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CONDITIONS AFFECTING IMPORTS OF MUNG BEANS IN INDONESIA

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Abstract

Mung beans are believed to be the key to Indonesia's food security in facing the food crisis in the future. This study aims to analyze the factors that influence the volume of mung bean imports in Indonesia. The factors studied include domestic production, import prices, exchange rates, domestic prices, and government policies. The data used are secondary data from 2007 to 2022, obtained from Statistics Indonesia (BPS), the Ministry of Agriculture, and UN Comtrade. Multiple linear regression was used to determine the effect of each independent variable on the volume of mung bean imports. Based on the EViews regression output, three variables were found to have a significant effect on the volume of mung bean imports in Indonesia: domestic production (negative effect), real domestic prices (positive effect), and import policy (significant effect). Meanwhile, real import prices and the exchange rate of the Rupiah against the US Dollar showed negative but statistically insignificant effects. These findings indicate that fluctuations in mung bean imports in Indonesia are more strongly influenced by domestic production levels, internal price dynamics, and government policies rather than external factors such as import prices and currency exchange rates.

Keywords*: Import Volume, Mung Beans, Domestic Production, Import Prices, Exchange Rates, Government Policy.*

INTRODUCTION

Current food diversification initiatives aim to reduce dependence on rice by promoting the consumption of alternative carbohydrate sources. Mung beans play a strategic role as a substitute for rice. People in Indonesia usually consume mung beans in the form of porridge or fillings in various typical snacks such as onde-onde and bakpia. Mung beans are considered a strategic crop for strengthening Indonesia's food resilience in anticipation of future food crises. Mung beans are a tropical crop that is easy to cultivate, has a relatively high and stable market price, and offers growing market potential due to population growth and the increasing variety of mung bean-based products (Hastuti et al., 2018). Given these factors, mung beans have become the third most important legume commodity in Indonesia (Fitriani & Taryono, 2022).

The demand for mung beans increasing along with the innovation of processed products in the household and industrial scale industries (Aryanti et al., 2017). The food industry needs mung beans to be processed into various types of food such as bean sprouts, mung beans porridge, baby food, snacks, and others. Its role as an important food ingredient necessitates increased production in response to the growing demand for mung bean-based foods. So far, various factors have contributed to the reduced levels of mung beans production each year. Problems that often occur include low soil fertility, land conversion, unfavorable climate factors, unpredictable rainfall, widespread pest and disease infestations, limited input supplies, inadequate storage and handling facilities, lack of market assurance, and limited support from national budget (APBN) facilities. In addition, the relatively large area of dry land and inadequate infrastructure are physical and socio-economic factors that hinder the development of mung beanss in Indonesian land (Suhartini et al., 2023). Drought is one of the causes of the failure production target commodity. Tanaem et al., (2021) stated that the harvested area of mung beans was 222,440 ha (2007-2022). Indonesia's mung bean production accounts for only about 30% of the domestic demand, which is approximately 350,000 tons annually (Directorate General of Food Crops, 2016).

The gap between strong domestic demand and limited local mung bean production has led to a significant increase in imports. The relatively high price domestically also makes

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imported products more in demand (Deyanputri, 2020). The cheap price of mung beans and the absence of import burdens make the development of domestic mung beans less conducive. Dependence on mung bean imports in Indonesia has a negative impact because it kills the domestic mung bean industrial and agricultural sectors (Nainggolan et al., 2016). However, even though the price of imported mung beans is more affordable, the price continues to increase by an average of 13.17% per year. This situation occurs because of the weak exchange rate of the rupiah against the US dollar (Prinadi et al., 2016). Every year, there are production challenges in Indonesia include low and unstable harvests,along with decreasing available agricultural land. Therefore, even though the price of imported mung beans is lower, the impact of exchange rate fluctuations and fluctuations in the exchange rate and increasing import costs further exacerbate Indonesia's dependence on imported products. This will further complicate the development of the domestic mung bean industry and may lead to a trade balance deficit in the future.

The decrease in mung bean production alongside the steadily increasing import value each year is addressed by the government through the issuance of the Minister of Finance's policy Number 06/PMK.010/2017 concerning the determination of the goods classification system and the imposition of import duty tariffs on imported goods. Tariff post or HS code 0713.31 *Vigna radiata* (L.) Wilczek which is classified as a dried vegetable commodity, whole, cut, sliced, broken, or in powder form, but not further processed is charged at 5.0% (Ministry of Finance, 2017). This policy was made to reduce the rate of mung beans imports. Likewise, the policy of reducing the threshold for exemption from import duty aims to create fairness in terms of taxation and create a fair level of competition in order to protect the local industry (Deyanputri, 2020).

The majority of mung beans are grown in Australia. The UNComtrade, (2023) import export database shows that there are 5 main Asian mung bean exporting countries to Indonesia, including Myanmar, Ethiopia, Australia, Thailand and China. Myanmar is the largest mung bean exporting country to Indonesia. The highest mung bean import volume from Myanmar was in 2021 at 87,491.38 tons and the lowest mung bean import occurred in 2015 at 29,364.94 tons. Factors suspected of influencing the volume of Indonesian mung bean imports include production, imported mung bean prices, exchange rates, domestic prices, and government policies. Therefore, this study aims to analyze the effect of Indonesian mung bean production, imported mung bean prices, exchange rates, domestic prices, and government policies on import volume during the period 2007-2022.

RESEARCH METHODS

Research Type and Design

This study is quantitative research with a descriptive and causal-comparative approach. The research design used time series study, which utilizes secondary data for the period 2007 to 2022. The causal approach is used to test the causal relationship between independent variables (mung beans production, import prices, exchange rates, domestic prices, and import policies) and the dependent variable (mung beans import volume).

Location and Time of Research

This research was conducted in Indonesia using data sourced from official government institutions including the Central Statistics Agency (BPS), the Ministry of Trade, and Bank Indonesia. The process of data collection, processing, and analysis was carried out in the period from January to May 2025.

Data Analysis Technique

The data analysis technique in this study was carried out using multiple linear regression analysis with EViews 12 software. Classical assumption tests were conducted beforehand to

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ensure the validity of the regression model, including tests for normality, multicollinearity, autocorrelation, and heteroscedasticity.

The analysis was carried out in two stages, namely:
1. Simultaneous Test (F Test): to determine the effect of all independent variables simultaneously on the dependent variable.
2. Partial Test (t-Test): to determine the influence of each independent variable individually on the dependent variable.

In addition, dummy variables are also used to capture the influence of government import policies in the form of certain interventions during the observation period.
This study uses a two-way hypothesis and is divided into two simultaneously and partially. The simultaneous hypothesis of this study is as follows:

H_0 : There is no influence between the variables of mung beans production, mung beans import price, Rupiah exchange rate against the US Dollar, domestic mung beans price, and government policy on the volume of mung beans imports in Indonesia.

H_a : There is an influence between the variables of mung beans production, mung beans import price, Rupiah exchange rate against the US Dollar, domestic mung beans price, and government policy on the volume of mung beans imports in Indonesia.

The partial hypothesis in this study is:

1. $H_0 1$: There is no influence of mung beans production on the volume of mung beans imports in Indonesia.
   $H_a 1$: There is an influence of mung beans production on the volume of mung beans imports in Indonesia.
2. $H_0 2$: There is no influence of mung beans import prices on the volume of mung beans imports in Indonesia.
   $H_a 2$: There is an influence of the import price of mung beans on the volume of mung beans imports in Indonesia.
3. $H_0 3$: There is no influence of the Rupiah exchange rate against the US Dollar on the volume of mung beans imports in Indonesia.
   $H_a 3$: There is an influence of the Rupiah exchange rate against the US Dollar on the volume of mung beans imports in Indonesia.
4. $H_0 4$: There is no influence of domestic mung beans prices on the volume of mung beans imports in Indonesia.
   $H_a 4$: There is an influence of domestic mung beans prices on the volume of mung beans imports in Indonesia.
5. $H_0 5$: There is no influence of government policy on the volume of mung beans imports in Indonesia.
   $H_a 5$: There is an influence of government policy on the volume of mung beans imports in Indonesia.

RESULTS AND DISCUSSION

This study simultaneously shows that the variables of mung beans production, real import prices, exchange rates, domestic prices, and import policy *dummy*) have a significant influence on the volume of mung beans imports in Indonesia with a probability value of F statistic <statistic value 0.003956 <0.05.

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Table 1. Results of Partial Hypothesis Test (T-Test)

Varibles	Coefficient		
	B (Regression Coefficient)	T-statistic	Prob. (P-value)
Constants	235469.3	2,9483	0.0146
Production (000 ton)	-0.401875	-2,6707	0.0235
Import Price (Rp/000 ton)	-0.000145	-0.7233	0.486
Exchange rate (Rp/US$)	-9.825981	-1.6874	0.0706
Domestic Price (Rp/000 Ton)	0.002921	2,0782	0.0443
Import Policy	22372.59	1.8045	0.0398
Adj. R-Square		**0.6784**	
t-table		**1,7958**	

(Source: Primary Data)

The Influence of Mung Beans Production on the Volume of Mung Beans Imports in Indonesia

The results of the Eviews output test explain that the mung beans production **has a significant negative effect** on the volume of mung beans imports in Indonesia with a t-count of -2.6070 which is greater than the t-table of 1.7958. The probability value of 0.0235 is smaller than 0.05, therefore it is concluded that $H_0$1 is rejected and H_a1 is accepted.

This result is supported by Jafar research, (2023), which states that the production variable has a negative significant effect on the volume of soybean imports in Indonesia during the period 2002-2021. Banson et al., (2015) stated that the decrease in domestic production has led to the insufficiency of raw material supply for the domestic mung bean industry. Therefore, increasing productivity through optimization of coaching activities in central areas, providing organic fertilizers, and using superior varieties needs to be done (Atika, 2018; Fitriani & Taryono, 2022; Ministry of Agriculture, 2016).

The Effect of Real Import Prices of Mung Beans son the Volume of Mung Beans Imports in Indonesia

The results of the Eviews output regression test explain that the real import price variable of mung beans **has a negative but insignificant effect** on the volume of mung beans imports in Indonesia of -0.7233, smaller than the t-table of 1.7958. The probability value of 0.486 is greater than 0.05, thus it is concluded that $H_0$2 is accepted and H_a2 is rejected.

These results are in accordance with the law of demand, that demand has a negative relationship with the price of the goods themselves (*ceteris paribus*). The increasing price of imported products causes the demand for imports to decrease (Kartikasari & Khoirudin, 2022). International trade occurs due to price differences in trade activities, which arise from variations in production factors possessed by each country (Wulandari et al., 2023).

The Effect of the Real Rupiah Exchange Rate Against the US Dollar on the Volume of Mung Beans Imports in Indonesia

The Rupiah exchange rate against the US Dollar **has an effect but is not significant** on the volume of mung beans imports in Indonesia of -1.6874, smaller than the t-table of 1.7958, indicating that $H_0$3 is accepted and H_a3 is rejected. The real Rupiah exchange rate against the dollar has no effect on the volume of imports in Indonesia, also proven in the garlic commodity (Lastri & Anis, 2020). Field data show that imported mung beans are more competitive in quantity and price, leading the industry to prefer them for production.

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The Influence of Real Domestic Price of Mung Beans on the Volume of Mung Beans Imports in Indonesia

The real domestic price variable of mung beans **has a significant effect** on the volume of mung beans imports in Indonesia with a t-count value of 2.0782 which is greater than the t-table of 1.7958. The probability value of 0.0443 is less than 0.05, therefore it is concluded that $H_0$4 is rejected and H_a4 is accepted. Research in line, Fikri, (2022) states that the domestic price variable of soybeans has a positive and significant effect on soybean imports in Indonesia. Domestic demand for mung beans will decrease and will increase demand for imported mung beans s from abroad. This indicates that the increase in domestic prices leads many importers to seek relatively cheap beans for domestic consumption. .

The Influence of the Mung Beans Import Policy on the Volume of Mung Beans Imports in Indonesia

The results of the Eviews output regression test, explain that the import policy dummy variable has a **significant effect** on the volume of mung beans imports in Indonesia, obtaining a t-count value of 1.8045, which is greater than the t-table of 1.7958. The probability value of 0.0398 is smaller than 0.05, therefore it is concluded that H05 is rejected and Ha5 is accepted. Research in line with Mahdi & Suharno, (2019) states that soybean import tariffs have a negative effect on the volume of soybean imports in Indonesia. Prihatini, (2020) added that trade policy variables have a significant effect on import volume. The government has set an import tariff policy of 5% since 2017. This policy was implemented to control the large volume of mung beans imports.

In this study, the coefficient of determination (R^2) was calculated to measure the extent to which the regression model can explain the variation of the dependent variable (Chicco et al., 2021). Adjusted R-square is 0.6784. This value shows that the independent variables, mung beans production, real import prices, the Rupiah exchange rate against the US Dollar, domestic mung beans prices, and import policy dummy are able to explain the dependent variable of mung beans import volume by 67.84%, while the remaining 32.16% is explained by other variables not included in the equation model of this study. Mung beans production, domestic mung beans prices, and import policies have a strong influence on the volume of mung beans imports. These variables have their own roles in influencing the increase in import volume in Indonesia.

CONCLUSIONS AND SUGGESTIONS

The variables that partially affect mung beans imports are production, domestic mung beans prices, and import policies at a 95% confidence level. The Adjusted R Square value of 0.6784 means that the volume of mung beans imports in Indonesia can be explained by the independent variables (production, import prices, exchange rates, domestic prices, and import policies) of 67.84%, while the remaining 32.16% is explained by other independent variables that are not included in the model.

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