# THE EFFECT OF GLOBAL MACROECONOMIC ON INDONESIAN TEA TRADE IN INTERNATIONAL MARKET

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#### ABSTRACT

This study aims to analyse the competitiveness of Indonesian tea trade in the international market, analyse global macroeconomic factors (exchange rate, export price, economic distance, export tariff, SPS non-tariff policy and TBT non-tariff policy) that affect the value of Indonesian tea exports in the international market and analyse the long-term effect of Indonesian tea trade policies (export price, export tariff, SPS non-tariff policy and TBT policy) on the value of Indonesian tea exports. The study used panel data from 2013 - 2023 with the main destination countries being Malaysia, Russia, the United States, China and Pakistan. The results showed that Indonesia has a level of competitiveness in the main export destination countries of Malaysia, Russia, the United States, China and Pakistan, The results showed that Indonesia has a level of competitiveness in the main export destination countries of Malaysia, Russia, the United States, China and Pakistan with an RCA (Revealed Comptetitive Advantages) value greater than 1. When viewed as a short-term effect using gravity panel regression, the results showed that export tea prices, imported tea prices, export tariffs, SPS non-tariff policies and TBT non-tariff policies had a significant effect on the value of tea exports, while the exchange rate and economic distance had no effect on the value of tea exports Such as a long-term effect using Fully Modiifed Ordinary Least Square (FMOLS), Indonesian tea trade policies such as export prices, export tariffs and SPS non-tariff policies have a long-term influence on the value of tea exports.

Keywords: Indonesian tea, trade, global macroeconomic, international market

#### **INTRODUCTION**

Trade in Indonesian tea products in the international market is a crucial aspect that contributes to the country's economy. Indonesia, as one of the largest tea producers in the world, has great potential to increase tea exports if it can improve the quality and competitiveness of its products. However, there are still various challenges that must be overcome so that Indonesian tea products can compete better in the global market. The desire to improve and expand the export market should be accompanied by an increased understanding of the dynamics of consumption and global market trends. The competitiveness of Indonesian tea products in the international market cannot be separated from the implementation of innovative marketing strategies, including the use of attractive branding and packaging (Putri et al., 2021). Overall, to increase trade in Indonesian tea products in the international market, synergy between production quality, marketing strategies, and the right market selection is needed. These steps will not only facilitate an increase in export volume but also encourage sustainable economic growth for local tea producers in Indonesia (Putro et al., 2024).

According to Handoyo et al (2023), Knorr & Augustin (2021) and Jin & Xu (2019) tea infusion possesses several outstanding health-promoting impacts to human such as antioxidant, anticancer, antidiabetic, cardiovascular-preventive, neuro-protective and so on. Due to these beneficial effects, the popularity of tea is increasing globally. The worldwide tea consumption reached over 6.6 billion kilograms in 2021. China, India, Kenya, Sri Lanka, Vietnam, and Indonesia are the major tea manufacturing countries in the world.

Involvement of the Indonesian tea industry in a wider global network. By following the trend of globalisation and creating global value chains, Indonesia can increase its competitiveness and benefit more from international trade (Setiana & Hapsari, 2024). In this capitalism-based society, it is important for Indonesia to not only engage in production but also innovate in the marketing and distribution of tea products to remain relevant in the global market. to achieve sustainable economic growth, the processing of tea products must be improved. Shifting the focus from raw material exports to value-added products such as packaged tea and organic tea will contribute to greater economic stability and can meet the growing global consumer demand (Nayantakaningtyas et al., 2017). The relationship between international trade policies, including tariff setting and exchange rate effects, and Indonesia's economic growth. Policies that support market access and trade efficiency can have positive implications for the tea sector and other sectors (Purba et al., 2023).

According to Iqbal et al (2022) and Anh & Gan (2020) the export component is an important component for a country to increase its competitiveness. If a country succeeds in increasing its competitiveness, then there will be greater potential to increase market area both at the global level as well as domestic. On the other hand, if the country cannot increase its competitiveness, it will face pressure from competing countries.

In the context of international trade which is currently experiencing an era globalization, trade competition increases throughout the world. Every producing country, including Indonesia, to be able to compete strongly in the global market, needs to increase the value and volume of its exports. The leading Indonesian plantation commodity that has the opportunity to increase the value and volume of exports to the global market is tea. Currently, the majority of Indonesian tea exports are in the form of tea, where 80% of the population is the tea. The volume and exports of Indonesian tea tend to fluctuate in the period 2018 - 2023. This can be seen from the graphic image of the volume and value of Indonesian tea exports as Figure 1.



Figure 1. Tea volume and value of Indonesia' export in International Market

From the graph above, it can be seen that there has been a significant decline in export volume in the 2018 - 2023 period. This has caused the value of tea exports to also decline. Tea exports were declining due to limited tea plantation land, poor tea quality and there are indications that developed countries are tightening their policies to hinder Indonesian tea exports.

Indonesia is one of the ten largest tea exporting countries in the world, with annual exports of over 100 million USD. Indonesian tea has large export potential to developed

countries such as Russia, England, the United States, Germany and the United Arab Emirates. The decline occurred due to the implementation of export barrier policies to export destination countries.

According to Sibuea et al (2023), Goeb et al (2022) and Nhon et al (2021) Most subtropical regions, local policies have been formulated to promote tea cultivation in order to achieve profitable livelihood for rural farmers. Moreover, the land tenure reform has given growing autonomy of household, and the small landholders are more willing to respond to the economy-oriented policies rather than the conservation policies. It is not a plausible solution that simply restricts tea cultivation to conserve forests. Land policy makers are faced with the challenge to achieve a balance between the potentially conflicting objectives between economic development and ecological conservation. An understanding of the trade-off of tea cultivation is vital for designing planning instruments and policy interventions

Indonesia's tea trade plays a crucial role in improving the country's economy, especially through the value of exports generated. Several factors such as export prices, exchange rates, economic distance, as well as sanitary and phytosanitary (SPS) and TBT (Technical Barriers to Trade) policies greatly affect Indonesia's tea export performance in the international market. The value of Indonesian tea exports is influenced by the international price of tea and the rupiah exchange rate. The export price of tea abroad and the exchange rate of the rupiah against the US dollar have a significant effect on the volume of Indonesian tea exports. A decrease in international prices can result in a decrease in export value, while a strengthening of the rupiah exchange rate and have a negative impact on export volume (Sidabalok, 2018; Tarigan et al., 2021). Therefore, exchange rate management strategies and global market analyses are critical to maintaining competitiveness.

Economic distance is also a consideration in increasing export value along with SPS and TBT policies that have a significant impact on tea trade. SPS policies serve to protect human, animal, and plant health from risks that may arise from international trade. On the other hand, TBT includes regulations related to technical standards and product safety (Fadlillah & Wahyuni, 2023). In the context of international trade, the role of government policies in supporting the tea sector is also crucial. Policies that support the development of the tea

#### **RESEARCH METHODS**

The method used in this research is a descriptive method and quantitative method. The time series data used in this study are for the last five years 2013-2023. As well as cross section data from 5 countries such as Malaysia, Russia, United States, China and Pakistan. The commodities studied only included Tea with HS code (090240). The use of the four-digit HS is intended to describe the overall demand for Indonesian tea export. The data sources used in this study can be seen in Table 1.

Data Type	Source	Unit
Export value	Trademap, UN comtrade	US\$
Export Price	Trademap, UN comtrade	US\$
Geographic distance	CEPII	KM. US\$
Real exchange rate	Worldbank	Rp/LCU
Import tariffs	Macmap	Percent
NTM (SPS and TBT)	Macmap	Items

Table 1. Research Data	Гур	e and	Source
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The data analysis method used in this study consists of RCA (Revealed Comparative Advantages), The gravity model of panel regression and Fully Modified Ordinary Least Square (FMOLS). RCA was used to analyse the level of competitiveness of Indonesian tea products in the international market. The RCA value shown in the results shows that the commodity has a comparative advantage or low comparativeness. Conversely, if the RCA value is greater than 1, the commodity has a comparative advantage or greater competitiveness. The higher the RCA value, the greater the comparative advantage or competitiveness of export commodities

The gravity model of panel regression is used to estimate the factors that affect Indonesian tea export value in International Market. The equation of the panel data regression model is as follows:

$$lnXVij = \beta 0 + \beta 1 \ lnXPij + \beta 2lnEcoDistij + \beta 3lnERitj + \beta 4lnXTrfij + \beta 5lnTBTij + \beta 6 lnSPSij + Eij$$

Where:

where:	
β0	: Constant
$\beta 1 - \beta 6$	: Intercept coefficient
XVij	: Export Value
XPij	: Export price
EcoDisij	: Economic distance
ERij	: Rupiah exchange rate
XTrfij	: Export tariff
PSij	: Number of SPS items applied
TBTij	: The number of TBT
i	: Indonesian cross section data
j	: Cross section data for export destination countries
Eij	: Error

# **RESULT AND DISCUSSION**

#### **Competitive Indonesian Tea Trade**

The competitiveness of Indonesian tea products in the international market is a complex issue that involves various aspects. Although Indonesia has the potential to produce quality tea, there are issues that suggest that the quality of exported tea is less competitive than products from other countries such as China and India. The results of measuring the competitiveness of Indonesian tea in the international market using the RCA model can be seen as follows in Figure 2.



Figure 2. RCA of Indonesian Tea Trade in International Market

During this period, the RCA value of Indonesian tea to Malaysia, Russia, China, the United States and Pakistan had a fluctuating trend. However, in 2014 - 2015 Indonesia was able to maintain power competitiveness in the main import market with an RCA value of 5.35. along with time. With Indonesian tea production declining, the RCA value of Indonesian tea to the world's major importing markets has dropped. If the trend is shown that the calculation results will continue, so it can be said that Indonesia potentially has competitiveness, but this competitiveness is decreasing systematically. A systematic downward trend is indicated weak policies and business strategies in the Indonesian tea industry. Therefore, it requires new options in business policies and strategies

Impact of Non-Tariff Policy and Macroecomic Indicator to Export Value Tea

From the results of the model estimation of factors that influence the value of tea exports in Indonesia using a panel data gravity model approach, the model results are presented in the following table.

Variable	Coefficients	Probability
С	7.302719	0.0057
XPij	6.912521	0.0000***
EcoDistij	3.604827	0.7585
XTRFij	6.080053	0.0000***
Eritj	6.080053	0.6211
SPSij	8.711828	0.0000***
TBTij	-2.72673	0.0000***
	Effects Specification	
R-squared	0.948321	
F-statistic	24.12215	
Prob(F-statistic)	0.000000	

Source: Secondary Data, processed

Based on the table above, the export value of Indonesian tea products to export destination countries is influenced by many factors. These influencing factors need to be identified and analyzed whether they have a significant positive or negative effect on the value of Indonesian tea exports. The dependent variable in this model is the value of Indonesian tea exports (XVij), while the independent variables used are the price of Indonesian tea exports (XPij), the economic distance (EcoDistij), rupiah exchange rate (ERij), Export Tariff (XTij), the number of Sanitary and phytosanitary barrier export (SPSij) and the number of technical barrier export (TBTij). The model selection carried out using the Chow test produces a probability that is smaller than the real level of five percent, so the decision taken is the Fixed Effect Model (FEM). The best model was obtained through a panel data estimation approach with FEM and using Generalized Least Squared (GLS) with cross-section SUR weighting and the Coefficient covariance method, that is white cross-section for the export model of Indonesian tea products.

Export price describes the prosperity of the tea in a country and can show how large the purchasing power of the demand in a country is. Theoretically, export price has a positive relationship with exports. The higher the export price, the higher exports value of Indonesian the tea. In line with theory, estimation results show that the price variable of importing countries has a positive and significant effect at a real level of 5% on Indonesia's the value tea export trade. The tea export price variable has a significant positive effect on the value of Indonesian tea exports in export destination countries, meaning that in the long term an increase in tea export prices will increase the value of Indonesian tea exports. This is in line with the results of Ginting's research (223) which states that the exchange rate has an negative influence and significant on export performance. This is thought to happen because if there is an increase in Indonesian export prices, world tea prices will also increase because Indonesia is one of the largest countries in the world tea commodity, so it can affect the position of world tea tradeThe estimation results of this research are also in line with the results conducted by Nguyen & Wilson (2009); Dou et al (2015) that an increase in GDP per capita of exporting countries will cause an increase in exports.

Import Tea Price have the significant effect with the value of export tea. These results are not in accordance with the research hypothesis state that price import tea has a positive influence on the volume of Indonesian the tea exports. The price of import tea 2013 – 2023 get the decreasing significantly because the export price tea gets increasing 18 % in the same period so that the value of export tea higher than previous. It can be same conclusion Martinez-Zarzoso & Nowak-Lehmann (2003) supports this statement that the positive sign on the price of importing tea countries shows that the price of import is directly related to trade, which means that bigger countries have a greater capacity to absorb imports than smaller countries. Apart from Martinez-Zarzoso & Nowak-Lehmann (2003) and Inayah et al (2021) also support the results of this research.

One of the important conditions in the gravity model is economic distance. Economic distance indicates the export costs (transportation costs) that must be incurred when trade occurs. Based on gravity theory, distance has a negative impact on trade relations between regions. The estimation results in this model show differences. the tea products, the economic distance variable has a significant influence at the 5% real level. The coefficient has a negative sign which is in line with theory and hypothesis. The coefficient value with a negative symbol means that if the distance from the export destination country is 1% further, there will be a decrease in the tea exports. The farther the importing country is from Indonesia, the greater the transportation costs for the Indonesian tea trade. This could cause a reduction in the number of Indonesian exports to importing countries. These results are supported by the results of Eita (2008) research and Bellanawithana et al (2009) research. These two studies explain that a negative distance coefficient indicates

that the greater the distance between countries will increase transportation costs which can reduce trade.

Exports of a commodity are related to the exchange rate of the domestic currency against the currency of another country. The rupiah exchange rate against the currency of the country that imported the the tea commodity studied had no real effect on the export of this commodity. The estimation results show that the rupiah exchange rate against the currency of the importing country is significant at a real level of 5% for Indonesian the tea. The value obtained in the model shows a coefficient of 0.59. This value means that the higher Indonesia's real exchange rate with the importing country is 1%, the greater the volume of the tea commodities exported by Indonesia, namely by 0.59%. The higher the real exchange rate or the exporting country's currency depreciates, the lower the product price in the exporting country will be, thereby increasing demand for products from the importing country. The results of this research are in line with research conducted by Guan & Sheong, (2020) that currency depreciation in exporting countries can increase exports.

Price is one of the elements that can influence the amount of demand by consumers, the higher the price applied, the more impact it will have on reducing the quantity demanded. However, if we look at it from the supply side, an increase in price will be responded to an increase in supply. Prices in the market will encourage producers to supply more of their products. In this research, Indonesia is an exporting country. The export price variable in the model produces a positive coefficient sign so price variable has significant influence on the export value of the tea commodities. The research conducted by Suprihatini (2005) supports the results of this research. The results of this research explain that export prices have a positive and significant effect on export value. Long-Term Effect of Export Tariffs, Non Tariff Measures (NTM), Export Tea Prices and Imported Tea Prices on the Value of Indonesian Tea Exports

Fully Modified Ordinary Least Square (FMOLS) analysis is used to determine the long-term influence between the independent variable and the dependent variable. This research uses FMOLS to determine the long-term effect of implementing export tariffs and Non-Tariff Measures on the value of tea exports. The use of FMOLS analysis can be carried out if two conditions that have a real long-term relationship or are cointegrated with each other. In Table 3, the results of estimating the long-term influence of independent variables on using FMOLS are presented. The following are the results of estimating the long-term value of Indonesian tea exports.

Table 3. FMOLS models Estimation				
Variable	Coefficients	Probability		
XPij	3.224866	0.0000*		
XTRFij	-2.051501	0.0000*		
SPSij	1.827745	0.0087*		
TBTij	0.541823	0.6441*		
R-Squared	0.751433			
Adj. R-Squared	0.735248			

Based on the results of the FMOLS panel data test, Indonesian tea trade policies such as export prices, export tariffs and SPS non-tariff policies have a long-term influence on the value of tea exports, while TBT non-tariff policies have no long-term influence on the value of tea exports.

Indonesian export tea prices have a significant impact on the value of Indonesian tea exports in the international market because when international tea prices increase, there is usually a positive impact on the value of exports, as the product becomes more attractive to foreign buyers. In addition, the demand of importing countries, especially countries with high purchasing power, is highly dependent on international tea prices. When prices rise, countries with strong purchasing power are likely to keep buying in larger volumes, which supports the value of Indonesian exports (Suprihatini, 2016; Sidabalok, 2018).

SPS policies significantly affect exports, suggesting that receiving countries expect high standards for imported products. Non-conformance with these standards can lead to product rejection and, consequently, financial losses for Indonesian exporters. This is becoming increasingly important given the increasing awareness of global consumers towards the quality and safety of tea. the implementation of strict SPS policies in destination countries also affects market access. Countries that enforce stricter SPS policies are likely to face difficulties in accessing markets for export products from Indonesia that do not meet health and sanitation requirements (Karosekali, 2021). Therefore, it is important for tea producers in Indonesia to ensure that their products fulfil all standards set by export destination markets in order to maintain and increase the value of Indonesian tea exports (Samudera et al., 2017; Nursodik et al., 2021).

According to Sankalpana et al (2018) and Wei et al (2012). The SPS policy can become a trade barrier because it increases the fixed costs of trade. Fixed costs increase due to actions such as certification requirements, testing procedures, inspections and approvals. An increase in additional costs will make prices high so that demand will be low and exports will decrease.

TBT policies in destination countries have no influence on the value of Indonesian tea exports. Although TBTs are considered non-tariff barriers, their effects on trade are not always clear. The impact of TBT can be varied; in some contexts, it can serve to raise product standards to increase product competitiveness in the international market (Webb et al, 2019; Wood et al, 2019). TBT policies are not entirely negative for the value of Indonesian tea exports, as through compliance with standards, Indonesian tea can gain better recognition in the global market (Putro & Hidayat,2023).

Overall, the TBT policy does present challenges for Indonesian tea exporters. However, with the right approach, including investment in production standards and a good understanding of market needs, the TBT can be used as a tool to improve the competitive position of Indonesian tea in the international market, and does not necessarily have a negative effect on export values (Purba, et al 2023).

## **CONCLUSION AND SUGGESTION**

#### Conclusion

Indonesian tea products already have competitiveness with an RCA value greater than 1 in the main international market. In short-term effect using gravity panel regression model, the results showed that export tea prices, imported tea prices, export tariffs, SPS non-tariff policies and TBT non-tariff policies had a significant effect on the value of tea exports, while the exchange rate and economic distance had no effect on the value of tea exports. In long-term effect using FMOLS model, Indonesian tea trade policies such as export prices, export tariffs and SPS non-tariff policies have a long-term influence on the value of tea exports, while TBT non-tariff policies have no long-term influence on the value of tea exports.

### Suggestion

The problem of the performance of Indonesian tea export trade is that it is faced with the problem of export volume which continues to increase from year to year. This is an implication of the inability of the tea production to meet domestic consumption needs. Therefore, the government should issue a policy that can increase domestic tea production, such as expanding tea planting areas and subsidizing output as an effort to offset the relatively cheap tea export prices. The negative influence of the non-tariff barrier policy in the form of SPS on Indonesian tea commoditiy proves that Indonesia as the tea exporter has not been able to meet the quality standards implemented by export destination countries. Therefore, producers must improve the quality and quality standards of Indonesian tea, especially from the health aspect which is related to the tolerance limit for pesticide residues contained in Indonesian the tea. In connection with the rejection of exports of Indonesian tea due to the presence of pesticide residues contained in the tea. There is a need to revise the SNI for the tea so that it conforms to the standards of the destination country as well as technological innovation that can help reduce the levels of pesticide residues contained in the tea, so that Indonesian tea can be competitive in the global market.

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