



ADJUSTING IMPORT TARIFF FOR STRATEGIC AGRICULTURAL COMMODITIES IN INDONESIA

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ABSTRACT

Reference prices at the farm level for several strategic commodities issued by the Ministry of Trade are generally higher than fair prices to obtain reasonable profits (20-30% of total farming cost). For maize, soybean, and sugar, the reference price is around 2.28%; 14.34%; and 13.40% above the fair price. The reference price is generally higher than the import parity price. This shows that farmers have received adequate protection, but this is a burden for consumers who have to pay higher prices. The current import tariff level is generally lower than the tariff level needed to maintain a reference price level. To realize the reference pricing and tariff import policies, the partial equilibrium is utilized to calculate the optimal tariff level. The research results indicate that import tariffs of maize need to be increased from 5% to 9.1%, the import tariff of sugar need to be increased from 7% (Rp 550 (US\$ 0.04)/kg) to 14.0%, and import tariff of soybean need to be increased from 0% to around 15.02%.

INTRODUCTION

The government plays an essential role in the development of the agricultural sector in Indonesia. This was done, among other things, to achieve food self-sufficiency, job creation, price stabilization, and increased farmer's income. This critical role is represented in the form of various government policies, such as trade policies and agricultural policies. Instruments of these policies are import tariffs, price support, direct payments, and input subsidies (fertilizers and seeds). In the case of tariff, there are two factors determining the application of tariff, namely the world market price and the exchange rate. If the local currency tends to weaken, tariff is not necessary to be applied. Conversely, if the local currency tends to strengthen, the tariff policy needs to be implemented immediately, to avoid falling prices below the set benchmark price.

The three main reasons are often raised regarding the need for protection of economic sectors in the country. *First*, to protect domestic producers from the pressure of competitive imported products that are produced by cheap labor. *Second*, to equalize the price of imported products with the prices of domestic products, thereby allowing local producers to compete with producers from other countries. *Third*, the implementation of non-tariff protection to reduce domestic unemployment and overcome a country's balance of payments deficit. The ad-valorem tariff tolerance generally agreed by the WTO is very low, which is a maximum of 5%. With such a tariff level, protection by the government to inhibit the entry of imported goods has little effect. The level of applied tariff should be consistent with the price policy which targeted the price at a certain level. This paper wishes to identify import tariffs that should be imposed to control the prices of agricultural commodities in the domestic market in order to protect farmers from competition of the imported products. We focus the analysis on three strategic commodities, namely maize, soybean, and sugar.

Determining fair price for strategic commodities

To determine the tariff level, first we have to set the target price at the farm level. The target price which is considered as fair price to the farmers is the unit cost of production plus the normal profit. The cost of production data is collected from the Central Bureau of Statistic (CBS). The following section describes the analysis for the strategic commodities.

Maize

The largest share of maize farming costs is for labor and land rent, i.e. around 38.6% and 14.0%, respectively. The total production cost of maize farming is estimated at Rp. 10.2 million (US\$754.8)/ha. With maize productivity of 5.2 tons/ha (Ministry of Agriculture 2017), then the cost to produce 1 Kg of maize plus a reasonable profit of 25 % of the total cost is Rp.2,452 (US\$ 0.18) as presented in Table 1. The Ministry of Trade has set the reference price for maize based on the level of water content, namely: (a) Rp.3,150 (US\$0.23)/Kg for water content of 15%; (b) Rp. 3,050 (US\$0.23)/Kg for water content of 20%; (c) Rp.2,850 (US\$0.21)/Kg for water content of 25%; (d) Rp.2,750 (US\$0.20)/Kg for water content of 30%; and (e) Rp. 2,500 (US\$0.19)/Kg for water content of 35%. In general, maize produced by the farmers have a level of water content more than 15%. Maize with a level of water content of 15% is one that has undergone a proper drying process. Farmers usually sell maize immediately after harvest, with a level of water content of 20% or above. Therefore, the reference farm gate price is relatively lower compared to the fair price, the maize price with level of water content around 15%.

Table 1. Calculation of the fair prices of maize based on farming cost structure, 2017

No.	Description	Cost (Rp/Ha)	Percent
1	Input of Production	2,622,420	20.45
	a. Seed	899,640	7.02
	b. Fertilizer	1,370,880	10.69
	c. Pesticide	351,900	2.74
2	Labor	4,952,100	38.62
3	Land rent	1,793,160	13.98
4	Others	832,320	6.49
5	Total cost of production	10,200,000	100
6	Production/Ha (kg)	5,200	
7	Cost per Kg (Rp)	1,962	
10	Profit of 25% (Rp)	490	
11	Price with 25% profit (Rp/Kg)	2,452	
	Reference price (Rp/Kg)	2,500 – 3,150	

Source: CBS, 2017 (Struktur Ongkos Usahatani, 2017); 1 US \$=Rp.13,580 in 2017

Soybeans

The same with maize farming, the largest share of farming costs of soybean is labor costs and land rent. Production costs of soybeans are relatively higher compared to soybean due to more intensive use of pesticides and fertilizers. The total cost of soybean farming is Rp. 9.04 million (US\$669.0)/hectare and soybean productivity is around 1.52 tons/ha (Ministry of Agriculture 2017). With the cost to produce per kg of soybean of Rp.5,947 (US\$0.44), and a reasonable profit of 25%, then the fair price of soybeans is around Rp.7,434 (US\$0.55)/Kg. The Ministry of Trade's reference farm gate price for soybeans is Rp. 8,500 (US\$0.63)/Kg, slightly higher than the fair price of soybeans based on the soybean farming cost structure (Table 2).

Table 2. Calculation of the fair prices of soybeans based on farming cost structure, 2017

No.	Description	Cost (Rp/Ha)	Percent
1	Input of Production	1,403,008	13.43
	a. Seeds	590,312	5.65
	b. Fertilizers	449,288	4.3
	c. Pesticides	363,408	3.48
2	Labor	4,269,592	40.88
3	Land rent	2,603,520	24.93

4	Others	763,880	7.31
5	Total cost of production	9,040,000	100
6	Production/Ha (Kg)	1,520	
7	Cost per Kg (Rp)	5,947	
10	Profit 25% (Rp)	1,487	
11	Price with 25% profit (Rp/Kg)	7,434	
12	Reference price (Rp/Kg)	8,500	

Source: CBS, 2017 (Struktur Ongkos Usahatani, 2017); 1 US \$=Rp.13,580 in 2017

Sugar

Table 3 shows the costs per hectare of sugarcane farming. It can be seen that the total cost of sugarcane farming is around Rp. 32.7 million (US\$2,419.8)/ha. The largest share of expenditure is for renting land reached 32.4% of total costs, followed by cost for labor around 26.2% and for input of production around 24.9%. The cost to produce per kg of Sugar (break-even price) is Rp. 6,420 (US\$0.48) per kg. Therefore, the fair farm gate price is around Rp. 8,025 (US\$0.59)/kg. The farm gate reference price of sugar set by the Ministry of Trade in 2017 was Rp.9,100 (US\$0.67)/Kg. Therefore, farmers can enjoy a reasonable profit if the reference price is applied consistently.

Table 3. Calculation of the fair prices of sugar based on farming cost structure, 2017

No.	Description	Cost (Rp/Ha)	Percent
1	Input of Production		
	a. Seeds	4,131,788	12.62
	b. Fertilizers	3,941,896	12.04
	c. Pesticides	111,316	0.34
2	Labor	8,581,154	26.21
3	Land rent	10,597,938	32.37
4	Others	5,375,908	16.42
5	Total cost of production	32,740,000	100
6	Production/Ha (Kg)	5,100	
7	Cost per Kg (Rp)	6,420	
10	Profit 25% (Rp)	1,605	
11	Price with 25% profit (Rp./Kg)	8,025	
	Reference price (Rp/Kg)	9,100	

Source: CBS 2017, Struktur Ongkos Usahatani, 2017; 1 US \$=Rp.13,580 in 2017

Trend of commodity prices

Food price policies can be said to be dualistic policies. On the one hand, the food price policy must lead to prices that are affordable and not burdensome for consumers so that a low price level is desired. On the other hand, food price policy must also be able to protect producers so that producers can get reasonable incentive to do a sustainable production. Therefore, to accommodate the interests of consumers and producers, the government sets a reference price at both the producer and consumer levels. The reference price determination is implemented by issuing a decree of the Minister of Trade. The most recent decree is the Minister of Trade Regulation (Permendag) Number 58, issued in 2018.

Maize

The CIF price of maize is always lower than the price at the farm gate, or in other words, the price of maize at the farm gate level is always higher than the import price. The CIF price of maize in 2017 is Rp.2,810 (US\$0.21)/Kg. If a 5% tariff is applied, the import price of maize is only Rp.2,950 (US\$0.22)/Kg, lower than the farm gate price of maize around Rp.4,256 (US\$0.31)/Kg (Table 4). The large difference between international and the farm gate price shows the low competitiveness of Indonesian maize production in the international market. If there is no price and import policy, the surge of maize imports will be a disincentive for maize farmers. The rate of growth of the farm gate and import prices, during the period of 2013-2017, was 5.1% and 6.7% per year, respectively. The wholesale prices are relatively stable, with a growth rate of 1.8%/year. The wholesale price level is in accordance to the reference price set by the Minister of Trade.

Table 4. Trend of import, farm gate, wholesale, retail, and reference price of maize, 2013-2017

Year	Import price	Farm gate price	Wholesale price	Retail price	Producer Price	Reference Price	Consumer Price	Reference Price
	Rp/Kg							
2013	3,012	3,486	4,500	7,815				
2014	2,957	3,670	4,500	6,194				
2015	2,855	3,778	4,500	6,460				
2016	2,696	4,094	4,500	7,122		3,050		3,650
2017	4,416	4,256	4,933	7,125		3,050		4,000
%/year	6.73	5.08	1.84	-0.45				

Source: Import price (UN Comtrade); Farm gate (Statistik Harga Komoditi Pertanian, 2017); Wholesale and Retail Price (<https://aplikasi.pertanian.go.id/smspricekab>)

Table 4 shows that the reference prices (2017) of maize with level of water content of 20% was Rp 3,050 (US\$0.23)/kg, lower than the farm gate price of Rp. 4,256 (US\$0.31)/kg. This indicates that the reference price effectively supports the farm gate prices. Farmers receive price higher than the production cost per kg of maize. There is high price difference between retail and wholesale prices, which indicates an inefficient market due to market power. Price trend during 2013-2017 shows a declining trend by -0.5%/year. The consumer reference price did not effectively protect the consumer. It is shown by retail price Rp.7,125 (US\$0.53/Kg) that much higher than the consumer reference price (Rp.4,000 or US\$0.30 /Kg).

Soybean

The CIF price for soybeans are always lower than the farm gate price, even if we add a 5% import tariff. This indicates that local soybean is less competitive than imported soybeans. The Ministry of Trade's farm gate reference price for local soybean is Rp. 8,500 (US\$0.63)/Kg, whereas soybean price at the farm gate level is only Rp. 7,759 (US\$0.57)/Kg. The Ministry of Trade's farm gate reference price is higher than the price received by farmers. In other words, the farm gate reference price is not effective in supporting producer prices. The farm gate price of soybeans tended to decline in 2017 against 2016 (Table 5).

The difference between the wholesale and the farm gate price of local soybeans is not significant, but the difference between consumer and farm gate price is quite significant. The margins of the wholesale and retail prices are also high. The growth rate of retail prices is greater than that of wholesale and farm gate prices, which tend to decline.

Table 5. Trend of import, farm gate, wholesale, retail, and reference price of soybean, 2013-2017

Year	Import price	Farmgate price	Wholesale price	Retail price	Producer Price	Reference Price	Consumer Price	Reference Price
	Rp/Kg							
2013	6,453	7,724	8,286	10,049				
2014	7,107	8,326	9,000	10,643				
2015	6,137	8,327	8,850	11,161				
2016	5,642	8,284	7,500	11,398		8,500		9,200
2017	6,772	7,759	9,001	10,868		8,500		9,200
%/year	-1.34	0.04	-0.17	2.25				

Source: Import price (UN Comtrade); Farm gate (Statistik Harga Komoditi Pertanian, 2017); Wholesale and Retail Price (<https://aplikasi.pertanian.go.id/smspricekab>)

The retail price of soybeans was Rp. 10,868 (US\$0.80)/Kg, higher than the Ministry of Trade's reference price of Rp. 9,200 (US\$0.68)/Kg. This means that the Ministry of Trade's retail reference price is not effectively protecting consumers. Retail prices also grow at a higher rate compared to wholesale prices, producer prices, and CIF prices.

Sugar

From 2013 to 2017, the CIF, wholesale, and retail prices of sugar showed the same pattern of movement but with different levels of fluctuation. The price of sugar in the world market is much lower compared to the price of sugar in the domestic wholesale market. The difference in wholesale and CIF prices seems to be getting bigger. However, the difference in wholesale and CIF prices has tended to get smaller since 2016. To protect producers from falling prices and protect consumers from price increases, the Ministry of Trade sets a reference price for sugar producers and consumers.

The price of domestic sugar is relatively more stable compared to the world sugar prices as indicated by CIF prices. The retail price of sugar in the domestic market in 2017 is relatively high (Rp. 15,086 (US\$1.12)/kg), and higher than the reference price set by the Ministry of Trade at Rp. 12,500 (US\$0.93)/kg (Table 6). The high difference between wholesale and retail prices indicates inefficient sugar market. This increase of the CIF prices must be alerted because Indonesia imports around 60% of total domestic sugar consumption and Indonesia is also one of the largest sugar importing countries in the world.

Table 6. Trend of import, farm gate, wholesale, retail, and reference price of sugar, 2013-2017

Year	Import price	Wholesale price	Retail price	Producer Price	Reference	Consumer Price	Reference
2013	5,412	12,242	12,915		9,100		12,500
2014	5,319	11,326	12,704		9,100		12,500
2015	4,983	12,317	13,071		9,100		12,500
2016	5,840	14,399	14,426		9,100		13,000
2017	7,492	13,417	15,086		9,100		12,500
%/year	12.69	6.56	6.23				

Source: Import price (UN Comtrade); Farm gate (Statistik Harga Komoditi Pertanian, 2017); Wholesale and Retail Price (<https://aplikasi.pertanian.go.id/smspricekab>)

The optimal applied tariff

The applied tariff is expected to guarantee a fair farm gate price. The reasonable price is the price that generates around 20-30 percent of profit. The calculation of the optimal tariff refers to the prices in the world market, the exchange rate, the prices in the domestic market to ensure the reasonable profit to the agent in the supply chain. The implicit import price employed as the CIF price, and the importer's trading margin to the warehouse is assumed to be around 20% of CIF price for maize and 25% of CIF price for soybeans and sugar. Soybean margin is higher than maize because soybeans are believed to have a higher risk. The marketing costs from farmers to wholesalers are the difference between the wholesale and the farm gate prices. The optimal tariffs are calculated from the difference between the reference farm gate price and the farmer's parity price divided by the CIF price (Table 7).

Maize

The optimal tariff for maize to guarantee a 25% profit of the farmer is 9.10%. Considering the current applied tariff rate of 5%, it is proposed that the maize import tariff is increased by 4.10%. Furthermore, by assuming a margin of 25% from the port to the importer's warehouse, the wholesale parity price is Rp. 3,372 (US\$0.25)/kg. The trading fee for distributing maize from farmers to wholesalers is Rp. 677 (US\$0.05)/kg. Therefore, the farmer parity price is Rp. 2,694 (US\$0.20)/kg. The farm gate reference prices according to Minister of Trade Regulation No. 58 of 2018 is Rp 2,950 (US\$0.22)/kg. Therefore, the applied tariff for imported maize needs to be increased to around 9.10%.

Soybeans

The optimal applied import tariffs for soybean that guarantee 25% profit of soybean farming is 15%. Soybean imports are currently subject to 0% import tariff. Therefore, soybean import tariff need to be increased by 15%. In this case, soybean margins from the port to warehouses and trading costs from farmers to wholesalers are estimated at 30%, considering that soybean have a relatively higher risk of farming and marketing than others commodities.

Sugar

The government carries out several policies to protect Indonesian sugar farmers because sugar imports is accounted for around 60% of domestic sugar consumption. Assuming a margin of 20% from the port to the importer's warehouse, the import parity price of sugar at the wholesale is Rp. 9,514 (US\$0.70)/kg. The results showed that trading fee from farmers to wholesalers is Rp. 5,350 (US\$0.40)/kg and the import parity price at the farm level is Rp. 4,164 (US\$0.31)/kg. Based on the reference farm gate price of Rp. 9,100 (US\$0.67)/kg, the optimal tariff that needs to be applied to provide adequate protection to sugar farmers is around 14% or increased by 7% from the current level. Currently import tariff for sugar is Rp. 550 (US\$0.04)/kg or around 7.34%/kg. Indonesia imports sugar mostly from Thailand and Australia.

Table 7. Optimal import tariff vs applied import tariff, 2017

Description	Unit	Maize	Soybean	Sugar
CIF price	(\$/kg)	0.21	0.52	0.56
Exchange rate	\$/Rp.	13,379	13,379	13,379
Margin	%	20	25	20
CIF price	Rp./Kg	2,810	6,957	7,492
Margins (importer's trading fees to the warehouse)	Rp./Kg	562	1,739	2,023
Import parity prices at the wholesale	Rp./Kg	3,372	8,697	9,514
Actual wholesale prices	Rp./Kg	4,933	9,001	13,400
Actual farmer prices	Rp./Kg	4,256	7,759	8,050
Trading fees from farmers to wholesalers	Rp./Kg	677	1,242	5,350
Import parity price at the farm gate	Rp./Kg	2,694	7,455	4,164
Reference prices at the farm gate	Rp./Kg	2,950	8,500	9,100
Reference prices-import parity price at farm gate	Rp./Kg	256	1,045	1,050
Optimal tariff (With reasonable farmer profit)	%	9.10	15.02	14.00
Applied tariff	Rp./Kg or %	5%	0%	550/7.3%
Optimal tariff > or < Applied tariff		>	>	>
Recommendations		Increased 4%	Increased 15%	Increased 7%

CONCLUSIONS AND POLICY IMPLICATION

- The reference prices at the farm level for several strategic commodities issued by the Ministry of Trade are generally higher than reasonable prices to obtain adequate profits. For maize, soybeans, and sugar, the reference price is around 2.0-28.0%; 14.3%; and 13.4% above the reasonable price, respectively.
- The reference price issued by the Ministry of Trade is generally higher than the import parity price. This shows that farmers have received adequate protection, but on the other hand this is a burden to the consumers who have to pay higher prices. The current import tariff level is generally lower than the tariff level needed to maintain a reference price level higher than the import parity prices.
- To synchronize the reference pricing policies of several strategic commodities and import policies, the import tariffs of maize need to be increased by 4.10%, soybean increased by 15.02%, and sugar increased by 7%. However, it is necessary to note that policy to raise import tariff will lead to strong reaction from industry which use these commodities as raw material in domestic market, and similar reaction from trading partners in the international market.
- In the trade liberalization era, domestic price policies have to be applied in accordance to price movements in the international market. The proper trade policy could provide opportunities for domestic producers to get better incentives.

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