


## The Pattern of Intra Industry Trade and Competitiveness of Agricultural Product Trade Between Indonesia and Türkiye


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### Abstract


International trade cooperation is one of the main issues faced by several countries in response to the global economic uncertainty. Indonesia is one of the countries that is active in trade cooperation both on a bilateral and regional. One of Indonesia's bilateral collaborations was the trade agreement with Türkiye in the Indonesia-Türkiye Comprehensive Economic Partnership Agreement (IT CEPA). The IT CEPA aims to improve economic relations between Indonesia and Türkiye by increasing trade. This research aims to analyze the pattern of intra-industry trade between Indonesia and Türkiye and the competitiveness of agricultural product trade. The agricultural sector has a high proportion of international trade between Türkiye and Indonesia; therefore, this study focuses on agricultural products. The method utilized is Intra-industry trade (IIT) analysis and Constant Market Share (CMS) analysis. Data on the export and import trade flows of Indonesian and Turkish commodities were obtained from the International Trade Center (ITC) database. The results showed that after the signing of the IT CEPA (2018-2022 period), exports of agricultural products increased by 45.6 percent. Indonesia has the opportunity to increase its exports to Türkiye for commodities that are declining in competitiveness. The intra-industry trade analysis showed that out of 20 two-digit HS code, only one two-digit code has strong intra-industry trade, which is HS 03 fish and crustaceans. This implied that in this HS code, both countries trade relatively in similar value. Meanwhile in other two-digit HS code, is mostly a one-way trade. The Constant Market Share (CMS) analysis revealed that the competitiveness of Indonesia's agricultural product export to Türkiye increase after the implementation of IT CEPA showing that Indonesia benefits with the implementation of this trade agreement. In the future, both countries must optimize the IT CEPA in increasing trade between two countries especially products in HS code currently only exist oneway trade.

**Keywords:** Agriculture, Constant market share analysis, Intra-industry, IT-CEPA, Trade

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## 1. Introduction

The global economic uncertainty that has occurred in recent years has had various effects on several countries. International trade cooperation is one of the main issues faced by several countries in response to these conditions. There are two types of international trade: inter and intra-industry trade (Stern, 2009). Inter-industry trade is trade between various industries, motivated by classical trade theories, called the theory of absolute advantage, the theory of comparative advantage, and the Heckscher-Ohlin theory (Sen, 2008). The current development in international trade relations has encouraged trade between countries to become increasingly complex. This can no longer be explained using the previously developed classical trading theory. Intra-industry trade is an example of a new term and theory that can explain most trading conditions currently occurring in the context of international trade. The intra-industry trade theory has been widely used in several studies. The concept of trade with the same endowment factor is called intra-industry trade (IIT), where the export value of an industry from one country is precisely balanced by imports of the same industry from another country (Kilavuz et al., 2013). The IIT will be greater if tariff and non-tariff barriers for the industry are relatively low (Greenaway et al., 1994). IIT will be larger in countries involved in various forms of economic integration because it will have an impact on reducing trade barriers, and economic integration usually occurs between neighboring countries. Indonesia is one of the countries that is active in trade cooperation both on a bilateral and regional.

One of Indonesia's bilateral collaborations is a trade agreement with Türkiye in the Indonesia-Türkiye Comprehensive Economic Partnership Agreement (IT CEPA). The IT CEPA is a forum for collaborative meetings between the two countries to discuss problems that hinder investment and trade between the two countries as well as finding solutions related to the problems found. The IT CEPA was formed so that Indonesia could increase its competitiveness in the Turkish market and catch up with other countries that had previous trade agreements with Türkiye. The IT CEPA aims to improve economic relations between Indonesia and Türkiye by increasing trade, investment, market access, services, and employment opportunities between the two countries (Dityo, 2020). In addition, the IT CEPA aims to increase economic cooperation between the two governments in various sectors. This cooperation is strategic because the aim is to actively promote the interests of domestic companies and industries, protect commodities, increase national welfare, and protect domestic industry. For Indonesia, this is an important step in securing the supply of important commodities for its industry to continue operating and maintaining its market in Türkiye. Indonesia and Türkiye are committed to increasing cooperation in politics, security, economics, culture, education, science, and technology and have set a trade volume target of 10 billion USD by 2023 (Kasim, 2023). The agreement was signed on July 7, 2017.

The research results of Darmawan et al. (2022) show that Indonesia's exports to Türkiye are less than before the IT CEPA agreement. The value of Indonesia's exports to Türkiye and Turkish exports to Indonesia decreased during 2017-2018 period (Zaimudin, 2020). This condition is interesting because IT CEPA should be able to encourage an increase in the volume of trade between the two countries, but what has happened is the opposite, where the value of trade between the two countries has decreased.

This study utilized intra-industry trade (IIT) analysis. IIT is a tool for measuring the export-import performance of a country's industry and can be used to study the interrelationship between intra-industry trade relations between Indonesia and Türkiye. In addition, a partial analysis using the IIT approach also needs to be carried out to identify the extent of the integration of potential export commodities being traded. Furthermore, Constant Market Share (CMS) analysis was used to analyze export dynamics before and after the IT CEPA agreement.

Research using the IIT method was conducted by Sunardi (2015), Adzimatur (2016) and Nainggolan (2020). Sunardi (2015) using the Intra Industry Trade (IIT) method to analyze the competitiveness and determined factors of Indonesia's superior commodity exports to member of the Organization of Islamic Cooperation (OIC). The results show that trade relations between Indonesia and the OIC member countries run in one direction. The highest degree of commodity integration occurs at the medium level of integration in petroleum coke, petroleum bitumen, and other petroleum oil residues (HS 2713) and petroleum gases (HS 2711). The Intra Industry Trade (IIT) method was also used by Nainggolan (2020) to analyze the competitiveness and factors influencing exports of selected Indonesian commodities to Developing Eight Countries (D-8). The results show that most of the intra-industry trade between Indonesia and D-8 member countries is in a one-way degree of integration; however, there are several commodities in certain destination countries that have two-way trade relations with varying degrees of

integration from weak to moderate to strong. Research has been conducted on competitiveness conditions and factors that influence trade relations between Indonesia and Türkiye (Adzimatur, 2016). The resulting IIT index shows that the trade relations between Indonesia and Türkiye run in one direction from Indonesia.

Analysis of the dynamics of export trade between Indonesia and Türkiye was carried out by Oktaviani et al. (2008) using data from 2007, when the IT CEPA agreement had not yet been implemented. This research was similar to the methods used. However, Oktaviani et al. (2008) examined Indonesian exports to the Middle East, including Türkiye, Tunisia, and Morocco. This study focused on Indonesia's trade with Türkiye. This research also has similarities with Adzimatur (2016) regarding the use of the IIT method and the export destination country, Türkiye. The difference is that the research analyzes Indonesia's leading export commodities, whereas this research emphasizes agricultural products.

One of the methods to analyze the effect of trade agreements is using constant market share (CMS) analysis. Shah et al. (2020) analyze whether Pakistan and China trade agreement promote export. The result indicates that Pakistan export growth was contributed by the market demand effect and competitiveness effect showing that the free trade agreement benefits both countries. Meanwhile Kamal et al. (2021) utilized CMS analysis and gravity model to analyze the trade competitiveness and trade potential of Pakistan and ASEAN countries in the Chinese market. The results reveal that Pakistan along with Brunei, Cambodia, Laos, Myanmar, Philippines, and Thailand has great trade potential in the Chinese market. In addition, Pakistan's export performance in China's market relies on the market distribution effect.

Trade analysis will be carried out in the agricultural sector, since it is one of the sectors that has a high proportion of international trade between Türkiye and Indonesia. Growth in the trade value of this sector is important for increasing the trade value of the two countries (Sumiahadi et al., 2021). Therefore, this study aims to analyze the intra-industry trade patterns of Indonesian agricultural products based on the degree of integration with Türkiye and analyze the dynamics of trade between Indonesia and Türkiye before and after the IT CEPA agreement. It is hoped that the results of this research can contribute to evaluating the IT CEPA agreement in order to improve it.

## 2. Materials and Methods

This study uses secondary data on export and import trade flows of Indonesian and Turkish commodities obtained from the International Trade Center (ITC) database. Trade data use a two-digit harmonized system code (HS code). Agricultural products in this research are defined as products originating from plants and animals in both raw and processed forms, with the HS codes of 01 to 24, plus HS 40 and HS 44.

The Intra Industry Trade (IIT) method was utilized to analyze the level of trade integration between Indonesia and Türkiye. Intra-industry trading patterns are determined using the Grubel-Lloyd Index (GLI) method. The Grubel-Lloyd Index (GLI) method can be formulated as follows (Grubel and Lloyd, 1971)

$$GLI_i = 1 - \frac{\sum(X_i - M_i)}{\sum(X_i + M_i)} \quad (\text{Eq. 1})$$

$GLI_i$ : Intra industry trade of product i

$X_i$  : Export value of product i

$M_i$  : Import value of product i

$i$  : Types of products.

$GLI_i$  measures average intra-industry trade as a ratio of the export plus import trade which is also equal to the sum of the intra-industry trade for the industries of the i industries (Grubel and Lloyd, 1971). The index value  $GLI_i$  has a value range between 0 to 1. If the index value  $GLI_i = 0$ , it means that a country only trades in exports or imports of a commodity in the same industry (there is no intra-industry trade pattern). Meanwhile, if the index value  $GLI_i = 1$ , it means that a country exports and imports a commodity in the same industry and in the same quantity (there is a maximum intra-industry trade pattern). The results of the Intra Industry Trade (IIT) analysis will be used as an indicator to determine the level of integration of agricultural products. Table 1 shows the IIT value classification.

**Table 1. IIT value classification**

IIT Value	Level of Integration
ITT= 0.00	No integration (oneway trading)
0.00 < IIT < 24.99	Weak integration
25.00 < IIT < 49.99	Medium integration
50.00 < IIT < 74.99	Moderate strong integration
75.00< IIT<100.00	Strong integration

The Constant Market Share (CMS) analysis was first applied by Tyszynski (1951). The original paper decomposed the export growth into four components and mostly utilized for the entire export products (Richardson, 1971): market size effect, market composition effect, commodity composition effect and competitive effect. In this paper, since only one market analyzed, which Turkey, therefore the export growth has only three components, namely: market size, commodity composition, and competition effects. The market-size effect shows that a country's export growth is caused by an increase in destination market imports. Market size effects result from changes in global demand. The commodity composition effect shows whether a country has concentrated on commodities with rapidly growing markets. Furthermore, the competitiveness effect is the remainder of the CMS and is not explained by the other three effects. This research will compare the time period before IT CEPA was 2012-2016 period and after IT CEPA was 2018-2022 period. The formula used in the CMS analysis is based on Shah et al. (2020):

$$\Delta X = \sum_{i=1}^n rX_i + (\sum_{i=1}^n r_iX_i - \sum_{i=1}^n rX_i) + (\sum_{i=1}^n \sum_{j=1}^n r_{ij}X_{ij} - \sum_{i=1}^n r_iX_i) \quad (\text{Eq. 2})$$

$\Delta X$  = changes in the value of Indonesian agricultural exports to Türkiye from period 1 to period 2

$r$  = changes of Turkish agricultural imports from period 1 to period 2 (%)

$r_i$  = changes in Indonesian agricultural exports to Türkiye in commodity i from the period 1 to period 2 (%)

$r_{ij}$  = changes in Turkish agricultural imports of commodity i from period 1 to period 2 (%)

$X_i$  = the value of exports of Indonesian agricultural products to the world in commodity i in period 1 to period 2

$X_{ij}$  = value of exports of Indonesian agricultural products to Türkiye for commodity i in period 1 to period 2

$\sum_{i=1}^n rX_i$  = market size effect

$(\sum_{i=1}^n r_iX_i - \sum_{i=1}^n rX_i)$  = commodity composition effects

$(\sum_{i=1}^n \sum_{j=1}^n r_{ij}X_{ij} - \sum_{i=1}^n r_iX_i)$  = competitiveness effect

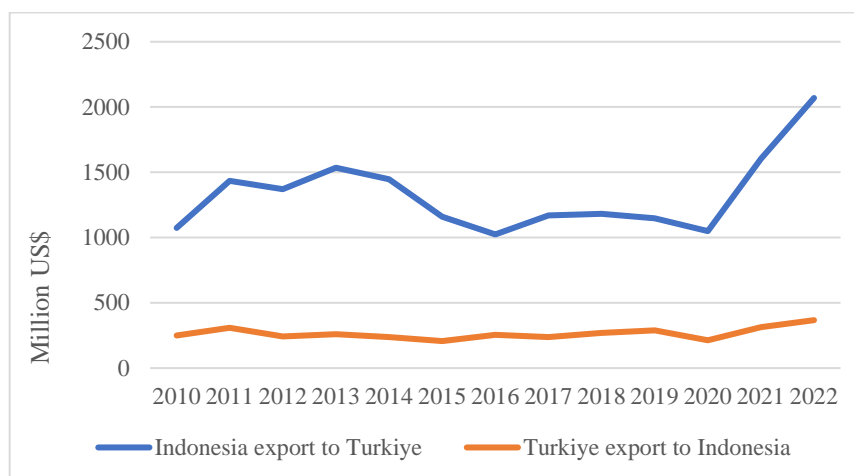
### 3. Results and Discussion

#### 3.1. Trade Flows and Linkages between Indonesia and Türkiye

Before the IT CEPA agreement, Indonesia-Türkiye trade was more in favor of Indonesia, as indicated by Indonesia's trade surplus. In the 2010-2016 period, Indonesia's largest trade surplus occurred in 2013, with a surplus of almost 1.3 billion US\$ (*Figure 1*). After the IT CEPA agreement in 2017, Indonesia's trade surplus increased and reached its highest level in 2022, with a surplus of US\$ 1.7 billion (*Figure 1*).

The increase in exports occurred during Covid-19 and after which Indonesia's exports to Türkiye increased significantly by 2021, with an increase of 53 percent. The highest increase in Turkish exports to Indonesia occurred in 2021, with an increase of 46 percent. Indonesia's largest export product to Türkiye is derivative palm oil products (HS 151190), with an export value of US\$ 512 million or reaching 24.7 percent of the total value of Indonesia's exports to Türkiye in 2022. Türkiye's largest exports to Indonesia were part of gas turbines (HS 841199) amounting to US\$ 30.9 million or 8.5 percent of the total value of Türkiye's exports to Indonesia in 2022. For agricultural products, Türkiye's largest export to Indonesia was tobacco (HS 240110) amounting to US\$ 29.6 million or 8 percent of the total value of Türkiye's exports to Indonesia in the same period. This shows that Indonesia's exports to Türkiye are dominated by several main products, whereas Türkiye's exports to Indonesia are relatively the same in value. This study inferred that agricultural products are traded between Indonesia and

Türkiye. Twenty agricultural products in the two-digit HS codes are traded. The link between trade in Indonesian and Turkish agricultural products is shown by the intra-industry trade (ITT) values in *Table 2*.



**Figure 1. Value of Indonesian Exports to Türkiye and Türkiye Exports to Indonesia (2010-2022)**

Source: TradeMap (2023),

Fish and crustaceans, mollusks, and other aquatic invertebrates (HS 03) have the highest intra-industry trade (IIT) value, with a value of 86.75 (strong integration). This is because Indonesia's exports to Türkiye amounted to 874 thousand US\$ and imports from Türkiye amounted to US\$ 1.1 million. Indonesia's largest export of fish and crustaceans, molluscs and other aquatic invertebrates (HS 03) in 2022 is tuna fillet (HS 030487) with an export value of US\$ 240 thousand while Türkiye's exports to Indonesia in this HS is frozen trout (HS 030314) with an export value in 2022 of US\$ 970 thousand. For Indonesia, a maritime country, fishery products are one of the mainstays of exports. Meanwhile, for Türkiye, the fishing industry also occupies an important position in economic and social growth (Eyüboğlu and Akmermer, 2023; Kale, 2020; Karataş, 2017). Seafood, especially fish is an important source of protein in many diets around the world (Azabagaoglu et al., 2016)

The cocoa and cocoa preparations (HS 18) showed moderately strong integration. The products exported by Indonesia to Türkiye are cocoa butter, fat, and oil (HS 180400); cocoa powder (HS 180500 and HS 180610); and cocoa beans (HS 180100), with the highest value being cocoa butter, fat, and oil (HS 180400). Exports in 2022 amounted to 6.2 million US\$. The products imported from Türkiye are chocolate (HS 180690, HS 180620, and HS 180632), with the largest export value in 2022 being chocolate (180690) amounting to US\$ 2.7 million. This shows that the products imported from Türkiye are finished products that are ready for consumption, whereas Indonesia exports raw and semi-finished products.

Other products with moderate integration are miscellaneous edible preparations (HS 21). Products exported by Indonesia are preparations for sauces and prepared sauces, mixed condiments and seasonings (HS 210390), food preparations consisting of finely homogenized mixtures of two or more basic ingredients (HS 210420), food preparations (HS 210690), extracts, essences, and concentrates of coffee (HS 210111). Indonesia's largest exports to Türkiye are preparations for sauces and prepared sauces, mixed condiments, and seasonings (HS 210390), with an export value of US\$ 12 million in 2022. Turkish products exported to Indonesia include ice cream and other edible ice, whether or not they contain cocoa (HS 210500), inactive yeasts, other dead single-cell microorganisms (HS 210220), food preparations (HS 210690), protein concentrates and textured protein substances (HS 210610), prepared baking powder (HS 210230), soups and broths and preparations (HS 21040), preparations for sauces and prepared sauces, and mixed condiments and seasonings (HS 210390). Türkiye's export to Indonesia for HS 21 is yeast (HS210210) with a value in 2022 of US\$ 2.5 million.

Türkiye is one of the most important producers and exporters countries of dried fruit (Ertemli and Demirbas, 2015). Edible fruit and nuts; peel of citrus fruit or melons (HS 08) are the products imported by Indonesia from Türkiye includes fresh or dried hazelnuts (HS 080222), dried grapes (HS 080620), fresh tamarind, cashew, jackfruit, lychee, sapodilla plum, passion fruit, starfruit (HS 081090), fresh cherries (HS 080929), dried apricots (HS 081310), fresh or dried figs (HS 080420), fresh apricots (HS 080910), fresh or dried dates (HS 080410), fresh



or dried pistachios, shelled (HS 080252), fresh plums and sloes (HS 080940). Meanwhile, the products exported by Indonesia are desiccated coconuts (HS 080111) and fresh coconuts in the inner shell "endocarp" (HS 080112). This shows that the types of fruit and nuts imported from Türkiye are subtropical products that are difficult to produce in Indonesia. Coconut is the only product in this group that Indonesia exports to Türkiye in dry or fresh form.

**Table 2. Trade Flow and Intra Industry Trade (IIT) between Indonesia and Türkiye in 2022**  
(in thousand US\$)

HS code	Product	Export	Import	IIT	Level of Integration
03	Fish and crustaceans, molluscs and other aquatic invertebrates	874	1.141	86.75	Strong
05	Products of animal origin, not elsewhere specified or included	602	0	0	None
06	Live trees and other plants; bulbs, roots and the like; cut flowers and ornamental foliage	16	0	0	None
08	Edible fruit and nuts; peel of citrus fruit or melons	5.869	1.472	40.10	Moderate strong
09	Coffee, tea, and spices	4.593	376	15.13	Weak
11	Products of the milling industry; malt; starches; inulin; wheat gluten	7	3.047	0.46	Weak
12	Oil seeds and oleaginous fruits; miscellaneous grains, seeds and fruit	0	128	0	None
13	Lac; gums, resins and other vegetable saps and extracts.	596	3	1.00	Weak
14	Vegetable plaiting materials; vegetable products not elsewhere specified or included	84	0	0	None
15	Animal, vegetable or microbial fats and oils and their cleavage products; prepared edible fats	602.650	2.438	0.80	Weak
17	Sugars and sugar confectionery	110	7,531	2.88	Weak
18	Cocoa and cocoa preparations	9.334	3.294	52.17	Moderate strong
19	Preparations of cereals, flour, starch or milk; pastrycooks' products	57	1.016	10.62	Weak
20	Preparations of vegetables, fruit, nuts or other parts of plants	38	2.131	3.50	Weak
21	Miscellaneous edible preparations	14.924	5.223	51.85	Moderate strong
22	Beverages, spirits and vinegar	0	100	0	None
23	Residues and waste from the food industries; prepared animal fodder	7.386	62	1.66	Weak
24	Tobacco and manufactured tobacco substitutes	1.449	30.485	9.07	Weak
40	Rubber and articles thereof	137.694	3.419	4.85	Weak
44	Wood and articles of wood	15.507	165	2.11	Weak

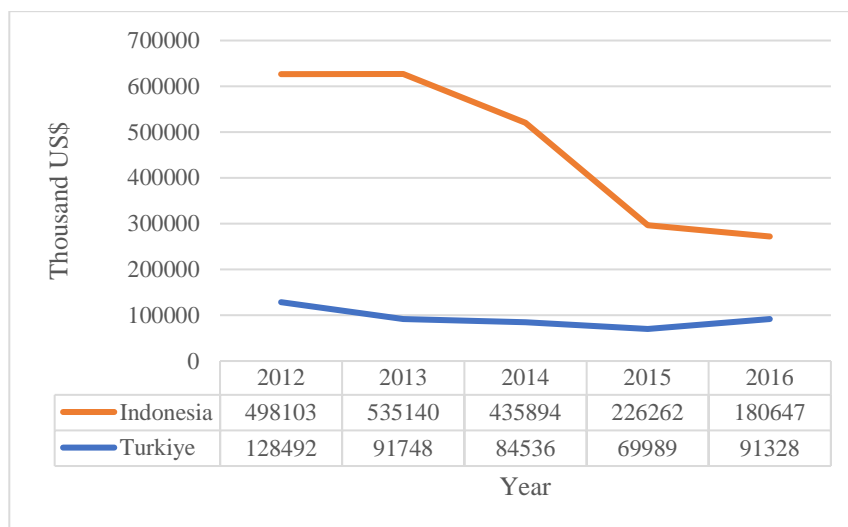
Tobacco and manufactured tobacco substitutes (HS 24) are the products that Türkiye imported the most from Indonesia; however, Indonesia's exports for this product are small, so the IIT value shows weak integration. Products exported by Indonesia are tobacco, "homogenized" (HS 240391), tobacco, partially or completely stemmed or peeled (HS 240120), cigarettes containing tobacco (HS 240220), tobacco, unstemmed or unpeeled (HS 240110), tobacco refuse (HS 240130), cigars and cigars containing tobacco (HS 240210). The products exported by Türkiye are tobacco, unstemmed or unstripped (HS 240110), tobacco, partly or wholly stemmed or stripped, otherwise unmanufactured (HS 240120), tobacco refuse (HS 240130), water pipe tobacco (HS 240311),

cigarettes containing tobacco (HS 240220), chewing tobacco, snuff, and other manufactured tobacco (HS 240399), smoking tobacco, and tobacco substitutes (HS 240319).

Animal, vegetable, and microbial fats and oils and their cleavage products (HS 15) are Indonesia's largest agricultural products exported to Türkiye. The products exported by Indonesia are palm oil and its fractions, refined (HS 151190), edible mixtures or preparations from animal or vegetable fats or oils (HS 151790), palm kernel and babassu oil and its fractions (HS 151329), vegetable fats and oils and their fractions (HS 151620), coconut oil and its fractions (HS 151319), and crude coconut oil (HS 151311). By 2022, Indonesia's largest export to Türkiye was palm oil. Türkiye requires this oil as a raw material for biodiesel production (Lutfi, 2021). This is in accordance with the research of Oktaviani et al. (2008) where in 2007, animal fats and vegetables were also the commodities that contributed the most to Türkiye's exports. Crude palm oil (CPO) imports are an alternative to Türkiye to meet its vegetable oil needs. This causes the price of palm oil to decrease. Türkiye also exports sunflower seed or safflower oil and its fractions (HS 151219), edible mixtures or preparations of animal or vegetable fats or oils and edible fractions (HS 151790), virgin olive oil (HS 150930), extra virgin olive oil (HS 150920), margarine (HS 151710), and other oils and their fractions (HS 151090) to Indonesia.

### 3.2. The Competitiveness of Indonesian Agricultural Product Export to Türkiye

Trade in agricultural products between Indonesia and Türkiye was divided into two periods. The 2012-2016 period shows conditions before the IT CEPA agreement and 2018-2022 shows the 2018-2022 period. *Figure 2* shows the dynamics of trade in agricultural products between the two countries before IT-CEPA and *Figure 3* shows trade in agricultural product after IT-CEPA.



**Figure 2. Value of Indonesian Exports Agricultural Product to Türkiye and Türkiye Exports Agricultural Product to Indonesia Before IT-CEPA**

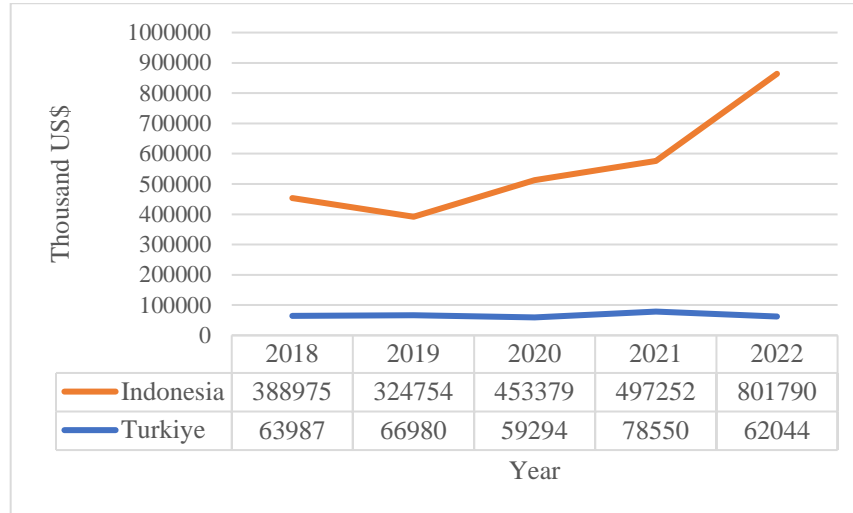
Source: TradeMap (2023)

The dynamics of export growth are analyzed using Constant Market Share (CMS). *Table 3* shows that in the 2012-2016 period there was a decline in exports from Indonesia to Türkiye. This decline in exports occurred because of commodity composition, competitiveness, and market size. The biggest contributor to this decline was that Indonesian exports experienced a decline in competitiveness compared to exports from other countries. Approximately 87.2 percent of the decline in Indonesian exports was caused by a decline in competitiveness, followed by a commodity composition of 7.6%, and a market size of 5.2 percent.

The decrease in the market size effect shows that in this period, Türkiye's domestic demand for imported commodities from all countries weakened. Meanwhile, the commodity composition effect, which is negative, indicates that Indonesia's export growth to Türkiye is lower than the growth in Türkiye's imports of these products from countries other than Indonesia.

Standard growth parameters show that the growth in exports of Indonesian agricultural products to Türkiye decreased by 13.1 percent. Indonesia's standard export growth to Türkiye is lower than exports to the world; thus,

Indonesia's export performance has decreased. Three commodities experienced the greatest decline in competitiveness: fat and oil products, both animal and vegetable (HS 15), especially palm oil derivatives, rubber (HS 40) and malt milling products, wheat, gluten, inulin, and starch (HS 11). Meanwhile, three commodities experienced the largest increase, namely wood (HS 44), residues and waste from the food industry (HS 23), and miscellaneous edible preparations (HS 21).



**Figure 3. Value of Indonesian Exports Agricultural Product to Türkiye and Türkiye Exports Agricultural Product to Indonesia After IT-CEPA**

Source: TradeMap (2023)

**Table 3. Components of Growth in Exports of Indonesian Agricultural Products to Türkiye**

No	Components	Before IT CEPA	After IT CEPA
1	Export growth	-387.093	461.552
2	Market size	-20.113	191.595
3	Commodity composition effect	-29.607	47.756
4	Competitiveness effect	-337.372	222.202

After the signing of the IT-CEPA (2018-2022 period), exports of agricultural products increased by 45.6 percent. This occurred because there was an increase in all components, namely market size, commodity composition, and the influence of competitiveness. The effect of product composition shows that Indonesia's concentration on agricultural product exports is growing rapidly. The effect of this product composition is positive, which means that Indonesia's export products to Türkiye have higher product import growth compared to imports from other countries in Türkiye. Indonesia's main export to Türkiye, namely derivative palm oil (HS 151190), experienced an increase in value of 246.79 percent in the 2018-2022 period, while in terms of quantity it increased by 106.52 percent in the same period. This shows that, apart from being influenced by the quantity of exports, this increase was also influenced by a significant increase in prices. Türkiye's demand for derivative palm oil is predicted to increase (Koc et al., 2005). The realization of CEPA for Indonesia has an important meaning in external consultations or the involvement of private actors in the context of Indonesia's economic diplomacy in the palm oil sector (Lutfi, 2021).

From the results of the CMSA analysis, three commodities experienced the greatest increase in competitiveness after the IT-CEPA agreement: fat and oil products, both animal and vegetable (HS 15), especially palm oil derivatives, miscellaneous edible preparations (HS 21), and coffee and spice products, tea, and mates (HS 09). Meanwhile, the three commodities that experienced the greatest decline in competitiveness were rubber (HS 40); malt milling products, wheat, gluten, inulin, and starch (HS 11); and processed products from vegetables, fruits, and other types of plants (HS 20).



The results of the IIT and CMSA analyses show that Indonesian export commodities with increased competitiveness generally have low IIT, except for miscellaneous edible preparations (HS 21). This low IIT value is because trade is dominated only by Indonesia. However, Indonesia's commodities that experience decreasing competitiveness also have low IIT values and are dominated by Indonesian exports only. This shows that there is still an opportunity for Indonesia to increase its exports of Türkiye for these three commodities, which are experiencing a decline in competitiveness.

#### **4. Conclusions**

The exports of Indonesia's agricultural products increased by 45.6 percent after the signing of the IT CEPA (2018-2022 period). The commodities that increased competitiveness were fat and oil products, both animal and vegetable (HS 15), especially palm oil derivatives; other processed products that can be consumed (HS 21); and coffee, spices, tea, and maté products (HS 21). HS 09). Indonesian export commodities with increased competitiveness generally have low IIT, except for other processed products that can be consumed (HS 21). Meanwhile, the three commodities that experienced the greatest decline in competitiveness were rubber (HS 40); malt milling products, wheat, gluten, inulin, and starch (HS 11); and processed products from vegetables, fruits, and other types of plants (HS 20). This indicates that Indonesia has benefited with the implementation of this trade agreement.

The intra-industry trade analysis showed that out of 20 two-digit HS code, only one two-digit code has strong intra-industry trade, which is HS 03 fish and crustaceans. The low IIT value is because trade is dominated by Indonesia. On the other hand, Indonesian commodities which experience a decline in competitiveness also have low IIT values and are dominated by Indonesian exports only. This shows that Indonesia still has an opportunity to increase its exports to Türkiye for these three commodities, which are experiencing a decline in competitiveness.

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#### **Ethical Statement**

This study was prepared under the permission numbered 80/R-UMJ/VII/2023 dated 10/07/23, from the Ethics Committee of Universitas Muhammadiyah Jakarta.

#### **Conflicts of Interest**

We declare that there is no conflict of interest between us as the article authors.

#### **Authorship Contribution Statement**

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