat prices, and import prices taken together.

2. The Effect of Inflation, Rupiah Exchange Rate, International Wheat Prices and Import Prices on the Volume of Wheat Imports from Australia to Indonesia in the Short Term.

It is clear from $\alpha = 5\%$ that at least one independent variable has a transient effect on the dependent variable. With a Prob. F-statistic = 0.00000 less than the significance level of $\alpha = 5\%$, the independent variables taken together influence the dependent variable, therefore making the regression model legitimate. Moreover, the F-count value of 11.92 surpasses the F-table value (db1 = 4, db2 = 163, $\alpha = 5\%$) of 24.3. Consequently, H0 is refuted and H1 is approved since F-count (11.92) > F-table (2.43) and the probability value is 0.05.. This signifies that inflation, the rupiah exchange rate, international wheat prices, and import prices collectively influence the volume of wheat imports from Australia to Indonesia in the short term.

According to the simultaneous impact test, there at least one independent variable influencing the dependent variable in both long-term and short-term relationships. The next phase will be doing a partial influence test on the independent variables to identify which one influences the dependent variable both long term and short term.

Testing the Effect of Inflation, Rupiah Exchange Rate, International Wheat Prices, and Import Prices on the Volume of Wheat Imports from Australia to Indonesia (t-Test)

Table 8. Long-Term Partial Effect Test

Variables	Coefficient	T-value count	T-table value	Prob.	Alpha Value
C	15,70978	3.890137	1,975	0.0001	0.05
Inflation	0.125821	3,195421	1,975	0.0017	0.05
LN Exchange Rate	-0.746054	-2,029707	1,975	0.0440	0.05
LN International Wheat Prices	1.406315	4.847975	1,975	0.0000	0.05
LN Import Price	-1.717241	-4.317738	1,975	0.0000	0.05

Source: Appendix 6, processed 2024

Based on Table 8, the partial impact of independent variables on dependent variables in the long term can be explained as follows.

1. Testing the effect of inflation on the volume of wheat imports from Australia to Indonesia in the long term

The analysis indicates that inflation significantly affects the volume of wheat imports from Australia to Indonesia, as demonstrated by a calculated t-value of 3.195421, surpassing the t-table value of 1.975 (with 168 observations, $k = 5$, $df = 163$, $\alpha = 0.05$), and a probability value of 0.0017, which is below $\alpha = 0.05$. This signifies the rejection of H_0 and the acceptance of H_1 , suggesting that over time the volume of wheat imports from Australia to Indonesia shows a positive and statistically significant correlation with inflation.

2. Testing the effect of the Rupiah exchange rate on the volume of wheat imports from Australia to Indonesia in the long term

The computed probability value of 0.0440 at $\alpha = 0.05$ demonstrates that the calculated t-value of -2.029707 exceeds the absolute t-table value of 1.975, therefore revealing the effect of the Rupiah exchange rate on the volume of wheat imports from Australia to Indonesia. As the null hypothesis (H_0) is rejected and the alternative hypothesis (H_1) is accepted, the Rupiah exchange rate thus has a negative and statistically significant effect on the volume of wheat imports from Australia to Indonesia over long term.

3. Testing the influence of international wheat prices on the volume of wheat imports from Australia to Indonesia in the long term

The calculated t-value of 4.847975, which exceeds the t-table value of 1.975 (with 168 observations, $k = 5$, $df = 163$, $\alpha = 0.05$), shows how important world wheat prices are to the volume of Australian wheat imported to Indonesia. Moreover, the probability value of 0.0000 is smaller than $\alpha = 0.05$. This shows the rejection of H_0 and the acceptance of H_1 , meaning that long-term volume of wheat imports from Australia to Indonesia is favorably influenced by worldwide wheat prices statistically significantly..

4. Testing the effect of import prices on the volume of wheat imports from Australia to Indonesia in the long term

Globally wheat prices affect the volume of wheat imports from Australia to Indonesia statistically relevant given a computed t-value of -4.317738 larger than the absolute t-table value of 1.975. Set α at 0.05; the 0.0000 probability value is obtained. Given the null hypothesis is disproved and the alternative hypothesis is approved, this implies that over long terms import prices have a negative and statistically significant

influence on the volume of wheat imports from Australia to Indonesia. Subsequently, a partial influence test was performed in the short term, resulting in the following findings.

Table 9. Short-Term Partial Effect Test

Variables	Coefficient	T-value count	T-table value	Prob.	Alpha Value
C	0.006488	0.120713	1,975	0.9041	0.05
Inflation	0.077915	0.759198	1,975	0.4488	0.05
LN Exchange Rate	-2,599150	-1.146002	1,975	0.2535	0.05
LN International Wheat Prices	0.345407	0.425983	1,975	0.6707	0.05
LN Import Price	-0.941722	-3.314447	1,975	0.0011	0.05

Source: Appendix 8, processed 2024

Based on Table 9, the partial impact of independent variables on dependent variables in the short term can be explained as follows.

1. Testing the effect of inflation on the volume of wheat imports from Australia to Indonesia in the short term

The computed t-value of = 0.509198, which is smaller than the t-table value = 1.975 (number of observations = 168, $k = 5$, $df = 163$, $\alpha = 0.05$) and the probability value of $0.4488 > \alpha = 0.05$ indicates the significance value of the influence of inflation on the volume of wheat imports from Australia to Indonesia. This implies that H_0 is accepted and H_1 is rejected, so over the near run inflation has no statistically significant effect on the volume of wheat imports from Australia to Indonesia.

2. Testing the effect of the Rupiah exchange rate on the volume of wheat imports from Australia to Indonesia in the short term

The calculated t-value of = -1.146002 shows the significant value of the influence of the Rupiah exchange rate on the volume of wheat imports from Australia to Indonesia. With 168, $k = 5$, $df = 163$, $\alpha = 0.05$, it is less than the t-table value = 1.975. The probability value of $0.2535 > \alpha = 0.05$ indicates this as well. This implies that the Rupiah exchange rate has no statistically significant effect on the volume of wheat imports from Australia to Indonesia in the near run; H_0 is accepted and H_1 is rejected.

3. **Testing the influence of international wheat prices on the volume of wheat imports from Australia to Indonesia in the short term**

The calculated t-value of = 0.425983 indicates, according to the computation results, the significance value of the influence of international wheat prices on the volume of wheat imports from Australia to Indonesia. $\alpha = 0.05$; the t-table value = 1.975; the probability value = 0.6707 > $\alpha = 0.05$. H_0 is thus accepted whereas H_1 is rejected; so, worldwide wheat prices have no statistically significant effect on the volume of wheat imports from Australia to Indonesia in the near future.

4. **Testing the effect of import prices on the volume of wheat imports from Australia to Indonesia in the short term**

The computation findings and the probability value = 0.0011 $\alpha = 0.05$ point to the relevance of import prices on the volume of wheat imports from Australia to Indonesia. Absolute value of the computed t-value of = -3.314447 exceeds the t-table value = 1.975. This suggests that, if H_0 is rejected and H_1 is authorized, import pricing influences import volume of wheat imports from Australia to Indonesia both negatively and statistically significantly.

Discussion of research results

1) **The effect of inflation on the volume of wheat imports from Australia to Indonesia**

The test results indicate that the inflation variable significantly affects the long-term volume of wheat imports. Table 4.5 indicates that the coefficient for the long-term inflation variable is 0.125851, with a long-term probability value of 0.0017, which is less than $\alpha = 5\%$. This coefficient indicates an increase in the wheat import volume variable when the inflation variable experiences a spike. A positive coefficient value signifies that the wheat import volume variable positively influences the inflation variable, resulting in a rise in import volume. An increase in inflation of 1% is projected to result in a 0.12% rise in demand for wheat imports. In the short run, the variable's coefficient is 0.077915, indicating that a 1% increase in inflation will result in a 0.077915% increase in wheat import volume; however, this effect is not statistically significant, with a probability value exceeding $\alpha = 5\%$.

This is consistent with the theory and hypothesis since it confirms that the inflation variable somewhat influences the volume of wheat imports from Australia. The Greatest Showman (2016) posits that inflation will lead to a surge in domestic prices while rendering imported items comparatively inexpensive, hence resulting in a rise in imports. One contributing factor to inflation in Indonesia is the issue of food availability,

resulting in an increase in rice prices. Consequently, the number of wheat imports, recognized as a prevalent alternative diet in Indonesia, has risen.

These results align with prior research by Son (2016), indicating that inflation exerts a positive and significant influence on imports in the long term. This is attributable to the rising inflation rate, which signifies an escalation in the price of goods. Consequently, the cost of imported items is lower than that of domestic products, leading to a growth in imports.

2) The effect of the Rupiah exchange rate on the volume of wheat imports from Australia to Indonesia

The test results demonstrate that the Rupiah exchange rate variable considerably affects the long-term volume of wheat imports. Table 4.5 reveals that the long-term coefficient for the Rupiah exchange rate variable is -0.746054, accompanied by a long-term probability value of 0.0440, which is below $\alpha = 5\%$. This coefficient signifies a decrease in the wheat import volume variable when the Rupiah exchange rate rises. The negative coefficient implies that the Rupiah exchange rate negatively influences the volume of wheat imports; consequently, an increase in the Rupiah exchange rate will lead to a fall in wheat import volume. The demand for wheat imports is expected to drop 0.74% with a 1% increase in the Rupiah exchange rate.

This result corroborates the hypothesis and theory, affirming that the Rupiah exchange rate variable negatively impacts the volume of wheat imports from Australia. The Great (2015) asserted that a depreciation of the Rupiah exchange rate would negatively affect imports by leading to a decrease. This analysis' conclusions correspond with those of Pradeksa et al. (2014), This proved that the volume of Indonesian wheat imports suffers from negative Rupiah exchange rate effects. Similarly, studies by Agus and Ayuningsasi (2016) verified that Indonesian cattle imports suffered a negative and notable influence from the currency rate. Results The Last Supper (2012) also shows that the volume of Indonesian beef imports over the long run is significantly and negatively impacted by the Rupiah's exchange rate versus the Dollar. In their analysis on the effect of the Rupiah exchange rate on the volume of wheat imports in Indonesia, Cipta and Asmara (2023) produced contradicting findings. Though not statistically significant, the negative coefficient for the Rupiah exchange rate variable raises questions about the magnitude of wheat imports into Indonesia.

Subsequent to the 1998 monetary crisis, Indonesia implemented a free-floating exchange rate regime, leading to consistent volatility of the Rupiah against the US

Dollar. The fluctuations in the exchange rate affected the domestic price of imported wheat, as wheat is a commodity purchased in foreign money (US Dollar). When the Rupiah depreciates, the cost of wheat imports escalates, leading to heightened procurement expenses for wheat. Rising import costs may restrict the volume of wheat imports, especially if the wheat or flour processing industry cannot accommodate the additional expenses. The long-term exchange rate of the Rupiah negatively and substantially impacts the volume of wheat imports.

In the short term, the Rupiah exchange rate does not have a statistically significant impact on the volume of wheat imports. The short-term coefficient is -2.599150, signifying that a 1% rise in the Rupiah exchange rate leads to a 2.5% decrease in wheat import volume; nevertheless, this effect lacks statistical significance, with a probability value above $\alpha = 5\%$. This corresponds with a study by Widiananda (2019), which demonstrated that the Rupiah exchange rate does not significantly influence wheat imports in Indonesia in the short term.

3) The impact of international wheat prices on the volume of wheat imports from Australia to Indonesia

The test results demonstrate that the international wheat price variable has a considerable impact on the long-term wheat import volume variable. The long-term coefficient for the global wheat price variable is 1.406315, accompanied by a long-term p-value of 0.0000, which is below $\alpha = 5\%$. This coefficient is significant due to an increase in the wheat import volume variable, which correlates with a rise in the international wheat price variable. A positive coefficient indicates that the international wheat price variable positively affects the import volume variable, leading to an increase in import volume. An increase of 1% in the international wheat price correlates with a 1.406315% rise in demand for wheat imports. The short-term coefficient of 0.345407 indicates that a 1% increase in the international wheat price results in a 0.34% increase in wheat import volume; nevertheless, this link is not statistically significant, with a probability value exceeding $\alpha = 5\%$.

The findings of this investigation contradict the premise and theory asserting that international wheat prices adversely affect wheat imports. The law of demand asserts that a decrease in the price of a good leads to an increase in the amount wanted, whereas an increase in price results in a decrease in quantity demanded, everything else being equal (Hidayah, 2020). This experiment, albeit producing divergent results from the hypothesis, corroborates the research by Pradeksa et al. (2014). The study indicated

that global wheat prices had a significant and favorable impact on the volume of wheat imports in Indonesia. Indonesia exhibits a significant need for wheat. Data from the Food Consumption Statistics (2023) indicate that wheat flour consumption rose by 6.75% in 2023, reaching a per capita consumption rate of 2,935 kg per year. The usage of instant noodles, a processed product made from wheat flour, continues to rise. According to data from the World Instant Noodles Association (WINA), Indonesia ranks as the second highest country in global instant noodle consumption.

Despite the significant demand for wheat-based products, Indonesia has been unable to cultivate domestic wheat. Indonesia continues to depend on wheat imports to satisfy the requirements of the wheat-based food manufacturing sector. Consequently, despite the rise in worldwide wheat prices, the demand for wheat imports in Indonesia continues to be substantial. The rising international wheat price is attributed to adverse meteorological conditions in various regions, notably Australia, which has seen prolonged droughts. This scenario results in disturbances for wheat producers, complicating the harvesting process. The minor import tax levied by Indonesia will undoubtedly advantage the stakeholders, as the rise in wheat prices is mitigated by the minimal import expenses (Pradeksa et al., 2014). The wheat import tax is 5%, but due to the IA-CEPA Cooperation between Indonesia and Australia, the import tax for Australian wheat is 0%.

4) The effect of import prices on the volume of wheat imports from Australia to Indonesia

The test findings demonstrate that the import price variable substantially affects the wheat import volume variable over the long run. The long-term coefficient for the import price variable is -1.717241, accompanied by a long-term p-value of 0.0000, signifying statistical significance at $\alpha = 5\%$. This coefficient signifies a decrease in the wheat import volume variable as the import price escalates. The negative coefficient suggests that the variable import price influences the wheat import volume negatively, thereby implying that a rise in import price will result in a drop in wheat import volume. A one percent rise in import costs is expected to cause the demand for wheat imports to drop 1.717241%. With statistical significance at a probability of 0.0011, a 1% increase in price results in a 0.9% decrease in wheat import volume, according to the short-term coefficient of -0.941722, assuming α is less than 5%.

This outcome aligns with the hypothesis and theory implying that the volume of wheat imports from Australia is negatively and quite significantly influenced by import

prices. According to the law of demand, *ceteris paribus* a rise in the price of a good will lower the quantity required for that good. According to Mankiw (2008), demand for a commodity typically diminishes as its price escalates, reflecting the inverse correlation between these two variables, *ceteris paribus*.

4 CONCLUSION

- a) The study results indicate that inflation, the Rupiah exchange rate against the USD, international wheat prices, and import prices simultaneously affect the volume of wheat imports from Australia to Indonesia. These four variables thus have a statistically significant influence on Indonesia's wheat import volume over the 2010–2023 period taken together.
- b) The results indicate that, to some extent, inflation and global wheat prices exert a positive and considerable influence on wheat import volume over the long term. The Rupiah exchange rate relative to the USD and import prices exert a negative and statistically significant impact on wheat import volume.
- c) In the long term, inflation and global wheat prices have a positive and considerable impact on the volume of wheat imports. In the short term, only import prices exhibit a statistically significant negative correlation with import volume, but inflation, the currency rate, and international wheat prices do not have significant effects.

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