

## The Impact of Rice Import Policy on Community Economic Welfare in East Java



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**ABSTRACT:** This study aims to identify policies, levels of imports, production and consumption in East Java, to analyze the impact of rice import tariff policies on production and consumption and also the community welfare changes in East Java. The data that used in this study are secondary data from the Central Statistics Agency (BPS), BULOG, and other research. The method of analysis uses the 2SLS simultaneous equation and the economic surplus simulation. The results showed that from 2004 to 2018, East Java always had a higher rice production rate than the consumption, but still continued to do rice import to maintain price stabilization. The simulation of a tariff increase causes an increase in production and a decrease in consumption, and vice versa. Liberalization of the rice trade (tariff exemption) has led to greater economic welfare, but from a distribution point of view, producers receive a smaller surplus than consumers, which means that the benefit distribution aspect of government policies is not realized, so the government must pay more attention to producer surpluses and consumer surpluses without much disadvantage one of the parties.

**KEYWORDS:** Import tariff policy, producer surplus, consumer surplus, economic welfare.

### I. INTRODUCTION

Indonesia is the fourth most populous country in the world, with 272,004,902 people or 3.53% of the world's population. Indonesia is also an agricultural country where agriculture is a sector that plays an important role in the economy, this is evidenced by data from BPS (2018) that 29.63% of the Indonesian population chooses Agriculture, Plantation, Forestry, Hunting, and Fisheries sectors as the main employment. Indonesia is also the third-largest rice producer in the world after China and India with rice production reaching 81 million tons in 2017 or if converted into rice it will be 42 million tons of rice in one year. The results of the Study on Consumption of Staples (BPS, 2017) show that the level of rice consumption in Indonesia tends to be stable, on average, rice consumption per capita per day from 2011 to 2017 is around 3 ounces per day per person [1].

Indonesia is the world's third rice importer after the Philippines and China. Indonesia's rice imports come from three main countries, namely Vietnam, Thailand, and India. Rice imports in Indonesia from 2009 to 2018 fluctuated both in terms of volume and value of imports, the highest volume of rice imports ever occurred in 2011 with a figure of 2.75 million tons. To protect domestic rice producers, the government implements a tariff policy for every rice imported into Indonesia. The rice import tariff itself is regulated by the Minister of Finance Regulation (PMK) No. 6 of 2017 by imposing a tariff of Rp 450/kg for all types of rice imported into Indonesia [2].

The largest rice producer in Indonesia is East Java Province. In 2018, it is known that the three provinces with the highest rice production occurred in East Java, West Java, and Central Java with productions of 10.54 million tons, 9.54 million tons, and 9.51 million tons, respectively. The total production of East Java contributes 18.64 % of the total rice production in Indonesia, this shows that East Java's rice production plays an important role in achieving the national rice self-sufficiency program. Meanwhile, consumption in East Java is quite volatile and tends to decrease every year so that there is always a rice surplus. The existence of a quota of national imports that enter the East Java region will certainly have an impact on production and consumption in East Java, with the government's tariff policy of Rp. 450 consumer surplus and producer surplus. Therefore, it is important to research the impact of import policies on the economic welfare of the people in East Java. The objectives of this research are: (1) to identify the level of imports and national rice import policies as well as the level of production and consumption in East Java; (2) Analyzing

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the impact of rice import tariff policies on rice production and consumption in East Java; (3) Analyzing the impact of the rice import tariff policy on changes in people's welfare in East Java.

### II. REVIEW LITERATUR

#### A. Imports

Imports are the entry of goods from abroad which are basically carried out to meet domestic needs for goods that have not been produced or are not sufficiently produced domestically. From year to year, the composition of imports has shifted so that in the end it has a large weight on raw materials, auxiliary materials, and capital materials. In general, the direction taken in establishing the mechanism for imported goods is to maintain balance and maintain smooth transactions between goods. Controlling import demand in an effort to utilize the foreign exchange to support domestic business and industry and improve the quality of domestic production

#### B. Welfare

The level of welfare can be defined as an aggregate condition of individual satisfaction. This basic understanding leads to a complex understanding which is divided into two arenas of debate. The first is what the scope of the welfare substance is, the second is how the intensity of the substance can be represented in the aggregate.

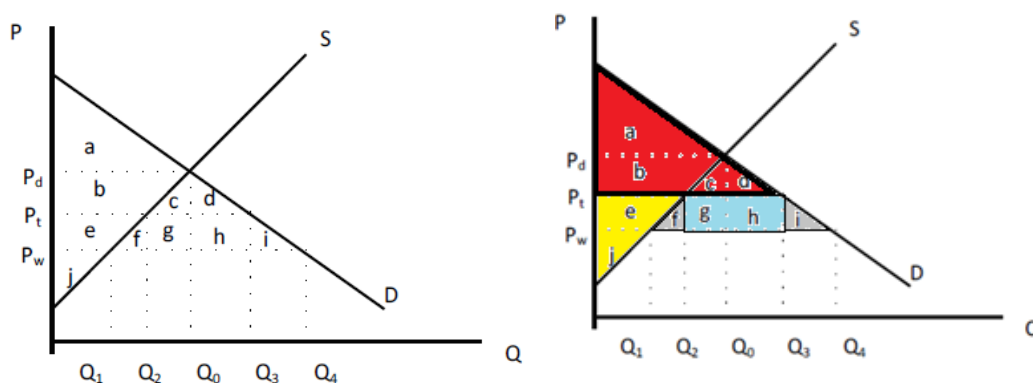
Welfare is a number of satisfactions obtained by a person from the results of consuming the income received, but the level of welfare itself is something that is relative because it depends on the amount of satisfaction obtained from the results of consuming the income. The relationship between the concept of welfare and the concept of needs is that when these needs are met, a person is considered prosperous because the level of these needs is indirectly in line with the welfare indicators.

### III. RESEARCH METHODS

This research was conducted by selecting East Java Province as the location under study based on the consideration that the province is the largest rice producer in Indonesia. The data were taken in this study from 2004 to 2018. The data analysis method used by the research objectives. for the first purpose on the analysis of Production, Consumption and Import Levels using descriptive analysis. For the second purpose of analyzing the impact of rice import tariff policies on rice production and consumption in East Java, the 2SLS simulates regression test analysis is used to obtain the elasticity of demand and supply. For the third purpose of analyzing the impact of rice import tariffs on changes in people's welfare, it is analyzed using the calculation of producer surplus, consumer surplus, government revenue, and net welfare. This paper analyzes the impact of the rice import tariff policy using the following two policy scenarios:

- 1) Scenario 1 where the rice import tariff is reduced from Rp. 450 per kg to Rp. 200 per kg.
- 2) Scenario 2 with an increase in rice import tariffs from Rp. 450 per kg to Rp. 700 per kg.

Graphically, the comparative static impact of the imposition of rice import tariffs on people's welfare is presented in the image below:



Sumber : Ellis, 1992

### IV. RESULT AND DISCUSSION

#### A. Rice Production, Consumption and Import Levels in East Java

The average rice production in East Java in 2004-2018 was around 5.3 million tons per year, but if you look at it in more detail, rice production tends to increase. Ishaq's research (2017) states that production in East Java is influenced by the increase in land area. In addition, the conversion rate also determines the size of the amount of rice produced. While the average consumption in East

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Java is 3.5 million tons, the rate of change in rice consumption in East Java in 2004-2018 is fairly volatile but tends to decrease, from this it is known that East Java Province experiences a rice surplus of around 2 million tons annually, however, East Java still gets an import share of the total national imports which is quite large. The largest imports into East Java occurred in 2018, which was 646,710 tons, the rest of the imports were very volatile. This happens because the import decision is made by the central government by considering triggers; rice stocks are too small, rice prices have increased by 10%, estimated production forecasts for 6 months, and other factors [3].

Considering a large number of incoming imports, in the Minister of Finance Regulation No.93/PMK.011/2007 the government set a policy of rice import tariffs of Rp. 450/kg to protect domestic rice production. The import decision itself has pros and cons from various parties, the rice import policy is not in accordance with the food law which states that food imports can only be carried out if domestic food production is insufficient and/or cannot be produced domestically [4]. If you look at the production which always experiences a surplus, then there should be no need to import rice. Even so, it is known that rice is also a political commodity. [5] states that import decisions in Indonesia are carried out by the interests of various parties, resulting in a decision to import which will only benefit the strongest party and harm the community. The application of tariffs aimed at inhibiting the entry of imported rice is indeed needed, but the government needs to pay more attention to decisions taken without bringing personal interests so that there are no regulations or policies that conflict with conditions in society.

### B. Impact of Import Policy on Production and Consumption in East Java

Simultaneous equation analysis using 2SLS in this study needs to be done to get the elasticity of demand and supply which will be used in the subsequent simulation calculations. The elasticity value can be seen from the price coefficients in Table 1 and Table 2. From these calculations, it is obtained that the demand elasticity value is -0.268 and the supply elasticity value is 0.003. Validation of the model is done by calculating the RMSPE and U-Theils values, the results of the RMSPE DEMAND and SUPPLY equations are 0.331 and 0.095, respectively, while the U-Theils values are 0.012 and 0.003 which means that the simulation results are close to the actual results.

**Table 1. Estimation Results of Rice Demand Parameters**

Coefficients						
		Unstandardized Coefficients		Beta	t	Sig.
		B	Std. Error			
Equation 1	(Constant)	23.485	4.029		5.828	.000
	Ln_X1	-.268	.162	-1.032	-1.649	.130
	Ln_X2	.157	.093	1.273	1.685	.123
	Ln_X3	-.246	.102	-1.143	-2.404	.037
	Ln_X4	-.381	.236	-.404	-1.614	.138

Source: BPS data processed

**Table 2. Estimation Results of Rice Supply Parameters**

Coefficients						
		Unstandardized Coefficients		Beta	t	Sig.
		B	Std. Error			
Equation 1	(Constant)	1.970	.939		2.098	.062
	Ln_X1	.003	.022	.007	.118	.908
	Ln_X5	.835	.069	.766	12.013	.000
	Ln_X6	.032	.007	.238	4.824	.001
	Ln_X7	.023	.004	.298	5.801	.000

Source: BPS data processed

Furthermore, a simulation is carried out using two scenarios, namely, reducing the import tariff of rice to Rp. 200/kg (simulation 1), increasing the tariff from Rp. 450 to Rp. 700/kg (simulation 2) which aims to determine the impact of changes in import tariffs on production and consumption. So that we get the result that in the additional production variable whose purpose is to find out changes in production, it is found that the reduction in tariffs becomes Rp. 200 in simulation 1, will result in a decrease in the production of 693 tons or 0.0001144 percent of the original production so that the initial production of 6.053 million tons decreased to 6.052 million tons. On the other hand, if the rate increases to Rp. 700 in simulation 2, production will increase by

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693 tons by 0.0001144 percent from the original production so that the initial production of 6.053 million tons has increased to 6.054 million tons.

The amount of consumption at the basic tariff is 3.30 million tons, based on the calculations carried out according to the instrument in the table, it is found that if the tariff is lowered, there will be an increase in consumption by the community by 33,804 tons or 0.010227 percent, so that the initial consumption by 3.30 million tons will increase to 3.33 million tons, on the contrary, if the tariff is increased, there will be a decrease in consumption by 33,804 tons or 0.010227 percent of the original consumption so that consumers will be 3.27 million tons. These calculations can be seen in the following table:

**Table 3. Results of Calculation of Consumption and Production after Tariffs**

Variable	Based Value	Simulation 1	Simulation 2
CIF Price (Rp)	6,551	6,551	6,551
Tariff (Rp)	450	200	700
Price of rice (Rp)	7,939	7,689	8,189
Rice Consumption (Tons)	3,305,264	3,305,264	3,305,264
Rice Production (Tons)	6,053,467	6,053,467	6,053,467
Rice Imports (Tons)	646,710	646,710	646,710
Elasticity of demand	-0.268	-0.268	-0.268
Supply elasticity	0.003	0.003	0.003
Rice price increase with new tariff	0	-250	250
Increase in production (Tons)	0	-693	693
Lost consumption (Tons)	0	33,804	-33,804
Production after import tariffs	6,053,467	6,052,774	6,054,160
Consumption after import tariff	3,305,264	3,339,069	3,271,460
Import after Import rate	646,710	681,207	612,213

Source: BPS data processed

### C. Impact of Import Policy on Community Welfare in East Java

The rice import tariff policy set by the government will affect producer surplus, consumer surplus, government revenue and society as a whole. An analysis of the impact of import tariff policies on producers, consumers, government and public welfare can be seen in Table 4. Theoretically, according to [6] a reduction in rice import tariffs will reduce the retail price of rice in the market, and vice versa, increasing import tariffs will increase prices. Rice retail in the market. If the rice import tariff policy is lowered from simulation 1, it will result in an increase in consumer surplus of Rp. 830 Billion. On the other hand, if the government increases the rice import tariff, as can be seen in simulation 2, it will result in a decrease in the consumer surplus of Rp. 822 Billion.

**Table 4. Calculation of Surplus Producers, Consumers and Community Welfare**

Variable	Based Value	Simulation 1	Simulation 2
Changes in consumer surplus (Rp.000)	0	830,541,584	-822,090,481
Change in producer surplus (Rp.000)	0	-1,513,280,120	1,513,453,380
Government revenue from tariffs (Rp.000)	291,019,500	136,241,490	428,548,785
Net welfare effect (Rp.000)	291,019,500	818,980,026	-262,814,114

Source: BPS data processed

Based on the rice import tariff policy in simulation 1 by reducing the tariff, the producer surplus decreased by Rp. 1,513.28 Billion. On the other hand, if the government increases the rice import tariff in simulation 2, it will increase the producer surplus to Rp. 1.51 Trillion. Meanwhile, if the government lowers the rice import tariff to Rp. 200/kg, then the government's revenue from rice import tariffs fell to Rp. 136 billion. On the other hand, if the government raises the rice import tariff to Rp. 700/kg, then the government's revenue increases from Rp. 291 billion to Rp. 428 Billion. This impact can be seen in the figure below, which is a curve with basic tariffs, simulation curve 1, and simulation curve 2 [7]. The red part is the consumer surplus area, the yellow area is producer surplus and the blue area is government revenue.

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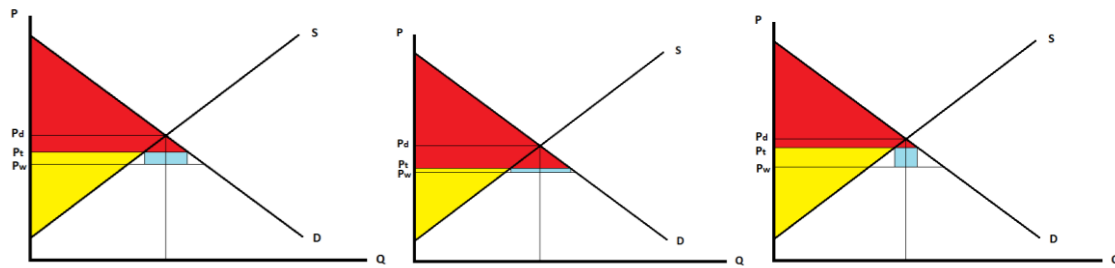


Figure 1. Curves of Tariff Simulation Results on Producer, Consumer and Government Income Surplus

The implementation of the policy of reducing rice import tariffs to Rp. 200/kg can increase the welfare of the community as a whole as much as Rp. 818 M. Meanwhile, if the government raises the rice import tariff to Rp. 700/kg, it will reduce the welfare of the community as a whole to Rp. -262 M. As stated by Krugman and Obstfeld (2000), import tariff policies will reduce the welfare of society as a whole compared to free trade/without tariffs. The exemption of tariffs can provide a larger national economic surplus, which means that the national economy is more efficient. However, in terms of distribution, producers receive a much smaller surplus than consumers, which means that the aspect of equitable distribution of benefits from government policies is not realized [8]

### V. CONCLUSION

1. The import tariff policy applied to rice commodities according to PMK No.93/2007 is Rp. 450. Rice production in East Java always increases every year, while rice consumption in East Java tends to decrease. Even so, the government continues to import rice due to various factors such as price increases, lack of stock availability to certain interests.
2. A decrease in tariffs results in a decrease in production, whereas an increase in tariffs increases production. A reduction in tariffs will increase consumption, whereas an increase in tariffs will cause a decrease in consumption.
3. If only seen from the producer's perspective, the higher the import tariff causes the welfare or surplus of producers/farmers to increase. Meanwhile, if only seen from
4. The consumer's side, the higher the tariff, the lower the consumer's welfare. In net welfare, an increase in import tariffs will reduce people's welfare

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