

ANALYSIS OF FACTORS AFFECTING INDONESIAN SUGAR IMPORTS FROM THAILAND BEFORE AND AFTER THE ATIGA ACCEPTANCE

I Gusti Made Krisna Arimbawa *¹

Development Economics, Udayana University
gustikrisna1503@gmail.com

Ni Luh Karmini

Development Economics, Udayana University

ABSTRACT

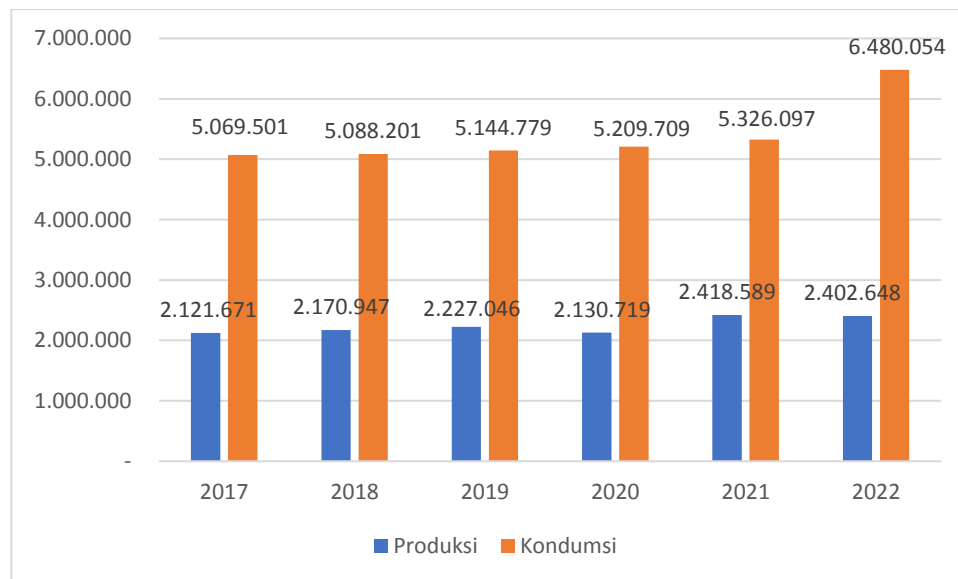
International trade has a close relationship with imports. In carrying out import activities there are price, production, consumption and exchange rate factors in a country. Apart from that, trade integration also has harmony in the occurrence of import activities by a country, especially in Indonesia, which is part of the ASEAN agreement *Trade in Goods Agreement* (ATIGA). By paying attention to the determining factors that influence imports, it will have an impact on a country's economic balance. The aim of this research is analyze the factors influencing Indonesian sugar imports from Thailand before and after the ATIGA was agreed. This research was conducted in Indonesia with 28 years of observations in the period 1995-2022. The dependent variable in this research is Indonesian sugar imports from Thailand, while the independent variables consist of domestic sugar prices, domestic sugar production, domestic sugar consumption, the rupiah exchange rate against the USD, and the ASEAN Trade in Goods Agreement (ATIGA) as a dummy variable. The data used is secondary data with a data collection method, namely non-behavioral observation. This research uses descriptive analysis techniques and multiple linear regression analysis. The results of this research show that domestic sugar prices, domestic sugar production, domestic sugar consumption, the rupiah exchange rate against the USD, and the ASEAN Trade in Goods Agreement (ATIGA) simultaneously have a significant influence on Indonesian sugar imports from Thailand. Domestic sugar prices and the ASEAN Trade in Goods Agreement (ATIGA) partially have a positive and significant effect, domestic sugar production partially has a negative and significant effect, domestic sugar consumption partially has a positive and insignificant effect, and the rupiah exchange rate against the USD partially negative and insignificant effect on Indonesian sugar imports from Thailand. The implication of this research is that the factors that influence imports are very important to pay attention to, because these factors are related to each other which will increase or decrease the value of imports themselves.

Keyword: Imports, Sugar, Indonesia From Thailand.

¹ Correspondence author

INTRODUCTION

Agricultural development is directed at increasing agricultural production to meet domestic food and industrial needs, increasing exports, increasing farmers' income, expanding employment opportunities and encouraging equal business opportunities (Herdini & Masduki 2022). The plantation subsector has a very important role in the national economy because this sector is a source of livelihood for tens of millions of Indonesian people from upstream to downstream industries (Mawardi, 2008). In Indonesia, granulated sugar is one of the basic needs and is a strategic food commodity after rice (Maria, 2009).



Source: Central Statistics Agency, 2023

Figure 1.

Indonesian Sugar Production and Consumption 2017 - 2022

Overall Indonesian sugar consumption is quite large and continues to increase in line with the increasing population in Indonesia. According to BPS, Indonesian sugar consumption in 2017 reached 5.06 million tonnes, continuing to increase until 2022 reaching 6.48 million tonnes with an average growth of 5.32 percent per year. If we look at sugar production, Indonesia will only be able to produce 2.40 million tons of sugar in 2022, which is very far compared to consumption in that year. Suwandi (2013) stated that only a few sugar factories have the capacity to process 1,200-1,500 tons of sugar cane per day and have been increased to a capacity of 3,000-3,500 tons per day. However, a number of sugar factories are having difficulty operating at capacity due to a shortage of sugar cane. The technical performance of a number of sugar factories is below international operational standards. Machines and equipment have not been regularly maintained so that optimal performance cannot be achieved, and the results have not met expectations.

According to Poli (1992), large demand without being balanced by a balanced supply will trigger an increase in prices, where according to the law of demand and supply, namely if demand is greater than supply then the price will increase, conversely if demand is smaller than supply then the price will fall . According to BPS, sugar prices from 2017 to 2022 are likely to increase. The highest sugar price in this period occurred in 2020, namely IDR 14,863 with growth of 17.83 percent. Meanwhile, international sugar prices are much cheaper with the average price in that period amounting to four thousand rupiah. Changes in domestic sugar prices that occur in the Indonesian market are one of the determining factors for the government in making decisions about importing sugar. If domestic sugar prices soar in the market, the government must import sugar so that domestic sugar prices return to stability (Zaini, 2008). The high demand for sugar is not accompanied by increased production, plus high domestic sugar prices require Indonesia to import sugar from various countries to meet consumption needs while stabilizing domestic sugar prices.

To facilitate sugar imports, Indonesia has participated in various trade integrations, one of which is the ASEAN Trade in Goods Agreement (ATIGA). At the 14th ASEAN Summit (Summit) in Cha-am Thailand on 26-27 February 2009, trade ministers from ASEAN member countries signed the ASEAN Trade in Goods Agreement (ATIGA) where ATIGA is a refinement of the Common scheme Effective Preferential Tariff for Asean Free Trade Area (CEPT for AFTA) focuses on the schedule for reducing and eliminating tariffs on trade in goods in Asean, namely to 0 percent, which is a concrete step in realizing more real economic integration through the ASEAN Economic Community (AEC). The ASEAN Trade in Goods Agreement (ATIGA) became effective on May 17 2010 after being ratified by all ASEAN member countries. Hayakawa et al. (2018) explained that ATIGA is by far the most popular regime choice after the Most Favored Nation (MFN). Of the two million transactions recorded in their data, almost 0.5 million transactions (23 percent) used ATIGA. In the CEPT scheme, ASEAN also agreed to tariff liberalization and exceptions to the Sensitive List (SL) and Highly Sensitive List (HSL) product classifications. Exemptions for agricultural products included in the Sensitive List (SL) and Highly Sensitive (HSL) will be subject to an import duty rate of 5-0 percent no later than 2010. The utilization rate of the Free Trade Area (FTA) in the agricultural sector increased dramatically between 2012 and 2018 in all ASEAN member countries, with Cambodia, Indonesia, Malaysia and Myanmar having a utilization rate of almost 40 percent, especially in the agricultural sector.

Table 1.
Sugar Imports by Country of Origin for the Period 2017–2022 (tons)

Year	Thailand	Australia	South Korea	India
	Volume			
2017	2,440,823.0	646,850.0	7,084.0	0.0
2018	4,037,528.0	922,897.0	7,190.0	0.0
2019	3,539,251.0	542,205.0	7,200.0	540.0
2020	2,027,117.0	1,214,466.0	4,742.0	619,904.1
				1,967,271.3
2021	1,033,800.0	1,331,188.0	3433.0	1,612,627.0
2022	2,418,667.0	653,559.0	4992.0	
Total	15,497,186.0	5,311,165.0	34,641.0	4,200,342.4

Source: Central Statistics Agency, 2023

The situation of Indonesian sugar imports, especially from Thailand, experienced quite significant fluctuations after the ASIAN Trade in Goods Agreement (ATIGA) was agreed. Seen in table 1. Thailand is a country in Southeast Asia which is the largest importer of sugar to Indonesia and is also part of the ATIGA agreement. According to BPS data, Indonesian sugar imports from Thailand tend to increase with total imports from 2017 to 2022 reaching 15.49 million tons., then Australia with a total of 5.31 million tons, India with a total of 4.20 million tons, and South Korea with a total of only 34.6 thousand tons. The highest growth in Indonesian sugar imports from Thailand occurred in 2017 to 2018, namely an increase of 39.5 percent, an increase of 1.59 million tons of sugar.

If it is possible for sugar imports to continue to increase, it means allowing the domestic sugar industry to experience setbacks which will cause problems for the Indonesian state, because granulated sugar is a basic necessity which has a direct influence on inflation, which is very worrying for business actors, the general public and the government. This is because in the long term, imported sugar will become a substitute for domestic granulated sugar if the price of domestic granulated sugar continues to increase and the sugar production capacity in Indonesia decreases. This change in the price of domestic sugar, which is more expensive, has caused the government to switch to imported sugar, which is cheaper and, if you look at the quantity, is able to meet Indonesia's sugar needs. The problem faced by the government is that if it imports too little sugar then prices will not be stable and if it is too large it will result in domestic sugar prices being too cheap. This will cause the sugar industry to suffer losses due to the low selling price compared to the production costs incurred (Zaini, 2008).

International trade activities, especially imports, cannot be separated from the exchange rate. The currency exchange rate or exchange rate is a very important

macroeconomic variable, because exchange rate movements can affect economic stability and activity, especially international economic transactions which include trade and investment (Mokodongan et.al 2018) . The rupiah exchange rate against the USD tends to increase every year with an average growth of 2.03 percent per year. Unstable exchange rates can have an impact on increasing prices of goods, increasing production costs, causing the economy in Indonesia to shake(Rina & Hadi, 2022).

According to research from Sari and Sudirman (2017) sPartially, production variables have a negative and significant effect on Indonesian sugar imports in 2010-2017. Partially, the domestic price variable has a positive and significant effect on Indonesian sugar imports in 2010-2017. Based on research from Aushaf et al., (2018), sugar consumption has a significant influence on sugar imports in Indonesia for the 1989-2018 period. Research conducted by Yuliadi (2008) shows that the exchange rate has a negative effect on imports. According to research from Hervino (2020), trade integration from the import side among ASEAN countries has a positive impact on the alignment of business cycles among ASEAN countries.

RESEARCH METHODS

Analyzing the factors that influence Indonesian sugar imports from Thailand before and after the ATIGA agreement is the aim of this research. The research was conducted in Indonesia with the aim of being able to study and understand more deeply the conditions of Indonesian sugar imports from Thailand and the factors that influence it so that it can provide suggestions in formulating policies or provide input in further research. In this study, the objects of research are Indonesian sugar imports from Thailand (Y), domestic sugar prices (X1), domestic sugar production (X2), domestic sugar consumption (X3), rupiah exchange rate against USD (X4), and ATIGA (X5) as a dummy variable. This research uses annual data in the form of a time series from 1995-2022 with a total number of observations of 28. Secondary data from this research comes from BPS, Bank Indonesia, Uncomtrade, and other relevant sources. Using multiple linear regression analysis techniques. Multiple linear regression equation model with model specifications as follows.

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 \mu \dots \dots \dots (1)$$

Information :

- Y = Volume of Indonesian Sugar Imports from Thailand
- α = Constant
- β1 β2 β3 β4 β5 = Coefficient of each
- X1 = Domestic Sugar Prices
- X2 = Domestic Sugar Production
- X3 = Gul Consumptiona domestic
- X4 = Exchange rateRupiah against USD

X5 = ATIGA
 μ = Nuisance variable

RESULTS AND DISCUSSION

In this study, the regression model was processed to determine the influence of the independent variables, namely domestic sugar production prices, domestic sugar production, domestic sugar consumption, and the IDR exchange rate against the USD on the dependent variable, namely the volume of Indonesian sugar imports from Thailand using SPSS (Product and Service Statistics). Solutions) version 26 for Windows. The results of multiple regression analysis are shown in Table 1 below:

Table 1.
Results of Multiple Linear Regression Analysis
Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	3349606,214	541367,765		6,187	,000
Domestic Sugar Prices	238,060	53,771	1,049	4,427	,000
Domestic Sugar Production	-1,361	,224	-,613	-6,081	,000
Domestic Sugar Consumption	,184	,106	,224	1,729	,098
Rupiah exchange rate against USD	-72,889	45,347	-,237	-1,607	,122
ATIGA	818731,572	324240,087	,382	2,525	,019

a. Dependent Variable: Indonesian Sugar Imports

Based on Table 1, the following structural equation can be formed:

$$\tilde{Y} = 3349606,214 + 238,060 X_1 - 1,361 X_2 + 0,184 X_3 - 72,889 X_4 + 818731,572 X_5 + \mu \dots \dots (2)$$

$$\text{Sig} = (0.000)(0.000)(0.098)(0.122)(0.019)$$

Table 2.
F Test Results
ANOVA^a

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	27041254081841,484	5	5408250816368,297	32,721	,000b
Residual	3636281269577,517	22	165285512253,524		
Total	30677535351419,000	27			

a. Dependent Variable: Indonesian Sugar Imports

b. Predictors: (Constant), ATIGA, Domestic Sugar Production, Rupiah Exchange Rate against USD, Domestic Sugar Consumption, Domestic Sugar Prices

In Table 2, the results obtained are $F_{count} = 32.721$ with a significance of 0.000. Because $F_{count} (32.721) > F_{table} (2.66)$ or a significance value of $0.000 < 0.05$, then H_0 is rejected and H_1 is accepted. This means that domestic sugar prices (X_1), domestic sugar production (X_2), domestic sugar consumption (X_3), and the rupiah exchange rate against USD (X_4), and ATIGA (X_5) simultaneously have a significant effect on Indonesian sugar imports. The determination value or R square (R^2) = 0.881 means that 88.1 percent of Indonesia's sugar imports are influenced by price, production, domestic consumption and the exchange rate, while the remaining 11.9 percent is influenced by other factors not included in the research variables.

Table 1 shows that domestic sugar prices (X_1) partially have a positive and significant effect on Indonesian sugar imports. The test results obtained a coefficient value of $0.000 \leq 0.05$, which means H_1 is accepted. This means that the higher the domestic sugar price will also increase Indonesian sugar imports from Thailand. Vice versa, the lower the domestic sugar price, the lower the import of Indonesian sugar from Thailand. This research is also in line with research conducted by Sari and Sudirman (2017), Domestic prices have a positive and significant effect on Indonesian sugar imports in 2010-2017. If there is a change in domestic prices, it will have an impact on changes in the quantity of imports. Imports are made if there is an increase in domestic prices.

Domestic sugar production (X_2) has a negative and significant effect on the volume of Indonesian sugar imports from Thailand before and after the ATIGA was agreed. The test results obtained a coefficient value of $0.000 \leq 0.05$, which means H_1 is accepted. This means that the higher domestic sugar production, the lower Indonesia's sugar imports from Thailand. Vice versa, the lower domestic sugar production, the higher Indonesia's sugar imports from Thailand. This is in accordance with research conducted by Widhiantara, KW, and Indrajaya, IGB (2021), namely partial production has a negative effect on sugar imports in Indonesia. This research is also in line with research from Sari, NLIP, and Sudirman, IW (2017) namely sPartially,

production variables have a negative and significant effect on Indonesian sugar imports in 2010-2017. If a country's imports of a commodity decrease then it is suspected that the country has increased production, whereas if imports of a commodity increase then it is suspected that the country has decreased production, in other words, this increase in imports is suspected to have less domestic production so it is necessary to import (Rosseti et al, 2009).

Domestic sugar consumption (X_3) has a positive and insignificant effect on the volume of Indonesian sugar imports from Thailand before and after the ATIGA was agreed. The test results obtained a coefficient value of $0.098 \geq 0.05$ which means H_0 is accepted. This shows that high or low domestic sugar consumption has no effect on Indonesian sugar imports from Thailand. This condition is not in accordance with the hypothesis put forward at the beginning of the research. However, these results are in accordance with research by Susanto and Muljaningsih (2022) which shows that national sugar consumption does not have a significant effect on sugar imports in Indonesia. This research is also in line with research conducted by Rusdi and Wahed (2021), where the Sugar Consumption variable did not have a significant effect on Indonesian sugar imports 2002-2019. The research results are also in line with research conducted by Wiranata (2014) which shows that national sugar consumption does not have a significant influence on sugar imports. The increase in sugar consumption in Indonesia is due to the increasing population, per capita income, and the growth of industries that use sugar as a raw material (Directorate General of Agriculture, 2021). However, this use cannot be used as a reference considering that there is still a large amount of sugar consumed which is not used according to its needs.

The rupiah exchange rate against the USD (X_4) had a negative and insignificant effect on the volume of Indonesian sugar imports from Thailand before and after the ATIGA was agreed. The test results obtained a coefficient value of $0.122 \geq 0.05$, which means H_0 is accepted. This shows that high or low the rupiah exchange rate against the USD has no effect on Indonesian sugar imports from Thailand. This condition is not in accordance with the hypothesis put forward at the beginning of the research. However, these results are in accordance with research by Susanto and Muljaningsih (2022), the exchange rate does not have a significant effect on sugar imports in Indonesia. This explains that increases or decreases in the exchange rate do not significantly affect sugar imports in Indonesia.

ATIGA as a dummy variable (X_5) has a positive and significant effect on Indonesian sugar imports. The test results obtained a coefficient value of $0.019 \leq 0.05$, which means H_1 is accepted. This shows that the implementation of the ASEAN Trade in Goods Agreement (ATIGA) has had a real impact on Indonesian sugar imports from Thailand. This research is in accordance with research by Hervino, AD (2020), that trade integration from the import side among ASEAN countries has an impact. positive for the alignment of the business cycle between ASEAN countries. This is also in line

with the book entitled Impact of the ATIGA on Intra-ASEAN, namely that the level of utilization of the Free Trade Area (FTA) in the agricultural sector increased dramatically between 2012 and 2018 in all ASEAN member countries, namely Cambodia, Indonesia, Malaysia and Myanmar. has a utilization rate of almost 40% especially in the agricultural sector. Of course this will provide significant changes to ASEAN member countries.

CONCLUSIONS AND SUGGESTIONS

From this research it can be concluded that Domestic sugar prices, domestic sugar production, domestic sugar consumption, the rupiah exchange rate against the USD, and the ASEAN Trades in Goods Agreement (ATIGA) simultaneously have a significant influence on Indonesian sugar imports from Thailand. Domestic sugar prices and the ASEAN Trades in Goods Agreement (ATIGA) partially have a positive and significant effect on Indonesian sugar imports from Thailand. Domestic sugar production partially has a negative and significant effect on Indonesian sugar imports from Thailand. Domestic sugar consumption partially has a positive and insignificant effect on Indonesian sugar imports from Thailand. The rupiah exchange rate against the USD partially has a negative and insignificant effect on Indonesian sugar imports from Thailand.

Based on the analysis and conclusions presented, the researchers put forward suggestions that are expected to increase domestic sugar production by prioritizing domestic production for distribution to public consumption and sugar factories, without prejudice to the quality of the sugar itself. So it is also important for sugar factories to improve the quality and quantity so that sugar cane harvests are maximized and the role of the Indonesian government in supporting local farmers so that they can produce sugar cane more optimally and dependence on sugar imports from other countries can be minimized. The Indonesian government and related parties must be able to optimize domestic sugar prices to at least approach international sugar prices in order to reduce imports of Indonesian sugar, especially from Thailand. The import duty policy for imported sugar is very necessary to protect the ongoing trade liberalization and the need for efforts to stabilize domestic sugar prices by taking firm action against parties who manipulate the price of sugar on the Indonesian market with existing regulations. Indonesia and related parties are expected to review the sugar import policy, especially addressing trade integration in the ASEAN region so that there is no domestic sugar industry, because trade integration in the ASEAN region will bring changes to the import order and conditions of Indonesian sugar.

REFERENCE

- Dinh, C. N., & Hayakawa, K. (2022). The substitution effect of preferential tariffs on non-tariff measures: evidence from Vietnam. IDE Discussion Paper, 865.
- Herdini, FL, & Masduki, M. (2021). Development of post-harvest handling through agricultural institutions as an agricultural and rural development effort. *Community and Village Empowerment Bulletin*, 1(1), 32-37.
- Hervino, AD (2020). Trade Integration and Business Cycle Alignment in ASEAN. *Udayana University Journal of Economics and Business*, 13(02), 211-356
- Maria. 2009. "Analysis of Sugar Trading Policy on the Availability and Domestic Price of Granulated Sugar in Indonesia". Paper presented at the National Seminar, Department of Agriculture, Bogor, 14 October.
- Nishimura, Hidetosi. (2021). Impact of the ATIGA on Intra-ASEAN Trade. Jakarta: Economic Research Institute for ASEAN and EAST Asia
- Rosseti, MD, RR Hill, B. Johansson, A. Dunkin and RG Ingals. 2009. Economic Evaluation Of The Increase In Production Capacity Of A High Technology Products Manufacturing Cell Using Discrete Event Simulation. *IEEE*. Vol 1 No. 7 : 2185-2196.
- Rusdi, H., Primandhana, WP, & Wahed, M. (2021). Analysis of Factors Affecting Sugar Imports in Indonesia. *Journal of Syntax Admiration*, 2(8), 1461-1479.
- Safrida, S., Sofyan, S., & Taufani, A. (2020). The impact of sugar imports on sugar cane production and domestic sugar prices in Indonesia. *Agricore: Unpad Journal of Agribusiness and Agricultural Socioeconomics*, 5(1).
- Sari, NLIP, & Sudirman, IW (2017). The Influence of Production, Per Capita Consumption, Domestic Prices and International Prices on the Volume of Indonesian Sugar Imports. *Unud EP E-Journal*, 10(3), 1301-1330.
- Sentosa, SU, & Akbar, UU (2020). Effects of Nominal Exchange Rates and Domestic Outputs on Imports (Analysis of national food security commodities in ASEAN Countries). In 4th Padang International Conference on Education, Economics, Business and Accounting (PICEEBA-2 2019) (pp. 268-275). Atlantis Press.
- Song, B., Marchant, M.A., Reed, M.R., & Xu, S. (2009). Competitive analysis and market power of China's soybean import market. *International Food and Agribusiness Management Review*, 12(1030-2016-82749), 21-42.
- Sutanto, RA, & Muljaningsih, S. (2022). Analysis of factors influencing sugar imports in Indonesia. *PERFORMANCE*, 19(1), 29-36.
- Suwandi, A. (2013, December). Indonesian Sugar Self-Sufficiency. In *New Directions. Seminar Paper on New Directions for National Sugar Policy* (Vol. 12).
- Widhiantara, KW, & Indrajaya, IGB (2021). Analysis of the Influence of Production, Consumption and GDP on the Volume of Indonesian Granulated Sugar Imports 2010-2019. *EP Unud E-Journal*, 11[02] : 587-616
- Wiranata, YS (2014). Factors influencing sugar imports in Indonesia in 1980-2010. *Economics Development Analysis Journal*, 3(4).
- Zaini, A. (2008). The Influence of Imported Sugar Prices, Domestic Sugar Prices, and Domestic Sugar Production on the Demand for Imported Sugar in Indonesia. *J. EPP*, 5(2), 1-9.