

THE EFFECT OF GROSS DOMESTIC PRODUCT AND EXCHANGE RATE ON THE VOLUME OF BEEF IMPORTS FROM AUSTRALIA, INDIA, AND THE UNITED STATES IN INDONESIA FROM 2013 TO 2022

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ABSTRACT

This research was conducted because the volume of beef imports from Australia, India, the United States tends to increase the most compared to other countries. The increase in demand that is not offset by domestic beef production results in the Government having to import beef from abroad, especially at most in 3 countries Australia, India, the United States. Based on this, researchers want to know the effect of Gross Domestic Product (GDP) and Exchange Rate on the Volume of Beef Imports of Australia, India, the United States both simultaneously and partially. The method used is quantitative research with data sources originating from the second party (secondary) in the form of panel data and processed using Eviews9 software.. The results of the F test can be known simultaneously The volume of the IMP is affected by GDP and Exchange Rate. The results of the t test can be seen partially, IMP is only influenced by GDP.

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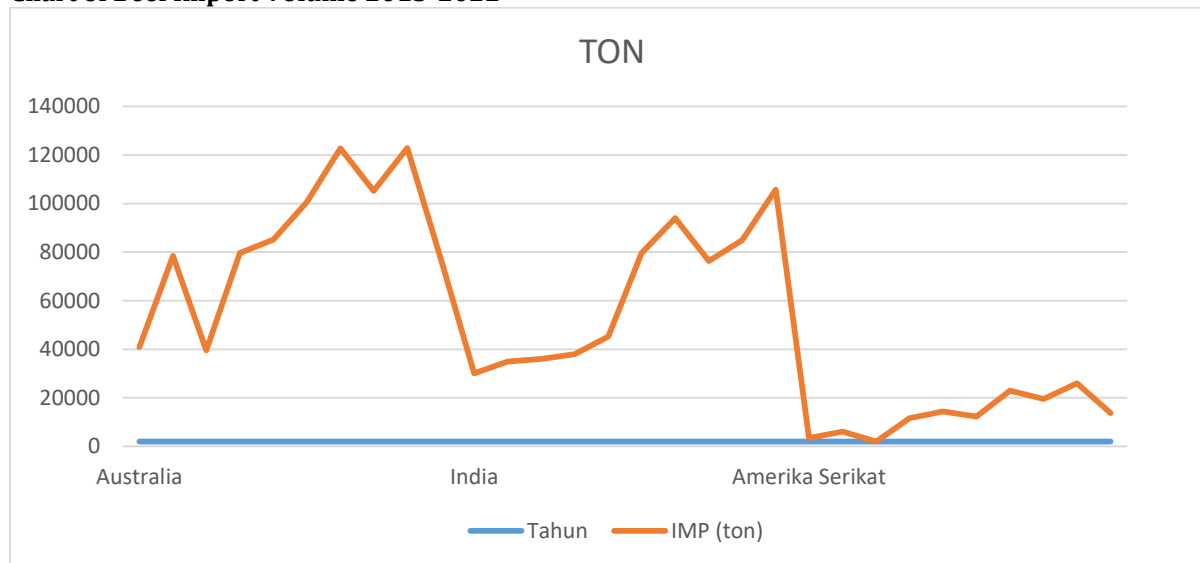
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1. INTRODUCTION

Human Resources is one of the important components in building a better civilization. Quality Human Resources, both physically and spiritually support the movement towards a better civilization [1]. Natural resources and human resources are closely related. Then, the problem faced by Indonesia is that dependence on food imports is now increasingly concerning. Food imports are still happening and the volume is increasing. Along with the increasing Indonesians' understanding of the value of animal protein for health and intelligence, the need for meat, especially beef, is increasing [2]. Meat is a food that is very beneficial for society because it contains many substances needed by humans. The availability of imported and local beef is closely related to national food security. Thus the needs of the domestic market are not met, then meat imports can be a solution to maintain the availability of the domestic market. Other factors influencing meat import policy include international trade policy.

International economic activity i.e. trade has become a basic institution in the world [3]. Foreign trade is trade carried out by residents between countries that are limited by mutually agreed regulations so as to give birth to export and import activities [4]. International trade without state control and intervention limits the authority of a state to govern its people. International trade which includes exports and imports can realize national development [5]. Both Export and Import activities have their own benefits. With more imports than exports, it certainly indicates that Indonesia is still unable to meet the needs of goods and services from within the country, including consumer goods [6]. Each country's notion of international trade has limitations in terms of natural resources, human resources, and technology. As a result, the resources available in the country cannot meet all of society's needs. As a result, in order to meet the demands of their populations, every country in the world must engage with other countries, one of which is through commerce [7].

Chart of Beef Import Volume 2013-2022



Data Source : BPS (Data Processing)

From the graph, it is known that there are fluctuations in demand for beef imports which can be seen from the amount or volume imported per each transaction, in the first transaction it was seen in Australia's import volume in 2013 of 40,881.60 tons but in the next import it rose by 78,409.60 tons, then fell to 39,531.20 tons, and rose again to 79,630.60 tons in the next import in 2021 experienced a high increase of 122,863.50 tons. The volume of beef imports in India was the highest import volume reaching 105,756, for the lowest import volume transaction reached 45,192.00 tons, the next import volume fluctuated. Import volume in the United States experienced fluctuations or ups and downs in meat import volume, in the first transaction 3,488.40 tons, then up 6,015.60 tons, then down again by 1,950.10 tons, the highest beef import volume of 25,961.00 tons. So during 2013-2022 although it fluctuates, it tends to increase. The increase in the volume of beef imports can be influenced by several factors such as GDP.

Import is the expenditure of an item for a good from abroad, therefore imports are very dependent on GDP, because GDP is one source of import financing [8] Economic growth, as a measure of a country's economic development, illustrates the increase in the production of products and services in an economic region over a given time period. Production is quantified in terms of the idea of value added created by the economic sectors in the region in question, which is known as Gross Domestic Product (GDP) in total [9]. Based on the GDP of Australia, India, the United States 2013-2022 tends to fluctuate in Australia and India, while Australia increases. This increase is influenced by the volume of imports which is one of the benchmarks that can be used to increase the development of the regional economic sector, namely economic growth. GDP growth also plays a strong role in the development of a country's economy to show the country's ability in international trade and import activities in particular. Changes in state income affect imports, that is, the higher the income, the higher the demand for imports and vice versa, the lower the income of the country, the lower the demand for imports made.

Individuals who participate in the foreign exchange market are based on several reasons including to purchase goods and services from other countries [10]. The currency of the United States (USDollar) has become the world's reference for transactions due to the large number of countries that have used it. When transacting, people usually receive money that is easier to transact so there is no need to be complicated to exchange it. The first reason the dollar is utilized as an international currency is because of its relatively stable movement; the dollar would not play such a vital part in the world economy if the United States did not have the highest GDP [11]. The stability of the rupiah exchange rate against international currencies indicates a country's economic stability. Because the rupiah exchange rate against the US dollar is variable, knowing the predicted rupiah exchange rate against the US dollar for the future would be useful. This seeks to make decisions based on fluctuations in the rupiah's exchange rate against the US dollar [12]. This fluctuation in import value was also followed by movements in beef import volumes in Australia, India, and the United States. By The description, can be known if foreign

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currency is higher than domestic money. Then the domestic currency strengthens, otherwise if the foreign currency is lower than the domestic currency, then the domestic currency weakens.

Research Yusril Ihza (2017)[13] GDP and exchange rate variables have a positive and significant effect on beef imports. Next research according to Wirdajati & Ali (2022) [14] Shows that exchange rate variables have a negative and insignificant effect on imports of telecommunication products at a significance level of α 0.05 during the period 2002 to 2019. According to Aryan (2021)[15] The exchange rate has a negative and insignificant effect on beef imports in Indonesia.

Literature Review

International Trade

The benefits and advantages of international trade are being able to specialize in producing cheap and competitive goods and services, enabling export activities that ultimately increase state revenues, foreign exchange reserves, capital transactions and breadth of employment opportunities [16]. The explanation confirms that the existence of international trade and global competition causes domestic companies to get tougher competition from foreign companies, where each country can export its products to various countries and import to meet its needs from other countries [17]. According to what the research conveyed to both parties, the benefits of international trade essentially have a positive impact, while for global competition, the preparation that must be faced is that human resources pay more attention to their performance.

Import

Importing is the activity of buying goods or services from other countries for use or sale within the country. The import process involves purchasing products or services from abroad to fulfill domestic needs that cannot be adequately produced or obtained within the country [18]. This understanding means that import activities mean involving two countries. Based on Law Number 10 of 1995 concerning Customs, which states that import is the activity of bringing products into the customs zones or the process of entering goods from other countries into the country. Import activities are closely related to a country's economy and closely related to export activities to increase the country's visa income. However, to protect domestic producers and develop local products, usually a country limits the amount or quota of imported goods from abroad [19]. Therefore, there are positive and negative impacts of import activities on the economy and society.

Gross Domestic Product

GDP is the total value of all goods and services produced by a country in a given period of time, usually one year. GDP includes all economic activity within a country, whether performed by citizens or foreigners living in the country [20]. As the economy expands, companies may need to hire more people to meet growing demand. Conversely, a decline in GDP can result in layoffs and job reductions. GDP growth can have a positive impact on government revenues from taxes and other revenues. Higher taxes from growing economic activity can give governments more resources to fund public services, infrastructure projects, and social programs. However, GDP can fluctuate because economies tend to experience business cycles consisting of periods of expansion and contraction. In times of expansion, economic activity and production increase, resulting in an increase in GDP. So in a contraction phase, economic activity slows down, causing a decline in GDP such as when changes in investment levels from the private and public sectors can impact production and national income. High investment can boost economic growth, while a decrease in investment can cause a slowdown

Exchange Rate

Decreasing and increasing exchange rates will increase or decrease international trade. The rupiah exchange rate is the value of foreign money against the value of domestic money[21]. Therefore, the exchange rate is the conversion of one Rupiah currency to another country's currency. The exchange rate as one of the indicators that affect the activity of stocks and financial markets is caused by the prudence of investors in investing. Changes in exchange rates affect the characteristics of exchange rate fluctuations and their impact on the open economy [22].

2. METHOD

Data sources are obtained from the Central Statistics Agency (BPS), Bank Indonesia, scientific journals, and other literature related to this research topic. Panel data analysis using Eviews 10 software includes, Common Effect Model, Fixed Effect Model and Random Effect Model and test model selection

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includes Chow Test, Hausman Test and Lagrange Multiplier Test. Data comes from 3 countries which include: Australia, India, America in Indonesia in 2013-2022. In this study, the dependent variable is beef import volume while the independent variables consist of GDP and exchange rate.

Import volume is the amount of goods or products imported by a country of a certain period of time. Exchange Rate is the exchange rate of currency against payments between two currencies of each country Gross Domestic Product is a measure of the total value of all goods and services produced in a country during a certain period for which the formulation of the enometric model or estimator model is;

$$IMP_{it} = \beta_0 + \beta_1 GDP_{it} + \beta_2 KURS_{it} + e$$

Information:

IMP	: Volume of beef imports
GDP	: Gross Domestic Product
KURS	: Exchange rate
β_0	: Constant/intercept
β_1	: GDP coefficient
β_2	: Exchange rate coefficient
i	: Every country
t	: Year
e	: Term error

3. RESULT AND DISCUSSION

The outcomes derived from estimating the econometric model mentioned earlier, employing the Common Effect Model (CEM), Fixed Effect Model (FEM), and Random Effect Model (REM), are condensed in Table 1, together with the findings from the model selection test

Table 1. Results of Panel Data Regression Econometric Model Estimation

Variabele	Regression Coefficient		
	CEM	FEM	REM
C	80563.11	117636.4	80563.11
KURS	0.304208	6.03E-06	-3.45E-06
GDP	-3.45E-06	-11.60211	0.304208
R2	0.706044	0.764635	0.706044
Adjusted. R2	0.680483	0.719803	0.680483
F -Statistics	27.62153	17.05574	27.62153
Prob. F-Statistics	0.000001	0.000002	0.000001

Model Selection Test

(1) Chow

Cross-section $F(2, 21) = 5.779539$; prob. $F(2, 21) = 0.0556$

(2) Hausman

Random cross section $\chi^2(2) = 2705.235735$; Prob. $\chi^2 = 0.000$

Source: in processed

According to Table 1, both the Chow Test and Hausman Test indicate that the Random Effect Model (REM) stands out as the most suitable estimation model. This determination is based on empirical statistics, specifically the probability (or significance) F and the χ^2 statistics in the REM model, which register at 0.000001 (<0.10), suggesting strong significance. For a comprehensive overview of the REM estimation results, they are detailed in both Table 2 and Table 3.

Table 2 Random Effect Model (REM) Estimation Model

$= 80563.11 - 0.00000345 + 0.304208$
(0, 000) ** (0.7 826)
$R^2 = 0.706044$; $DW = 0.980103$; $F = 27.62153$; $ProbF = 0.000001$

Source: The data is processed.

Description: *Significant at = 0.01; **Significant at = 0.05; ***Significant at = 0.10. The number in parentheses is the probability of the statistical value t .

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The F test is performed to determine the effect of the independent variable on the dependent in a simultaneous or joint way. The H0 F test is $\beta_i = 0$ ($i = 1-2$) or together GDP and KURS have an effect on the H0 IMP rejected if the F-statistic probability is $<$

Based on the findings in Table 2, the statistical F probability value of 0.000001 (<0.010) rejects the null hypothesis (H0). Therefore, it can be concluded that Gross Domestic Product (GDP) and Exchange Rate (KURS) indeed exert a significant impact on the Volume of Imported Beef (IMP). The R-squared (R^2) value measures the proportion of the dependent variable explained by the independent variables in the model. In this case, the adjusted R^2 value of 0.680483 or 68.04% reveals that the explanatory power of GDP and Exchange Rate regarding changes in Imported Beef Volume is limited to 68.04%. This implies that approximately 31.96% of the changes in Imported Beef Volume are attributed to other variables beyond those considered in the study.

Table 3. Test the Validity of the Results of the Influence of the Independent Variable

Variable	Prob.t	Criterion	Conclusion
GDP	0.0000	< 0.10	significant at 0.10
Exchange rate	0.7826	> 0.10	insignificant at 0.10

Source : Data processed

The t test performed to know is that each independent variable has a real influence on the dependent variable assuming the other variables remain constant. The H0 t test is $= 0$ ($i = 1-2$) or individually Gross Domestic Product (GDP) And Exchange Rate (KURS) have no effect on the volume of beef imports (IMP) While the H A t test is < 0 ($i = 1-2$) or by means of an individual's Gross Domestic Product (GDP) And Exchange Rate (RATE) affects the Volume of Beef Imported Beef (IMP) H0 is accepted if the statistical t-probability $>$ and H0 are rejected if the statistical t-probability is $<$.

Based on Table 3. It is known that the variable that has probability t - statistically $< (0.10)$ is the variable GDP. Thus, the portion or volume of beef imports of similar cattle (IMP) according to GDP. GDP itself marks a regression coefficient of - 0.00000345 with a linear-linear relationship pattern This means that if GDP increases by one dollar it will reduce the volume of beef imports (IMP) by - 0.00000345 % Conversely, if GDP decreases by one dollar it will increase the volume of beef imports (IMP) by 0.00000345 % While the Exchange Rate (KURS) by partial or individual means does not affect the volume of beef imports (IMP).

The results of the study of variables GDP and KURS values have a significant effect on the import volume of beef breeds of cattle from Australia, India, the United States 2013-2022. This is in line with Anggiani (2020) [23] GDP and Exchange Rate have a significant effect on the volume of beef imports in Indonesia. According to Fahmi [24] Gross domestic product, inflation rate and rupiah exchange rate affect variations in the dependent variable of import value or have a significant effect on the amount of import value of Indonesia. The statement given in Miftakhul's (2021) study [25] shows that GDP and the rupiah exchange rate simultaneously have a significant influence and part of GDP affects the volume of beef imports in Indonesia. The study was conducted to determine the existence of two variables, namely GDP and Rupiah Exchange Rate against related variables, in the form of Beef Import Volume in Indonesia. This can be interpreted that economic activities that affect the increase in GDP result in an increase in beef consumption, but domestic production has not been able to meet so the government must import this type of clay meat which aims to meet the needs of this type of beef in the country.

Based on the results of this study, GDP has a significant effect on the volume of beef imports. This is in line with research according to Syahputra (2021) [26] Test partial significance in this study, gross domestic product affects imports of capital goods both in the short and long term. According to Sihotang's research (2020) [27] real GDP has a positive and significant effect on Indonesia's imports is acceptable. Meanwhile, according to Ibrahim (2021) [28] Gross Domestic Product per capita does not have a positive effect and has a significant effect on imports. This can mean that if GDP increases, people's purchasing power is greater. A country carries out import activities because of the low ability of a country to produce production and consumption.

The t-test calculation shows that part of the rupiah exchange rate has no significant effect on the volume of beef imports. Fan (2018) [29] Yang said that when the value of a country's currency appreciates, it will expand import activities, because the price of imported goods becomes cheaper. Research Results according to Florentina (2019) [30]. The variable exchange rate of US\$ - IDR has a negative and insignificant effect on the volume of imports in Indonesia. While similar research according

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to Maria Pangestika (2019) [31] shows that the exchange rate of the Rupiah against the US \$ does not affect the volume of imports. This research shows that when the rupiah exchange rate strengthens, there will be an increase in import volume. The meat import policy carried out by the government to control meat prices in Indonesia is quite high because if imports are not carried out it will cause a scarcity of meat supply in Indonesia. this can lead to high meat prices in the market, uncontrolled meat increases can lead to inflation in Indonesia.

4. CONCLUSION

Based on research that has been conducted on the effect of GDP and Exchange Rate on the Import Volume of Australian, Indian, United States Beef Types in 2013-2022 using panel data regression analysis, it can be concluded that: GDP and Exchange Rate simultaneously have a significant effect on the Import Volume of Cattle in Australia, India, the United States. In part, GDP has a positive and significant influence on the Import Volume of Beef Imports of Australia, India, the United States, and partly the Exchange Rate has no significant effect on the Import Volume of Beef Imports of Australia, India, the United States.

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