THE ANALYSIS OF ANTI-DUMPING DUTIES IMPOSITION AGAINST POLYESTER STAPLE FIBER COMMODITIES IMPORT VALUE

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ABSTRACT:

Dumping practices can damage the domestic product market because commodities are imported at lower prices. Indonesia has imposed anti-dumping measures on Polyester Staple Fiber (PSF) commodities since 2010 until now. This study aims to analyze the impact of long-term and short-term anti-dumping duties (BMAD) imposition on the import value of PSF commodities in Indonesia. This study was conducted using quantitative analysis methods with multiple linear regression testing model Error Correction Model (ECM). Based on the results of quantitative testing, in the long term, the variable partially has a positive and significant effect on the import value of PSF commodities. Meanwhile, in the short term, the BMAD variable partially does not affect the value of PSF commodity imports from the target country. This shows that the imposition of anti-dumping duties does not directly have a restrictive effect on the import value of PSF commodities.

Keywords: antidumping duties, Polyester Staple Fiber
1. INTRODUCTION
Free trade has an impact on the emergence of patterns that result in various countries using protective measures on certain commodity import activities (Moore & Zanardi, 2011). There are various kinds of international trade policy instruments such as the application of tariffs, taxation, subsidies on exports, and quotas on imports, to voluntary export restrictions (Appleyard & Field, 2014). Countries enact international trade policies to safeguard the domestic economy, trade, and industry. The imposition of import duty rates, about imports, can be done to protect domestic industries from the increasing number of import activities. The protection instrument can also protect the domestic market from possible dumping practices.

Dumping is an activity defined as the export of goods at a price lower than the cost of production, or the price of exported goods lower than the price of domestic goods, as well as circumstances where the price of exported goods is lower than the price in the third market. The act of dumping is the most prevalent issue in international trade because it can result in considerable losses for the domestic industry (Serences & Kozelova, 2021 Tjahjasari (2015). Krugman and Obstfeld (2006) state that dumping is a form of price discrimination in the form of unfair practices in international trade. Dumping practices that occur will damage the domestic product market because it easily wins in price competition due to imported at a cheaper cost.

Avşar (2013) revealed that antidumping measures are an effective instrument and have been widely used by developed and developing countries in the world to obtain temporary protection from dumping practices. Nurcahyo and Purwana (2020) said that antidumping measures would be a barrier to dumping practices that occurred in the domestic market. With the imposition of antidumping measures, price competition between domestic products and imported products will be fairer. Antidumping measures in Indonesia are applied through the imposition of Anti-Dumping duties (BMAD).

Indonesia's textile and textile products (TPT) industry is one of the industries affected by dumping. Dumping action occurred in textile commodity imports of Partially Oriented Yarn (POY), Spin Drawn Yarn (SDY), and Polyester Staple Fiber (PSF). For the Indonesian economy, the textile industry has a strategic and important role in helping to increase non-oil and gas exports, State foreign exchange, community income, absorb labor, and create jobs (Ragimun, 2018). According to the Industrial Research and Development Agency of the Ministry of Industry (2018), the textile industry is one of the 5 (five) sectors prioritized by Indonesia in the current industrial 4.0 era. Based on this, it is appropriate that the upstream TPT
industry needs to get more attention, including protecting the Indonesian upstream TPT industry from the threat of dumping practices from abroad.

One of the TPT commodities subject to antidumping action in Indonesia is Polyester Staple Fiber (PSF). The imposition of antidumping measures on these commodities is regulated in the regulation of the Minister of Finance number 196/PMK.011/2010 and regulation of the Minister of Finance number 171 / PMK.011/2011 which is valid for 5 (five) years. Furthermore, in 2016 the government issued further rules governing the same antidumping action through regulation of the Minister of Finance number 73/PMK.010/2016 valid for 3 (three) years. In 2019 the government again issued advanced rules through regulation of the Minister of Finance number 114/PMK.010/2019 for 3 (three) years until 2022. Based on the imposition of antidumping measures, it can be seen that the practice of dumping PSF commodities has been going on since the end of 2010 till now (2022).

Picture 1 PSF Import Value Percentage Year 2001 to 2020

![PSF Import Value Percentage Year 2001 to 2020](source: Processed from UN Comtrade (2021))

The imposition of antidumping duties on imports of Indonesian PSF commodities is imposed on 3 (three) target countries that carry out dumping practices, namely India, PRC (People's Republic of China), and Taiwan. Based on UN Comtrade data (2021) in Figure I.3 from 2001 to 2020, the total import value of PSF commodities from target countries amounted to 54.5% of the total import value of PSF commodities carried out, while the other 45.46% was the value of imports from other countries that were not subject to antidumping duties. This may indicate that there is dependence on the PSF market from the three countries in Indonesia, regardless of dumping and antidumping practices.

Several previous studies have been conducted to determine the impact of the imposition of antidumping measures in preventing the practice of dumping on imports of certain commodities. Ganguli (2008) mentioned that antidumping policies in India can significantly
decrease the value of related imports from the target country. Vandenbussche and Zanardi (2010) stated that the imposition of antidumping tariffs on developing countries can reduce the volume of imports. Tjahjasari (2015) which examines the impact of antidumping policies in Indonesia on steel commodities Cold Rolled Coil/Sheet (CRC/S), also mentioned that the implementation of BMAD has a significant influence in reducing the volume of imports of countries that practice dumping. Nurcahyo and Purwana (2020) in their study related to the impact of the antidumping policy in Indonesia on tinplate commodities also concluded that there is a value decrease in imports from countries that practice dumping during the use of antidumping duties.

In contrast to previous research, this article attempts to complement previous research by analyzing the application of BMAD to PSF goods. The formulation of the problem in this study is whether the imposition of BMAD has a long-term and short-term effect on the import value of PSF commodities in Indonesia from target countries subject to anti-dumping measures. Meanwhile, this study aims to analyze the impact of imposing BMAD in the long term and short term on the import value of PSF commodities in Indonesia from countries subject to anti-dumping measures. Long-term and short-term impacts are carried out to produce comprehensive conclusions on the impact of implementing regulations.

In previous studies, the imposition of antidumping duties affected reducing the value of imports as well as the volume of commodities dumping target countries (Niels, 2003; Avşar, 2013; Vandenbussche & Zanardi, 2010; Tjahjasari, 2015). Based on the description of the background and literature review, hypotheses related to the impact of the imposition of antidumping duties in this study are:

H0.1: the long-term imposition of antidumping duties has no significant effect on the import value of PSF commodities from the target countries.

H1.1: the long-term imposition of antidumping duties significantly affects the import value of PSF commodities from the target countries.

H0.2: the short-term imposition of antidumping duties has no significant effect on the import value of PSF commodities from the target countries.

H1.2: the short-term imposition of antidumping duties significantly affects the import value of PSF commodities from the target countries.

2. LITERATURE REVIEW

International Trade

In simple terms, international trade can be defined as trade that occurs between two or more countries (Christianto, 2013). In World Economic Activity, international trade is a
dynamic factor and a trigger for economic growth in various countries (Jeyarajah, 2020). Related trade activities are the exchange of goods and services between countries caused by demand and supply from the international market for each country.

According to Nurcahyo and Purwana (2020), some parties embrace the understanding of trade liberalization (understanding liberalism). However, on the other hand, some want a permanent role of the government in international trade (protectionism). In this regard, the government can play a role in making an international trade policy. One of them is by imposing tariffs on imports such as import duties (BM) and taxes on imports (PDRI). Krugman et al. (2018) state that a tariff in the form of a tax imposed on the import of a commodity is the simplest trade policy that can be applied. Through the imposition of tariffs on import practices, the selling price will increase, thereby affecting the pattern of supply and demand in the country for these commodities.

**Dumping**

Jacob Viner, a Canadian-born American economist in his book entitled "Dumping: a Problem in International Trade" in 1923 contributed substantially to the theory and practice of dumping by proposing the concept that dumping is the act of selling goods for export purposes at a lower price prevailing in the local market. Krugman et al. (2018) explained that dumping is a form of unfair trade practice that occurs when a company sets a lower price for the export market than the selling price set domestically. According to Gifford and Kudrle (2009), dumping is done through price discrimination and pricing strategies by importers to gain market power in the target country.

An action taken to control the market can cause significant losses to the affected domestic industry. In addition, dumping can significantly impact the industry in the destination market by putting pressure on prices and suppliers’ profits (Blonigen & Prusa, 2016). Lee et al. (2013) said that based on the Antidumping Agreement made by the WTO, dumping has three main characteristics. First, dumping is the act of selling a product at a price that is less than the normal value of the product. Second, it results in a substantial loss or threat of substantial damage to the relevant industry in the importing country, and third, low-cost sales and the resulting industrial damage have a causal relationship.

The rise of dumping actions that occur in international trade has resulted in many countries implementing anti-dumping measures. Unlike many forms of trade protection applied, anti-dumping measures are legal under WTO rules, as they aim to correct what is considered unfair trade practice (Blonigen & Prusa, 2016). Anti-dumping measures themselves have long been part of the trading system between countries in the world.
The history of anti-dumping began with the “Kennedy Round” of GATT in 1962 d. 1967. Then through the "Anti-dumping Code of 1979", the anti-dumping provisions were refined thanks to the results of the GATT negotiations in the "Tokyo Round" which was passed in Geneva on April 12, 1979. Provisions regarding anti-dumping are specifically regulated in Article VI of GATT in 1994. Indonesia is one of the countries that ratified the agreement through the issuance of Law Number 7 of 1994 on ratification of the agreement Establishing the WTO. Upon ratification, Indonesia also integrally ratified the Antidumping Code of 1979 because it is part of the WTO.

Through Law No. 10 of 1995 on customs, Indonesia further made provisions for domestic antidumping measures. The Indonesian government has counted 2 (two) times to date, issuing rules that generally regulate the imposition of antidumping duties. First, the imposition of antidumping duties in Indonesia is regulated in Government Regulation Number 34 of 1996 concerning Antidumping duties and Remuneration import duties. However, in 2011, the government issued Government Regulation No. 34 of 2011 concerning Anti-dumping measures, reward measures, and trade security measures in place of Government Regulation No. 34 of 1996.

**Price**

In economics, applying a pricing model in the market in terms of demand and supply will shape the market economy to be efficient. Dinar and Hasan (2018) explain that demand and supply events in economic law are a form of functional relationship where the two events influence each other. An increase in demand will result in a decrease in supply and vice versa.

Demand and supply are influential factors in international trade activities. It explains how the demand made by buyers (importing countries) and the supply made by sellers (exporting countries) are interconnected to reach an equilibrium point related to price determination. In ceteris paribus conditions, demand theory applies where a price increase will result in a decrease in demand and vice versa.

**Market Share**

Market share or market share is a comparison between the volume of imports from a party with the total volume of imports that occur in a country. In this study the market share obtained from the calculation of the volume of imports of target countries with non-target countries to Indonesia divided by the volume of imports of PSF commodities around the world to Indonesia. A larger market share of imports from the target country indicates the dependence of the Indonesian market on PSF commodities from the target country (Tjahjasari, 2015).
According to Lee et al. (2013), market share is used to illustrate the importance of the market of the country of imports to the domestic market. This variable can also describe the dependence of Indonesia's domestic market on other countries. According to Salvatore (2013), dumping can have an impact on obtaining benefits over monopolies or control of foreign markets. With the increasing market share, the value of imports will also increase.

**Exchange Rate**

The exchange rate is the value of goods or prices obtained from exchange activities in trade between countries (G. Mankiw, 2016). The exchange rate becomes one of the determinants in import-export activities. In theory generally accepted in international trade, should the strengthening of the Rupiah against the USD (reduced numerically) will result in a decline in the price of a commodity in trade, which has an impact on higher demand. High demand can increase the import value of a commodity.

Niels (2003) in his research on imports and dumping actions that occurred in Mexico concluded a similar thing where an increase in the exchange rate or appreciation of the Peso against foreign currencies had an impact on the increase in the value of dumping imports from countries that practiced the practice. However, Tjahjasari (2015) in his research concluded that the Rupiah exchange rate negatively affects the volume of imports of steel products from countries that practice dumping.

**Previous Research**

Prusa's (1996) research is one of the early projects conducted to provide evidence of the effectiveness of the imposition of antidumping measures in the United States through the occurrence of trade restrictions against the target country of the imposition of antidumping and trade diversion that occurs as another effect of it. Some previous researchers also analyzed the impact of antidumping measures from the point of view of trade restrictions and diversion. Niels (2003) in his research on antidumping policies implemented in Mexico found the conclusion that there is a significant effect of trade restrictions during the imposition of antidumping through a decrease in the value and volume of imports from the target country. However, the study did not find sufficient evidence for the transfer of trade to other countries.

An empirical study conducted by Lee et al. (2013) through a study entitled “Invisible Trade Barriers: Trade Effects of US Antidumping Actions Against the people's Republic of China” was also conducted to determine the impact of the imposition of antidumping measures. Lee et al. (2013) observed the antidumping measures the United States took against the PRC over dumping cases in the 1996 to 2008 period and found no restrictions or diversion of trade. When the antidumping tariff comes into force, the relevant imports have decreased
sharply and vice versa there is an increase in imports from countries that are not subject to antidumping tariffs. In addition, it was found that in the period of conducting antidumping investigations, there was a decrease in imports from target countries.

Aşgar (2013) in a study using the generalized method of moments observed Turkey’s antidumping actions against countries that were the subject of antidumping investigations and other countries from 1992 to 2008. In line with research conducted by Lee et al. (2013), antidumping measures succeeded in providing an effective restrictive effect through a significant reduction in the value of imports from antidumping target countries. Trade transfer also occurs in non-target countries but the resulting impact is not large enough. On the other hand, it was found that effectively, antidumping measures can protect the domestic industry from the adverse effects generated by dumping measures.

Several previous studies have also observed how the impact of antidumping measures on dumping practices that afflict Indonesia. Alhayat (2014) in his research, made observations on antidumping actions in Indonesia in general on the value and volume of imports during the year 1996 to 2010. Empirically, the study concluded that antidumping measures were not effective in reducing the import rate of target countries. On the other hand, in aggregate, there was evidence that there was a suppression of the import rate as a net effect of trade restrictions and transfers that only occurred during the investigation period of antidumping but increased again after the investigation period was completed.

In addition to determining the effect in general, research on the impact of antidumping measures was also carried out specifically on imports of steel commodities. Tjahjasari (2015) conducted a study to determine how the impact of the imposition of antidumping measures on the volume of imports of steel products in Indonesia. The study was conducted on the subject of target countries consisting of the PRC, Japan, South Korea, Taiwan, and Vietnam as well as other countries that are not targeted by the imposition of antidumping measures. The effect of restriction through a negative significant influence on the volume of imports from target countries and trade diversion through a positive significant influence on the volume of imports from non-target countries occurred during the imposition of antidumping measures on imports of steel products in the study.

Nurcahyo and Purwana’s (2020) research were also conducted to determine the impact of the imposition of specific antidumping measures on imports of certain commodities. The study analyzed the effect of the imposition of antidumping duties on the import value of tinplate products during the year 2014 to 2018. The results of the study are the conclusion that there is a difference in the value of imports in general between before and after the imposition
of antidumping duties. However, concerning imports from target countries, it has not been concluded that there is a difference in value in the period before and during the imposition of antidumping measures.

In contrast to previous studies, this study was conducted to analyze how the impact of antidumping actions that occur specifically on the value of imports of polyester Staple Fiber (PSF) commodities in Indofromsia from 2000 to 2020 which includes the period before and during antidumping duties on imported PSF commodity dumping is applied.

3. RESEARCH METHODS

Types Of Research

This research uses quantitative methods. Researchers use quantitative methods because they use quantitative data. According to Sugiyono (2013), the quantitative method is a research method based on the philosophy of positivism to test established hypotheses. Researchers use statistical analysis to determine whether there is an influence between the independent variable and the dependent variable.

Data types and sources

This study uses secondary data. The researcher obtained data from the Ministry of Trade for the 2010-2020 period. The timeframe was due to the provisions on anti-dumping import duties on PSF products that were enforced from 2010-2020. The research data is time series data. Time series data is data collection on an object within a particular time. The population in this study is Indonesia's trading partner countries that export PSF commodities or goods included in the HS Code 5503.20.00.00. Indonesia's trading partners consist of targeted countries and non-target countries. The target countries are India, China, and Taiwan. Non-target countries are other than India, China, and Taiwan.

Data Collection Methods

Researchers collect secondary data from several sources. Researchers obtained PSF import data, PSF unit prices, and PSF market share from data from the Ministry of Trade. Meanwhile, the rupiah exchange was obtained from data from Bank Indonesia.

Research variables and operational definition of variables

Dependent Variable

A dependent variable or also referred to as a dependent variable, output, criteria, or consequent is a variable that is influenced or caused by the independent variable (Sugiyono, 2013). The dependent variable is a variable that is being estimated that can be described as the
result of a certain value of the independent variable (Lind, 2015). The dependent variable in this study is the value of annual imports from the target country of the imposition of antidumping duties consisting of India, China, and Taiwan on Polyester Staple Fiber (PSF) commodities in the range of 2001 to 2020 per quarter. The value of imports in this variable is indicated by the unit kilogram (kg) per quarter. This variable is proxied using VALTAR.

**Independent Variable**

The independent variable or referred to as the independent variable, stimulus, predictor, or antecedent is a variable that affects or causes changes or the emergence of the dependent variable (Sugiyono, 2013). The influence of the independent variable on the dependent variable can be either positive or negative influence (Sekaran & Bougie, 2016). The independent variables used in this study are as follows:

a. **Antidumping Duties Imposition**

This variable is a dummy variable over the time range of the imposition of antidumping duties. (Setiawan & Hakim, 2013; Nesti, et al., 2018; Astutii, 2001; Dianita & Zuhroh, 2018).

b. **Price**

Price is a variable in the form of unit prices for PSF commodities. This variable is obtained from the import value of each target country of anti-dumping policy divided by the volume of imports into kg units carried out. In this study the variable price using units of USD/kg. Tjahjasari (2015 film).

c. **Market Share (Market share)**

Market share is a variable that refers to the market share of 3 (three) target countries for the import of PSF in Indonesia. Market share is obtained by calculating the volume of imports of target countries to non-target countries to Indonesia divided by the volume of imports of PSF commodities around the world to Indonesia. In this study market share variable uses the unit percent (%). Lee et al. (2013), Alhayat (2014), Tjahjasari (2015).

d. **Exchange Rate**

Exchange Rate is a variable that refers to the average real exchange rate of the Indonesian currency (Rupiah) against the United States Dollar (USD) during the research period Niels (2003), Tjahjasari (2015).

**Data Analysis Methods**

The method used in this study is time series data regression analysis using Error Correction Model (ECM) approach. The stages of analysis in this study are composed of the stationarity test (Unit Root Test), degree of Integration Test, Cointegration test, Error Correction model (ECM) regression test, and classical assumption Test.
After determining and selecting the best regression model to be used, then classical assumption testing is carried out. The classic assumption test is carried out to provide certainty that in the research carried out, there is no bias (Santoso, 2014). This is done in connection with the Gauss-Markov theorem, where statistical testing is carried out to detect deviations in linear regression models. The classic assumption test used in this study is the normality Test, multicollinearity Test, heteroscedasticity Test, autocorrelation test, hypothesis test, coefficient of determination test (R2), simultaneous test (F-test), and Partial Test (t-test).

4. ANALYSIS AND DISCUSSION

Stationarity Test (Unit Root Test)

According to Ekananda (2018) time series data can be said to be stationary if stochastically, the data shows a constant pattern of variation over time or there can be no decrease or increase in data that is too striking. The stationarity test is done by using the Augmented Dickey-Fuller test (ADF) to see the magnitude of Mackinnon’s probability value. If the value of MacKinnon probability is greater than 5% (0.05), then the data can be concluded is not stationary, and vice versa if the value of MacKinnon probability is less than 5% (0.05), then the data can be concluded stationary. Based on the test results at the level of the level shows that each variable is not stationary because the magnitude exceeds the value of the set α by 5% (0.05). Therefore, the integration test is carried out at the first differential level.

<table>
<thead>
<tr>
<th>No.</th>
<th>Variable</th>
<th>Level</th>
<th>Description</th>
<th>First Difference</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>ln_VALTAR</td>
<td>0.2858</td>
<td>Not stationer</td>
<td>0.0000</td>
<td>Stationer</td>
</tr>
<tr>
<td>2.</td>
<td>BMAD</td>
<td>0.7579</td>
<td>Not stationer</td>
<td>0.0000</td>
<td>Stationer</td>
</tr>
<tr>
<td>3.</td>
<td>PRICE</td>
<td>0.5556</td>
<td>Not stationer</td>
<td>0.0000</td>
<td>Stationer</td>
</tr>
<tr>
<td>4.</td>
<td>MS</td>
<td>0.1031</td>
<td>Not stationer</td>
<td>0.0000</td>
<td>Stationer</td>
</tr>
<tr>
<td>5.</td>
<td>ln_ER</td>
<td>0.8765</td>
<td>Not stationer</td>
<td>0.0000</td>
<td>Stationer</td>
</tr>
</tbody>
</table>

Source: Prepared by the author

The test results concluded that the data of each variable in the study has been stationary at the level of the first difference. This means that each data in the study is integrated into the first degree and has a long-term relationship.

Cointegration Test

The cointegration test is a follow-up test after the stationarity test and the degree of integration test to determine whether or not there is a long-term relationship between the independent variable and the dependent variable in the study. According to Gujarati and Porter (2009) variables in the study can be said to have cointegration if there is an equilibrium...
relationship in the long term. The cointegration test was conducted using the Engel-Granger method by detecting the presence or absence of cointegration through the stationarity test residual value of regression results.

Based on the results of the stationarity test on the residual value of the target country research variable, it can be seen that the Mackinnon probability value shows 0.0000, which means that the value is less than the value of the designated 5% (0.05). This indicates the cointegration between variables in the study. Gujarati and Porter (2009) revealed in Granger representation theory that if there is cointegration between independent and dependent variables, the relationship between the two can be expressed using the Error Correction Model (ECM).

Table 2 stationarity test results on Residual value of Target Country Research variable

<table>
<thead>
<tr>
<th>Variable</th>
<th>ADF t-statistics</th>
<th>MacKinnon Critical Value</th>
<th>Descriptions</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECT</td>
<td>-5.800</td>
<td>-3.539</td>
<td>Cointegration</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-2.907</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>-2.588</td>
<td></td>
</tr>
</tbody>
</table>

Source: Output of STATA 16 application

**Error Correction Model (ECM)**

Error Correction Model (ECM) is used in the study to determine how the long-term and short-term effects of each independent variable on the dependent variable. Cointegration that occurs in this study shows the existence of a long-run equilibrium relationship between the independent variable and the dependent variable. However, in the short term, there is not necessarily a balance. ECM uses adjustment to make corrections that occur in the short-term imbalance towards long-term balance (Juanda & Junaidi, 2012). ECM is used in this study to determine whether the time series financial data used has a long-term trend or balance. ECM is well used in the dynamic model approach because of the ability to analyze short-term and long-term phenomena as well as solve the problem of time series variables that are not stationary and the presence of spurious regression in econometric analysis (Gujarati & Porter, 2009).

In this study, in testing the hypothesis to determine the effect of the imposition of antidumping duties on the value of imports of PSF commodities of the target country, the basic equation is used as follows:

$$\ln VALTAR_t = \alpha + \beta_1 BMAD_t + \beta_2 Pricet + \beta_3 Mst + \beta_4 \ln ER_t + \varepsilon \ldots \ldots \ldots (1)$$

The results of cointegration tests that have been previously performed indicate that the residual value of the long-term equation is stationary so that the ECM can be used to determine the short-term equation with the substitution of the residual value variable lag (ECT). The
dependent and independent variables in the short-term equation are at the same level of differentiation based on the results of the integration degree test. The short-term equations used in this study for hypothesis testing through the ECM model are as follows:

\[
\Delta \ln \text{VALTAR}_t = \alpha + \beta_1 \Delta \text{BMAD}_t + \beta_2 \Delta \text{Pricet} + \beta_3 \Delta \text{Mst} + \beta_4 \ln \Delta \text{ER}_t + \beta_5 \text{ECT}_{t-1} + \varepsilon ..
\]

(2)

The equation is an estimation of regression in the short term using the Engle-Granger approach. If the probability value of the residual variable is less than the set 5% (0.05), then the model used is appropriate. Conversely, if the probability value of the residual variable is greater than the value of \( \alpha \) set at 5% (0.05), then the model used is not appropriate.

**Classical Assumption Test**

According to Santoso (2014), the classical assumption test is carried out to provide certainty that in the research conducted there is no bias. Statistical testing is done based on the Gauss-Markov theorem to detect any deviation in the linear regression model. The classical assumption test conducted in this study is based on Best Linear Unbiased Estimator (BLUE) with criteria that can be proven through the normality test, multicollinearity test, heteroscedasticity test, and autocorrelation test.

**Normality Test**

The normality test in this study uses the results of statistical analysis because it is considered more objective. In this study, the Shapiro-Wilk test was performed to test the normality of the data. Normality testing using the Shapiro-Wilk test has been widely used in research. The advantage of the Shapiro-Wilk test is that it is considered reliable on a small number of samples.

The test results showed that the Shapiro-Wilk test results obtained a probability value (Prob>\( z \)) of 0.50368 or 50.368% for the target country. The value is greater than the value of \( \alpha \) which is set at 5% (0.05) so it can be concluded that \( H_0 \) is accepted or the residual value is normally distributed and meets the requirements of normality.

### Table 3 Multicollinearity Test Results

<table>
<thead>
<tr>
<th>Variable</th>
<th>VIF</th>
</tr>
</thead>
<tbody>
<tr>
<td>D1.BMAD</td>
<td>1.24</td>
</tr>
<tr>
<td>D1.PRICE</td>
<td>1.46</td>
</tr>
<tr>
<td>D1.MS</td>
<td>1.06</td>
</tr>
<tr>
<td>D1.In_ER</td>
<td>1.21</td>
</tr>
<tr>
<td>ECT(-1)</td>
<td>1.16</td>
</tr>
<tr>
<td>Mean VIF</td>
<td>1.22</td>
</tr>
</tbody>
</table>

Source: Output of STATA 16 application
Multicollinearity occurs when the VIF value of each variable is greater than 10 and vice versa if the VIF value is less than 10 then there is no multicollinearity. Thus, it can be concluded that there is no multicollinearity problem because both the value of each independent variable and the average value of VIF is less than 10.

**Heteroscedasticity Test**

The heteroscedasticity test is performed to determine whether there is an inequality in the regression model variants from one observation to another. The heteroscedasticity test has a hypothesis where $H_0$ is heteroscedasticity does not occur and $H_1$ is heteroscedasticity occurs. To determine the presence or absence of problems related to heteroscedasticity is identified by using the Breusch-Pagan test.

Heteroscedasticity test results show that the probability value of the Pagan Breusch test is equal to 0.1737 for the target country or more than the value of the set $\alpha$ of 5% (0.05) so $H_0$ is accepted. On this, it can be concluded that there is no problem of heteroscedasticity.

**Autocorrelation Test**

Gujarati and Porter (2009) explain that in multiple linear regression models, autocorrelation can be interpreted as the correlation between one residual and another residual. An autocorrelation test is done to detect the correlation problem. In this study autocorrelation test using the Durbin-Watson D test. The test was conducted by comparing the Durbin-Watson statistics obtained with the Durbin-Watson table. The result of the Durbin-Watson D test shows that the value of Durbin-Watson statistics obtained on the equation of the target state is equal to 1.907055, so when compared with the value in the scheme, the value is between the value of $d_U$ to 4-$d_U$. This can provide a conclusion that there is no autocorrelation problem in the target country research model.

**Hypothesis Test**

**ECM regression analysis of Target countries**

For the ECM regression equation in the long and short term, the test results are obtained by using the basis of simultaneous significance testing or F test, testing of the coefficient of determination, and partial significance testing or t-test. The simultaneous significance test or F test aims to test the effect of all independent variables in the model simultaneously on the dependent variable in the study. In addition, the simultaneous significance test also aims to test whether the research model is significant. In this equation, simultaneous significance tests were conducted to determine whether the variable of antidumping duties imposition (BMAD), PSF commodity unit price (PRICE), PSF commodity market share (MS) and Rupiah exchange
rate against USD simultaneously affect the value of PSF commodity imports from the target country (VALTAR).

Table 4 Results of the T-test (partial significance test) of the ECM equation over the Target country

<table>
<thead>
<tr>
<th>ECM</th>
<th>Adj. R-Squared</th>
<th>Prob. F-Statistic</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Long term</td>
<td>0.9292</td>
<td>0.0000</td>
<td>Significant</td>
</tr>
<tr>
<td>Short term</td>
<td>0.6586</td>
<td>0.0000</td>
<td>Significant</td>
</tr>
</tbody>
</table>

Source: Output of STATA 16 Application

Based on Table 4 it is known that the probability value of F in the long and short term is 0.0000. The value is less than the value of \( \alpha \) set at 5% (0.05). If the probability value of F is less than \( \alpha \) value, it can be said that in the long run the variable of antidumping duties imposition (BMAD), PSF commodity unit price (PRICE), PSF commodity market share (MS), and Rupiah exchange rate against USD (ER) simultaneously have a significant effect on the value of PSF commodity imports from the target country (VALTAR). In the short term, the variable of antidumping duties imposition (BMAD), the unit price of PSF commodity (PRICE), the market share of PSF commodity (MS), and the Rupiah exchange rate against USD (ER) at the first differentiating level as well as the lag variable ECT or residual simultaneously have a significant effect on the value of PSF commodity imports from the target country (VALTAR). After the simultaneous significance test, the coefficient of determination test is performed.

The coefficient of determination has a role as a measuring tool to determine how much the ability of regression models with independent variables in explaining the variation of the dependent variable. In this equation, the coefficient of determination assesses how much the variable value of imported PSF commodities from the target country is affected by the dummy variable of antidumping duties imposition, the variable unit price of PSF commodities, the variable market share of PSF commodities, and variable exchange rate of Rupiah against USD. Based on Table 4 adjusted value of R2 or coefficient of determination of the long-term equation of the research model is equal to 0.9292. This means that the variation of the independent variable can explain the dependent variable of 92.92% while the rest, 7.908% (100% - 92.92%) described by other variables outside the study. Furthermore, the value of adjusted R2 or coefficient of determination of the short-term equation of the research model is equal to 0.6586. This means that the variation of the independent variable can explain the dependent variable of 65.86% while the rest, 34.14% (100% - 65.86%) is explained by other variables outside the study. After the simultaneous significance test coefficient determination test conducted partial significance test.
A partial significance test or t-test is done by looking at the probability value of t. If the probability value is smaller than the significance level or value of the PSF set at 5% (0.05), it can be concluded that each of the independent variables is a partially significant effect on the dependent variable, in this case, the value of PSF commodity imports from the target country. The results of the partial significance test over the long-term ECM equation of the target country are as follows:

Table 5 results of the T-test (partial significance test) long-term ECM equation of the Target country

<table>
<thead>
<tr>
<th>No.</th>
<th>Independent Variable</th>
<th>T probability value</th>
<th>Test result against α (0.05)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>BMAD</td>
<td>0.002</td>
<td>Significant</td>
</tr>
<tr>
<td>2.</td>
<td>PRICE</td>
<td>0.000</td>
<td>Significant</td>
</tr>
<tr>
<td>3.</td>
<td>MS</td>
<td>0.000</td>
<td>Significant</td>
</tr>
<tr>
<td>4.</td>
<td>ln_ER</td>
<td>0.013</td>
<td>Significant</td>
</tr>
</tbody>
</table>

Source: Processed by the author from STATA 16 application output

In contrast to the results of the significance test that has been carried out on the equation of the target country with the ECM in the long term, the results of the significance test carried out on the equation of the target country with the ECM in the short-term show that the antidumping duties and ER variables show no significant effect on the value of PSF commodity imports. The results of the partial significance test of the target country’s short-term ECM equation are shown in Table 6.

Table 6 t-test results (partial significance Test) short-term ECM equation of the Target country

<table>
<thead>
<tr>
<th>No.</th>
<th>Independent Variable</th>
<th>T probability value</th>
<th>Test result against α (0.05)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>D1.BMAD</td>
<td>0.861</td>
<td>Not significant</td>
</tr>
<tr>
<td>2.</td>
<td>D1.PRICE</td>
<td>0.000</td>
<td>Significant</td>
</tr>
<tr>
<td>3.</td>
<td>D1.MS</td>
<td>0.000</td>
<td>Significant</td>
</tr>
<tr>
<td>4.</td>
<td>D1.ln_ER</td>
<td>0.600</td>
<td>Not significant</td>
</tr>
<tr>
<td>5.</td>
<td>ECTt-1</td>
<td>0.000</td>
<td>Significant</td>
</tr>
</tbody>
</table>

Source: Processed by the author from STATA 16 application’s output

Based on the values obtained in the t-test or partial significance test in Table 5 and Table 6, can be interpreted as follows:

1. In the long run the dummy variable of BMAD has a probability value of 0.002 t or smaller than the value of the 5% (0.05). This means that partially the anti-dumping duties variable has a significant effect on the value of PSF commodity imports from the target country in the long term. This is related to the research hypothesis as follows: $H_{0,1}$: the long-term imposition of antidumping duties has no significant effect on the import value of PSF commodities from the target countries.
**H_{1.1}:** the long-term imposition of BMAD has a significant effect on the import value of PSF commodities from the target countries.

Based on this hypothesis, it can be interpreted that \( H_{0.1} \) is rejected so that it is concluded that there is sufficient evidence to state that the imposition of antidumping duties in the long term has a significant effect on the value of PSF commodity imports from the target country.

Furthermore, in the short-term variable dummy imposition of antidumping duties (antidumping duties) has a probability value of 0.861 or greater than the value of the assigned 5% (0.05). This means that there is not enough evidence to state that partially the BMAD variable has a significant effect on the value of PSF commodity imports from the target country in the short term. This is related to the research hypothesis as follows:

\( H_{0.2}: \) the short-term imposition of antidumping duties has no significant effect on the import value of PSF commodities from the target countries.

\( H_{1.2}: \) the short-term imposition of antidumping duties has a significant effect on the import value of PSF commodities from the target countries.

Thus, it can be interpreted that there is not enough evidence to reject \( H_{0.2} \) so it is concluded that the imposition of antidumping duties in the short term has no significant effect on the value of PSF commodity imports from the target country.

2. In the long-term and short-term variable PSF commodity unit price (PRICE) has a probability t value of 0.000 or less than the value of \( \alpha \) set at 5% (0.05), so it can be concluded that there is sufficient evidence that this variable is partially in the long-term and short-term significant effect on the value of PSF commodity imports from the target country.

3. In the long-term and short-term variable PSF commodity market share (MS) has a probability value of T of 0.000 or less than the value of \( \alpha \) set at 5% (0.05), so it can be concluded that there is sufficient evidence that this variable is partially in the long term and short term has a significant effect on the value of PSF commodity imports from the target country.

4. In the long term, the rupiah exchange rate Variable against USD (ER) has a probability value of t of 0.002 or less than the value of \( \alpha \) set at 5% (0.05), so it can be concluded that there is sufficient evidence that this variable part in the long term has a significant effect on the value of PSF commodity imports from the target country. However, in the short term, the variable exchange rate of the Rupiah against USD (ER) has a probability value
of $T$ of 0.600 or greater than the value of $\alpha$ set at 5% (0.05), so it can be concluded that there is not enough evidence that this variable part in the short term has a significant effect on the value of PSF commodity imports from the target country.

5. In the short term, the lag variable ECT or residual (ECTt-1) has a probability value of $T$ of 0.000 or less than the value of $\alpha$ set at 5% (0.05), so it can be concluded that there is sufficient evidence that this variable part in the short term has a significant effect on the value of PSF commodity imports from the target country.

**Discussion**

Table 7 results of long-term and short-term estimation of the target country equation

<table>
<thead>
<tr>
<th>Variable</th>
<th>Long – term</th>
<th>Short – term</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Coefficient</td>
<td>Probability</td>
</tr>
<tr>
<td>Cons</td>
<td>0.472352</td>
<td>0.920</td>
</tr>
<tr>
<td>BMAD</td>
<td>0.5017364*</td>
<td>0.002</td>
</tr>
<tr>
<td>PRICE</td>
<td>1.617191*</td>
<td>0.000</td>
</tr>
<tr>
<td>MS</td>
<td>3.441803*</td>
<td>0.000</td>
</tr>
<tr>
<td>ln_ER</td>
<td>1.262294*</td>
<td>0.013</td>
</tr>
<tr>
<td>ECT(-1)</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Description: * Significance at Level 5%

Source: prepared by the author of the STATA 16 application Output

In addition to obtaining long-term estimates of regression results in modeling, the use of the Error Correction Model (ECM) provides short-term estimates in research that can provide conclusions or discussions about the relationship between the variable imposition of anti-dumping duties, PSF commodity unit price, PSF commodity market share, and the exchange rate of the variable value of PSF commodity imports in Indonesia. The value of the coefficient Error Correction Term (ECT) gives an idea of how fast the time is in achieving the equilibrium value due to deviations in the balance of the relationship between variables in the short term. The ECT value is 0.5759048 which can be interpreted in the previous period the model corrects the error of 57.59048% which can describe the length of short-term to long-term adjustments.

The anti-dumping duties imposition dummy variable (antidumping duties) in this equation is used to determine how the difference between before and during antidumping duties is imposed on the import of PSF commodities from the target country. Antidumping duties in the long term have a significant effect and have a positive value. While in the short term, the variable antidumping duties have no significant effect. Antidumping duties have a different relationship or influence on the value of imports of PSF commodities from target countries in the long and short term. In the long term there is a relationship or influence
positively and significantly while in the short term there is a relationship or influence negatively but not significantly. In the short term, the impact of the imposition of antidumping duties following the results of previous studies where Lee et al. (2013), Avşar (2013), and Tjahsari (2015) also suggested that the dummy variable of the imposition of antidumping policy negatively affects the value of imports of related commodities from the target country. However, in the long run, this contradicts previous research because the imposition of antidumping duties has a significant positive effect on increasing the value of imported PSF commodities.

Variable commodity unit price PSF (PRICE) in the long term has a coefficient of 1.617191. This means that under the condition that other variables are assumed to be constant, each increase in the unit price of PSF commodities by 1 USD/kg will affect the increase in the value of PSF commodity imports from the target country by 161.7191% per quarter while in the short term, the variable PRICE has a coefficient of 2.082437. This means that under the condition that other variables are assumed to be constant, each increase in the unit price of PSF commodities by 1 USD/kg will affect the increase in the value of PSF commodity imports from the target country by 208.2437% per quarter. In the long and short term, the PRICE is not by previous research where Tjahjasari (2015) in his research concluded that the price will negatively affect the value of imports of PSF commodities.

This means that the higher the unit price of the PSF commodity, the higher the import value of the PSF commodity from the target country. Based on demand theory, it is known that the increase or decrease in price will be inversely proportional to the amount of demand. However, the relationship between price increases that occur with an increase in demand may occur as a result of other factors. Mankiw (2018) states that one of the factors is the number of consumers concerning the amount of consumption. The increase in prices may not reduce the amount of demand due to the condition that domestic PSF producers cannot meet the industry's needs for PSF commodities in the country. The results of this study are conformable the results of previous studies where Tjahjasari (2015) stated that the price has harms the number of imports.

Variable commodity market share PSF (MS) in the long term has a coefficient of 3.441803. This means that under the condition that other variables are assumed to be constant, each increase in the PSF commodity market share of 1% will affect the increase in the value of PSF commodity imports from the target country of 3.441803% per quarter while in the short term, the MS variable has a coefficient of 3.063999. This means that under the condition that other variables are assumed to be constant, each increase in the PSF commodity market share
of 1% will affect the increase in the value of PSF commodity imports from the target country of 3.063999% per quarter.

MS has the same relationship or influence on the value of imports of PSF commodities from target countries in the long and short term, which has a positive and significant effect. The results of this MS-related research are in line with previous research where Lee et al. (2013), (Alhayat, 2014), and Tjahjasari (2015) suggested that market share had a positive impact on the import value of PSF commodities. This is related to one of the objectives of dumping where according to Salvatore (2013), predatory dumping can have an impact on obtaining profits from monopolies or control of foreign markets. With the increasing market share, the value of imports will also increase.

In the long term, the variable exchange rate against USD (ER) has a coefficient of 1.262294. This means that under the condition that other variables are assumed to be constant, each increase (weakening) of the Rupiah exchange rate against USD by 1% will affect the increase in the value of PSF commodity imports from the target country by 1.262294% while in the short term, the ER variable has a coefficient of 0.4275234 but does not significantly affect. In theory generally accepted in international trade, should the strengthening of the Rupiah against the USD (reduced numerically) will result in a decline in the price of a commodity in trade, which has an impact on higher demand. High demand can increase the import value of a commodity.

ER has the same relationship or influence on the value of imports of PSF commodities in the long and short term, which has a positive effect. However, in the long term, the effect occurs significantly while not in the short term. Niels (2003) in his research on imports and dumping actions that occurred in Mexico concluded a similar thing where an increase in the exchange rate or appreciation of the Peso against foreign currencies had an impact on the increase in the value of dumping imports from countries that practiced the practice. However, Tjahjasari (2015) in his research concluded that the Rupiah exchange rate negatively affects the volume of imports of steel products from countries that practice dumping.

5. CONCLUSION AND SUGGESTIONS

Based on the analysis of the effect of the imposition of antidumping duties and other variables on the import of PSF in Indonesia, it can be concluded that in the long term the dummy variable of the imposition of antidumping duties partially has a positive and significant effect on the value of PSF commodity imports from the target country. Meanwhile, in the short term, the dummy variable of antidumping duties partially does not affect the import value of
PSF commodities from the target country. This shows that the imposition of antidumping duties does not directly have a restrictive effect on the import value of PSF commodities.

Meanwhile, for other variables, unit price, and market share variables, it shows that partial variables in the long and short term have a significant effect on the import value of PSF commodities. As for the exchange rate variable, partially in the long term has a significant effect on the value of imports of PSF commodities. However, the exchange rate variable partially in the short term does not affect the value of imports of PSF commodities.

Limitations of this study are that the study was only conducted on a group of target countries and not the target, not conducted per country exporter, so the results of the study cannot provide an interpretation of the conditions of how the impact of the imposition of antidumping duties for each country exporter. To get more accurate results, a variable number of tariffs charged for each exporter from each target country is recommended.

The author gives some suggestions that can be used as consideration in determining the policy. The government is expected to make efforts to set a more balanced anti-dumping duties tariff against PSF commodity exporters abroad for the dumping practices carried out. With the imposition of fairer antidumping duties tariffs, the unfair trade practice of dumping actions will be overcome, although the import value of PSF commodities in Indonesia also has no impact. In addition, efforts can be made to suppress the import value of PSF commodities by strengthening the upstream sector of the PSF in the country so that industries or companies that need PSF do not need to import from abroad if indeed the availability of domestic raw materials can be overcome both in quantity and quality.

REFERENCES
https://ejournal.umm.ac.id/index.php/jie/article/download/6972/5904


https://doi.org/10.2139/ssrn.1188722


https://doi.org/10.31092/jpbc.v4i2.840


https://doi.org/10.3386/w7340


https://www.jstor.org/stable/43133568


