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SINTA 2

The Effect of Price and Tariff Policy on Shallot Import in Indonesia

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ABSTRACT
Shallot is an agricultural commodity whose prices fluctuate depending on the season and cannot always be predicted in advance. In order to stabilize prices, the government often imports shallots. The government also imposes tariffs on imports so that the price of imported shallots increases. As a result, domestic production can be more competitive. Then domestic production can compete with imported goods, so it is hoped that imports of shallots will decrease. This study aims to determine the effect of price and tariff policies on shallot imports using Ordinary Least Square (OLS). In addition, a partial correlation analysis was carried out to identify the relationship between price and tariff policy variables with shallot imports. The results show that the increase in imported shallot prices and tariffs reduces imports of shallots. Those findings indicate that the tariff policy can control the import of shallots. In addition, the tariff policy has a negative relationship with shallot imports.

Keywords: Shallot, Import, Price, OLS, Tariff.

INTRODUCTION
Shallot (Allium ascalonicum L) is one of the crucial commodities for the people of Indonesia. Shallots are vegetables that are grown from lowland areas (<1 masl) to highland areas (>1000 masl). The shape of the shallots in Indonesia is different in shape, and the pronunciation from one region to another is due to the different varieties. In Sundanese, shallots are called “bawang beureum” while the Javanese call it “brambang”. Shallots are vegetables used as ingredients or spices for daily cooking and as traditional medicines or ingredients for the rapidly growing food industry (Pranata & Umam 2015). Shallots are an essential source of carbohydrates, vitamins A, B, and C. The phenolic compounds in shallots consist of gallic acid, apigenin, quercetin, rutin, kaempferol, catechins, and tannic acid. The main benefits of onions are reduced risk of cancer, improves heart health, helps detoxify, helps control diabetes, improves brain health, helps fight obesity and treat allergies, improves bone health, maintains healthy vision, boosts immunity, improves skin health, improves stomach health and hair health. The dominant medicinal properties of Persian shallots are antibiotic, hypolipidemic, anticancer, antioxidant, hypoglycemic, kidney protective, and hepatoprotective properties (Sun et al., 2019).

Based on BPS data (2020), shallots have the highest average weekly per capita consumption after eggs, rice, and sugar. The average weekly consumption per capita of shallots fluctuates but tends to increase in number every year. Among food products, shallots are also a commodity that must always be available in the market. Sometimes, onions are the cause of inflation. The increase in the price of shallots will impact the increase in the prices of other ingredients, especially

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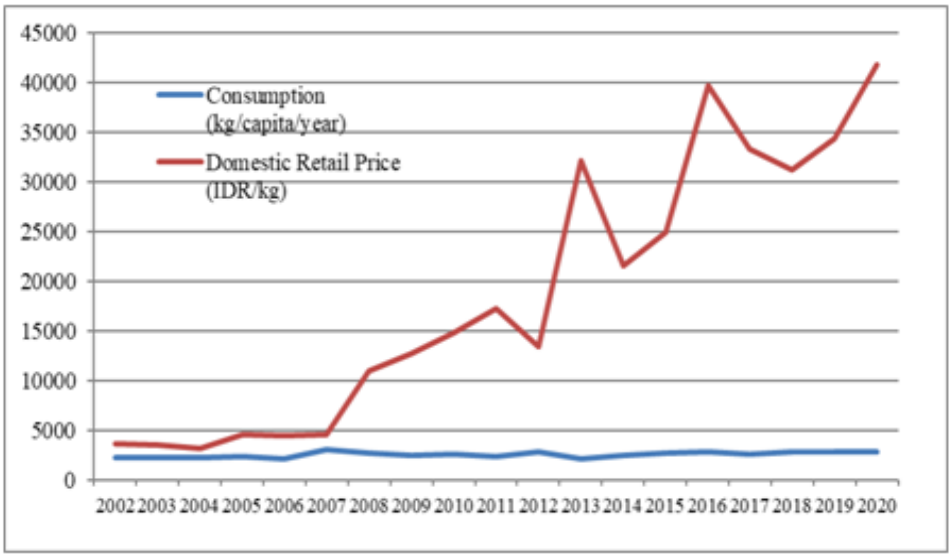
materials related to food. This is due to shallots being a vital request that every society must have (Fajjriyah, 2017).

Changes in the price of shallots are pretty volatile, depending on the season, and cannot always be predicted in advance (Figure 1). These price changes have a heterogeneous impact on public consumption, so shallots' import is often a practical solution to stabilize prices. The problem of seasonal price changes and imports of agricultural commodities, including shallot, is a dilemma that is not only experienced by the consumer community but also by farmers and producers. If not handled properly, it can increase the incidence of poverty (Dercon & Krishnan 2000). Based on Figure 1, we can see that the consumption of shallots is relatively stable even though prices are highly volatile. This data shows that shallot is an essential commodity for the community. A very high increase in the price of shallots does not automatically reduce the consumption of shallots significantly. However, the results of previous studies stated that the price of shallots harmed the demand for shallots (Dahar, 2017; Lay et al., 2018; Arafah et al., 2019).

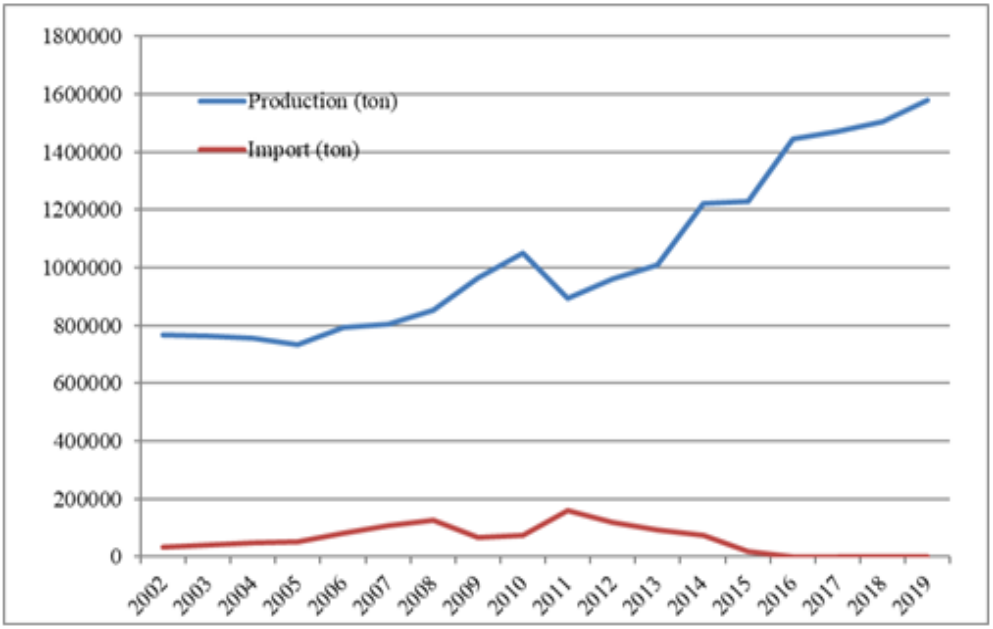
Imports of agricultural commodities, including shallot, are a common concern for subsistence farmers in developing countries. In Indonesia, the increase in food prices has led to inflation. The role of food commodities on the Poverty Line is much more significant than the role of non-food commodities (housing, clothing, education, and health). The food commodity that significantly influences the value of the Poverty Line in urban and rural areas is shallots (BPS, 2021). According to Figure 2, it can be seen that shallot production tends to increase while imports are relatively declining.

Adil et al. (2012) predict that there will be a high gap in the production and consumption of shallots in the coming years. The gap between supply and demand can be avoided by making the right policies. This study aims to determine the effect of prices and tariff policies on imports of shallots. Many previous studies have examined the factors that influence shallot imports (Dewi and Sutrisna 2016; Pasaribu and Daulay 2013), but none have focused on analyzing the effect of prices and tariffs on shallot imports.



Source: BPS, Pusdatin Ministry of Agriculture and Ministry of Trade

Figure 1
Retail Prices in the Domestic Market and Consumption of Shallots



Source: BPS, Pusdatin Ministry of Agriculture and Ministry of Trade

Figure 2
Production and Import of Shallots

METHODOLOGY

This study uses secondary time series data from BPS, Ministry of Trade, Ministry of Agriculture FAO, and UN Comtrade for the 1997-2020 period, which is then analyzed using Ordinary Least Square (OLS), which is an analytical method for estimating a regression line with how to find the minimum value for the sum of the squares of errors between the predicted value and the actual value (Woldridge, 2013). The regression model used in this study is defined in equation (1).

$$Imp_t = c + \beta_1 P_{domt} + \beta_2 P_{impt} + \beta_3 Exc_t + \beta_4 T_t + e_t$$

Where $\mathbf{Imp_t}$ are Volume of shallot imports in year t (tons), $\mathbf{Pdom_t}$ areDomestic retail price of shallots in year t (IDR/kg), $Pimp_t$ are Price of imported shallots in year t (000 US$/ton), Exc_t is Exchange rate or the exchange rate of the rupiah against the dollar (IDR/US$), T_t is Import tariff (%), e_t is error term.

In order to examine the relationship between the shallot import variable and import prices and tariffs, this study applied partial correlation analysis. Correlation can be interpreted as a relationship between variables. So partial correlation analysis, in principle, is to see how strong the relationship between variables is and in what direction. The strength of the relationship is expressed in the correlation coefficient, which is often abbreviated as *r*. At the same time, the direction of the relationship is indicated by a positive or negative relationship. If two variables have a positive relationship, the higher one variable, the higher the other variables. However, if two variables have a negative relationship, the higher one variable, the lower the other variable, in correlation all variables have the same position, and no variable effects (independent) or variable that is influenced (dependent) (Baum, 2006).

RESULT AND DISCUSSION

The Domestic Price of Shallot

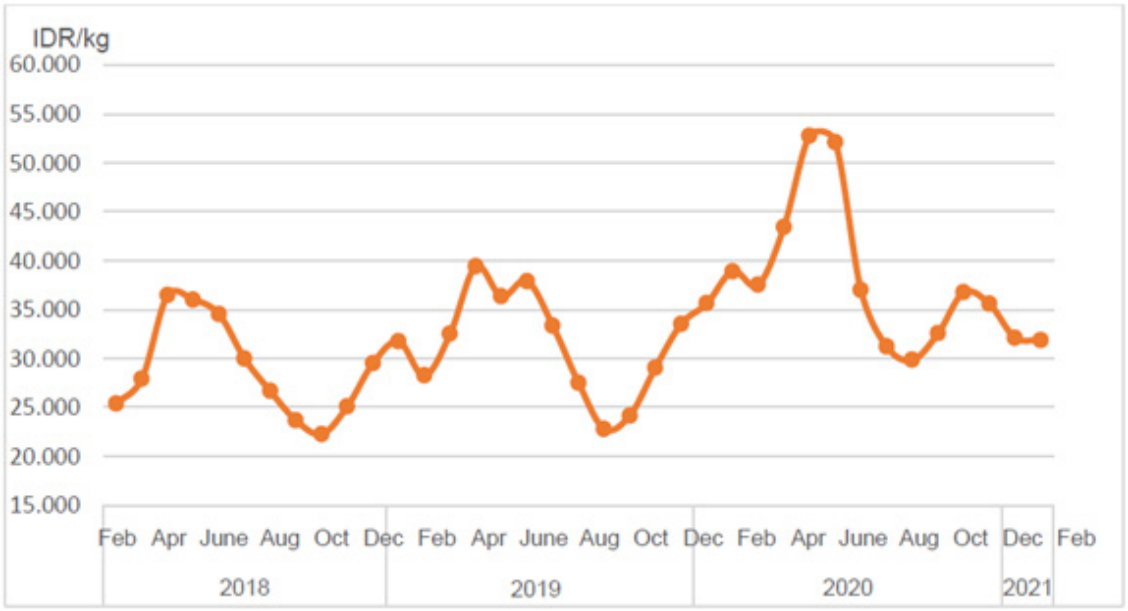
Every year, the monthly price of shallots nationally is relatively unstable. This condition is shown by the coefficient of variance of monthly prices from February 2020 to February 2021, which is relatively high at 19.76%. Nationally, the average price of shallots in February 2021

experienced a relatively low decline where the price of shallots in February was IDR 31,875/kg where the price was 0.74% lower than the price of shallots in the previous month, which was IDR 32.113/kg. This price level is below the reference price set by the Ministry of Trade of IDR 32,000 kg for shallots (Regulation of Minister of Trade No. 7 of 2020 concerning Reference Purchase Prices at Farmer Level and Reference Sales Prices at Consumer Level). The price level of shallots in February 2021 experienced a high decline of 18.40% compared to prices in February 2020 (Figure 3).The increase in the price of shallots is usually caused by the fact that some farmers in the shallot production center areas are replacing the plants that previously planted shallots and are currently growing rice on the same land. Starting at the end of February and March, some farmers in the shallot production centers who plant rice will start planting shallots therefore the price of shallots increases in March because some shallots in the warehouse will be used as seeds. The increase in the price of shallots usually also occurs during the months of Ramadan and Eid.

Tariff Import Policy of Shallot

A tariff is an imposition on goods that pass through the Customs Area. The general form of tariff policy is the imposition of an import tax with a certain percentage of the price of imported goods. As a result of the imposition of tariffs, the price of imported goods increases so that domestic products can be more competitive. Then domestic production can compete with imported goods, and it is expected that imports of goods will decrease. The following are some policies regarding shallot commodities made by the government.

a. Import tariff harmonization policy on January 1, 2005
   Incoming shallots are subject to a tariff of 25% in 2005-2010 and decreased to 20% in 2011
b. Minister of Finance Regulation No. 28/PMK.010.055 and Minister of Finance Regulation No. 355/KMK.01/2004, the import tariff on shallots originating from China and ASEAN was 0% in 2006.



Source: Ministry of Trade, 2021

Figure 3
Trend of Domestic Shallot Prices (IDR/kg)

Table 1
Estimation Result of The Effect of Price and Tariff on Shallots Import

	Coefficient	Standard Error	P> |t|
Constant	18247,89	30295,61	0,554
Domestic Retail Price	2,1507***	0,7500	0,009
Import Price	-1,4569***	0.2128	0,000
Exchange Rate	3,6520^{ns}	3,5894	0,322
Import Tariff	-1738,939***	512,2334	0,003
F Statistic	20,10***		
R square (R^2)	0,8171		
Durbin-Watson	1,89		
Number of Observations	24		

Note: *** Signifikant at α = 1%
^{ns} Not significant
Source: Analysis of Secondary Data, 2021

c. Import relaxation package valid until May 31, 2020
   The government has decided that imports of horticultural products needed by the community do not have to include an Import Permit (SPI) or Surveyor Report (LS), which the Ministry of Trade has issued.
d. Regulation of the Minister of Trade Number 27 of 2020
   The Ministry of Trade has released the Recommendation for importing Horticultural Products (RIPH), particularly for shallots and garlic.

The Effect of Price and Tariff on Shallots Import

The results of the analysis using OLS are presented in Table 1. Domestic retail shallot prices positively affect shallot imports at the 99% significance level. If the retail price of shallots in the domestic market increases by 1%, it will trigger an increase in imports of shallots by 2.15%. This result is consistent with the Ministry of Trade (2015), which stated that to prevent further increases in domestic prices and food scarcity, the government attempts to meet people's food consumption through imports of food products, including shallot. However, the Indonesian government emphasizes that imports are the last effort to fulfill national food needs in realizing food security, increasing farmers' income and welfare, consumer interests, and creating national economic stability.

The imported shallot price has a negative effect on shallot imports at the 99% significance level. An increase in the price of imported shallot by 1% will reduce import of shallot by 1.46%. This finding is linear with the economic theory stating that an increase in the price of goods will reduce the demand for these goods (Varian, 2014). Similarly, the estimated parameter of the import tariff is also negatively significant to shallot import at significance level α=1%. An increase in tariff leads to an increase in the price of imported shallots. If the shallot import tariff increases by 1%, it will reduce by 1738.939%. Tariffs are barriers to international trade that will limit imported goods so that the domestic producers can allegedly encourage domestic production. This finding supports Krugman (2018). Import restrictions on shallots that can reduce the number of imports can cause domestic prices of shallots to rise.

In contrast, the exchange rate is the only variable that has no significant effect on imports of shallots. This finding contradicts Abbas et al. (2020) dan Arize et al. (2017). This finding indicates that the exchange rate does not affect the consideration of whether Indonesia will import shallots or not. Imported shallots are carried out mainly to meet domestic needs.

Table 2
Results of Partial and Semi-Partial Correlation Analysis of Imported Shallot Import

Variable	Partial Correlation	Semipartial Correlation	Significance Value
Domestic Retail Price	0,5600	0,2891	0,0102**
Import Price	-0,7501	-0,6903	0,0000***
Exchange Rate	0,2332	0,1026	0,3224^{ns}
Import Tariff	-0,6248	-0,3422	0,0032***

Note: *** Significant at α = 1%
** Significant at α = 5%
^{ns} Not significant
Source: Analysis of Secondary Data, 2021

The regression analysis results are supported by partial correlation results that show that retail shallot prices are positively related to shallot imports. Meanwhile, imported shallot price and import tariff are negatively related to shallot imports.

Based on the above results, it can be seen that the increase in the price of bright shallots in the domestic market can trigger an increase in shallot imports. On the other hand, the increase in the price of imported shallots and the stipulated tariffs on shallot imports will reduce shallot imports. The results of this study support (Fitriana, Sinaga, and Hastuti 2019), who concluded that an increase in import tariffs could control shallot imports, which can improve the welfare of shallot farmers.

It can be drawn policy implications for maintaining the stability of the domestic shallot market are to control domestic prices and control shallot imports by enforcing import tariffs. Saptana et al. (2021) suggested that shallots are more profitable to domestically produced than imported. Developing domestic production will increase the competitiveness of Indonesian shallots. Wahyudin (2015) also emphasized that imported shallots will reduce the price of shallots in the country to a dangerous level to shallot farmers, so their welfare decreases. Therefore, the price of shallots in the country must be controlled so that farmers remain affordable but affordable by consumers not to cause inflation.

CONCLUSION

Domestic retail price of shallot has a positive effect on shallot imports. Meanwhile, import prices and tariffs have a negative relationship with shallot imports. To control the import of shallots can be done by preventing the increase in domestic prices. Domestic price stabilization should be pursued by developing domestic production, considering that shallot production has an increasing trend. Restrictions on the import of shallots with import tariffs have been shown to reduce imports significantly. However, it must be applied carefully and ensure that the domestic demand for shallots is met.

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