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ANALYSIS OF THE DEVELOPMENT OF COFFEE, TEA AND SPICES EXPORTS IN INDONESIA

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ABSTRACT

Exports of agricultural commodities during the pandemic did not experience a decline. This is because agriculture in Indonesia has experienced good growth compared to other export commodities. The higher the export performance will have a positive impact on a country. The study examines the competitiveness of Indonesia's coffee, tea, and spices exports before and during the COVID-19 pandemic. Using secondary data from UN Comtrade and TradeMap, competitiveness is measured through the Revealed Comparative Advantage (RCA) index and the Export Product Dynamics (EPD) framework for 2019–2020. Results show that Indonesia maintains a comparative advantage in HS-09 commodities, with RCA values of 1.0000 in 2019 and 1.000653 in 2020. Despite stable comparative advantage, the EPD position falls into the "retreat" quadrant (X = –0.04998; Y = –0.70207), indicating declining market share relative to global competitors. These findings imply that Indonesia's competitiveness remained resilient during the early pandemic periodbut exhibits weakening long-term development potential

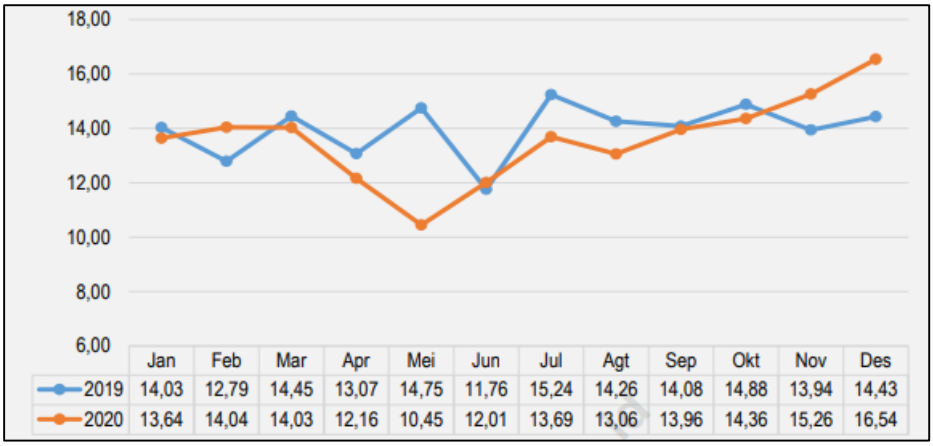
1. INTRODUCTION

At the end of 2019, a new type of coronavirus disease (covid-19) virus was discovered in China, specifically in the city of Wuhan. This virus was confirmed by the World Health Organization (WHO) to be a virus with a rapid spread and infection rate that attacks the respiratory system Covid-19 officially became a global pandemic on March 9 2020 (Burhan, 2021).

The interaction and social restriction policy was implemented to reduce the spread of the Covid virus. Of course, this policy has a big impact on the economic sector. Riana (2020) stated that the impact of restrictions on community activities had an influence on business activities which in turn had an impact on the economy. BPS report in 2020, economic growth in the second quarter experienced a deficit of 5.32 percent (BPS, 2020). Apart from that, the condition of Covid-19 at the beginning of 2020 in Indonesia was very high with a death rate greater than the global level. So the government must strictly limit community activities that gather or deal in the service sector.

The size of exports in a country's economy is a direct support. The phenomenon of exports occurs because the quantity of products is considered sufficient to meet domestic needs. So that excess value over the quantity of products can be exported to countries that need it (Batista, 2008).

The value of production quantity and export value will stimulate a country's investment (Simamora & Nadapdap, 2021). Figure 1 is the value of Indonesia's exports from 2019-2020.



	Jan	Feb	Mar	Apr	Mei	Jun	Jul	Agt	Sep	Okt	Nov	Des
2019	14,03	12,79	14,45	13,07	14,75	11,76	15,24	14,26	14,08	14,88	13,94	14,43
2020	13,64	14,04	14,03	12,16	10,45	12,01	13,69	13,06	13,96	14,36	15,26	16,54

Figure 1. Indonesian Export Value in 2019-2020
Source: BPS (2020)

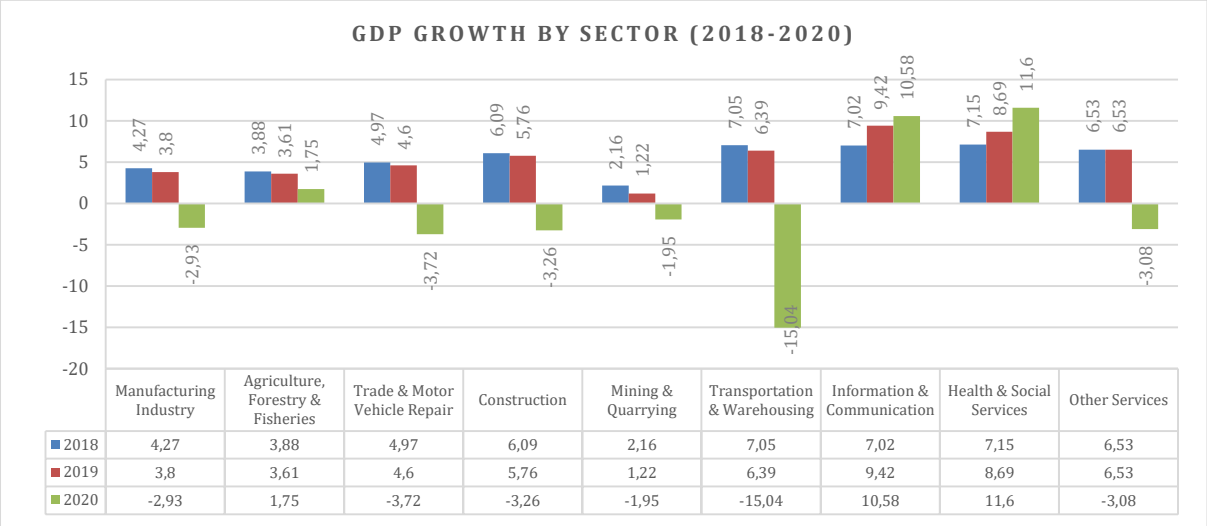
The number of export transactions can finance imports of production raw materials and stimulate capital growth. Because carrying out the production process requires capital which is not cheap. Starting from the supply of raw materials that must be supplied, to equipment for processing production so that products are ready to be exported as raw goods, semi-finished goods or finished goods. This process is of course not only fighting exports, but also in other fields such as trade and transportation.

Directly, the export process will increase the value of products and services accumulated in the country's economy in the form of Gross Domestic Product (GDP). An increase in the export volume of a commodity will have the effect of increasing the value of the country's GDP. Indonesia apart from having a business sector which is measured in business sector GDP.

In pandemic conditions, many sectors experience sluggishness or even grow with negative values (BPS, 2021). Sectors experiencing positive growth are only filled with sectors that do not require direct physical contact. Agriculture, forestry and fisheries sectors; information and communication sector; and the health services sector and social activities that require minimal physical contact. In the agricultural sector, agricultural activities will continue to be carried out with limited physical contact movements. Supported by Indonesia's condition as an agricultural country. The agricultural sector is able to create business fields that can survive and grow positively during the Covid-19 pandemic. Figure 2 is business sector GDP growth data from 2018-2020.

Indonesia’s agricultural sector demonstrated resilience during the COVID 19 pandemic, unlike many sectors experiencing contraction. Among agricultural commodities, coffee, tea, and spices (HS 09) are historically significant contributors to Indonesia’s export structure. However, despite their relevance, existing literature primarily focuses on single-commodity analyses or pre pandemic periods, leaving a gap in understanding how competitiveness evolved before and during COVID 19 using a dual-metric approach.

Horti Indonesia (2020) on Simamora & Nadapdap (2021) explained that the agricultural sector, the horticulture sub-sector, contributed 14% to Indonesia's GDP. The second agricultural sector is plantation crops with a value of US $27,916,880. Jasmine flower export activities also penetrate the international market. The main destination countries and export value of white jasmine flowers in the period 2010 to 2019, respectively with the highest to lowest export value, were China (US$ 1,684,269), Vietnam (US$ 542,427), Australia (US$ 132,757), the Netherlands (US$ 118,441), Singapore (US$ 103,799), United States (US$ 40,295), Japan (US$ 25,494), Malaysia (US$ 11,988), United Kingdom (US$ 3,103) data by UN COMTRADE, 2021 (Simamora & Nadapdap, 2021).



	Manufacturing Industry	Agriculture, Forestry & Fisheries	Trade & Motor Vehicle Repair	Construction	Mining & Quarrying	Transportation & Warehousing	Information & Communication	Health & Social Services	Other Services
2018	4,27	3,88	4,97	6,09	2,16	7,05	7,02	7,15	6,53
2019	3,8	3,61	4,6	5,76	1,22	6,39	9,42	8,69	6,53
2020	-2,93	1,75	-3,72	-3,26	-1,95	-15,04	10,58	11,6	-3,08

Figure 2. Business Field GDP Growth in 2018-2020
Source: BPS (2020)

The government as a policy maker always supports and provides education to exporters and farmers. Because the condition in Indonesia is increasingly decreasing, this will indirectly affect the production of agricultural commodities (Kaunang, 2013; Nurhayati et al., 2019). In addition, the incessant climate change campaign will certainly have an impact on the results and quality of agricultural production. Seeing the export problems facing Indonesia, and remembering the potential of Indonesian agricultural commodities that can be exported to foreign markets. It is necessary to carry out an analysis regarding the competitiveness of agricultural commodity exports which refer to coffee, tea and spices in Indonesia. It is hoped that this analysis can encourage the potential of agricultural commodities in the international market. This research can also help governments and exporters to determine the competitiveness of international markets (Riwaldi et al., 2023; Yulia & Chandriyanti, 2021).

Although numerous studies evaluate Indonesia's agricultural exports, existing works predominantly focus on single commodities (e.g., nutmeg, jasmine, fishery products) and pre-pandemic periods. Few studies compare competitiveness before versus during COVID-19 using a dual-metric framework (RCA+EPD) for aggregated HS-09 commodities. This gap creates uncertainty regarding whether Indonesia's comparative advantage was structurally affected by the pandemic and how its market position evolved relative to global competitors. This study addresses that gap by providing a two-year comparative assessment that links pre-pandemic and early-pandemic competitiveness dynamics.

The novelty of the research lies in the selection of export commodities and the analytical tools used, namely RCA (Revealed Comparative Advantage) and EPD (Export Product Dynamic). Apart from that, the aim is to look at the condition of competitiveness from 2019 before the Covid-19 pandemic and during the Covid-19 pandemic in 2020. The study answers three questions 1) How competitive are Indonesia's coffee, tea, and spices exports in the global market 2) Did competitiveness change between 2019 and 2020? 3) How did Indonesia's market position evolve based on the EPD framework?

2. RESEARCH METHODS

This research uses quantitative methods. According to Sugiyono (2016) Quantitative research is research that utilizes data in the form of numbers and statistical analysis. The data used is secondary data documented through UN Comtrade (comtrade.un.org) and Trademap (trademap.org). The research subjects are agricultural commodities including coffee, tea and spices. Through the HS code, namely 09 as the agricultural commodity code for coffee, tea and spices.

The HS code has been determined by the Agricultural Quarantine Center (Anastasya, 2020). The research period is 2019 and 2020. In 2019 to look at conditions before the Covid-19 pandemic and in 2020 to look at conditions when the Covid-19 pandemic first occurred in Indonesia.

The method used is RCA (Revealed Comparative Advantage) and EPD (Export Product Dynamic) (Atmadji et al., 2019; Riwaldi et al., 2023). The aim is to determine the competitiveness of agricultural commodity exports, namely coffee, tea and Indonesian spices. Nurjati (2022), Zulkifli (2015), Simamora & Nadapdap (2021) and Rudi Hartanto et al., (2021) researching exports using the RCA tool to describe the competitiveness of certain sector exports on international markets. According to Simamora & Nadapdap, (2021) The RCA value is obtained from the formulation (Porter, 1994):

$$RCA = \frac{X_{ij}}{\sum X_{ij}} : \frac{X_{wi}}{\sum X_{w}} \quad \text{.....(1)}$$

Description :
RCA : Revealed Comparative Advantage;
X_{ij} : Indonesian agricultural commodity export value
$\sum X_{ij}$: Indonesian export value
X_{wi} : Value of world agricultural commodity exports
$\sum X_{w}$: World export value

The second tool, namely EPD, is used to describe the competitiveness of commodity exports through quadrants. Quadrant measurements are measured using the following formula:

X-axis (Commodity export market i)

$$\sum_{t-1}^{t} = 1\left(\frac{Xij}{Wij}\right)t \times 100\% - \sum_{t-1}^{t}\left(\frac{Xij}{Wij}\right)t - 1x\ 100\% \quad \text{.....(2)}$$

Y Axis (Product Market Share)

$$\sum_{t-1}^{t} = 1\left(\frac{Xt}{Wt}\right)t \times 100\% - \sum_{t-1}^{t}\left(\frac{Xt}{Wt}\right)t - 1x\ 100\% \quad \text{.....(3)}$$

Description :
X_{ij} : export value of Indonesian agricultural commodities;
W_{ij} : world agricultural commodity export value;
X_{t} : total export value of all Indonesian commodities;
W_{t} : total export value of all world commodities;

Overview of EPD analysis in quadratics according to Simamora & Nadapdap (2021) as follows:

Lost	Rising Star
Retreat	Falling Star

Figure 3. EPD quadrant matrix
Source: Simamora & Nadapdap (2021)

3. RESULTS AND DISCUSSION

Total of world trade value of $1,618,864,049 in 2019 and experiencing an increase with a trade value of $1,719,802,100 in 2020. The highest exporting country for coffee, tea and spices is the USA with a value of $405,456,265 but there was a decline in 2020, namely with a trade value of $366,125,957. The second position is China with a trade value in 2020 of $145,508,265 and in 2019 with a value of $60,615,900. With the lowest trade value in 2020 is the country of Sri Lanka with a value of $ 6. Table 1 is trade value data for agricultural commodities coffee, tea and spices in 2020 and 2019.The following is trade value data for agricultural commodities coffee, tea and spices in 2020 and 2019.

Table 1. Trade Value Ekspor Coffe, Tea, and Spiced 2019-2020

Year	Country	Trade Value (US$)
2019	World	1,618,864,049
2019	USA	405,456,265
2019	India	116,203,570
2019	Vietnam	105,448,093
2019	Malaysia	88,573,782
2019	Jepang	85,480,779
2019	Jerman	77,135,381
2019	Italia	65,918,992
2019	Egypt	61,980,937
2019	China	60,615,900
2019	Belgia	47,917,352
2020	World	1,719,802,100
2020	USA	366,125,957
2020	China	145,508,265
2020	India	135,995,682
2020	Vietnam	126,954,726
2020	Malaysia	85,156,628
2020	Jerman	78,829,460
2020	Jepang	73,945,750
2020	Egypt	58,852,985
2020	Rusia	53,922,068
2020	Italy	49,324,220

Source: comtrade.un.org (2022)

The export destination countries for agricultural commodities such as coffee, tea and grass on the international market experienced fluctuations between 2019 and 2020. Seen in the table above, the trade value from 2019 to 2020 has increased. So that pandemic conditions are not an obstacle to exports for the agricultural market share of coffee, tea and spices. The data shows that the largest export value is to the US. However, trade conditions for coffee, tea and spices did not experience a very significant decline. It can be seen from Malaysia's exports in 2019 from a value of $88,573,782 to a value of $85,156,628 in 2020. Exports of coffee, tea and spices to Japan in 2019 decreased in 2020, namely from a value of $85,480,779 to $73,945,750. Other destination countries such as Italy also experienced a decline in export value from 2019 to 2020 with a value of $65,918,992 to a value of $49,324,220.

Apart from destination countries that reduced the value of exports, there were also export destination countries in 2020 during the pandemic that experienced an increase in export value, namely China, Germany, Vietnam, India and China. It can be seen from the country's data that the export value is higher compared to the year before the pandemic, namely 2019. For example, in 2019 China was worth $60,615,900 and in 2020 it was worth $145,508,265. China's order went from 9th to second in 2020. The same as Germany's export destination, with the same position but the trade value increased by $1,694,079.

Table 2 inform of the RCA value of coffee, tea and spice commodities is presented. Through RCA analysis, it can explain the competitive position of the commodities being researched, namely coffee, tea and spices. Based on the results in table 2 for the period 2019 and 2020 to see the competitiveness of commodities before and during the Covid-19 pandemic. The following results were obtained:

Table 2. RCA Value

Year	RCA Value
2019	1
2020	1.000653

Source: Data processed (2022)

Although aggregate RCA values remain above one, disaggregation by destination market reveals heterogeneous patterns. Exports to the United States, Japan, and Italy show declining trade values between 2019–2020, indicating weakening bilateral competitiveness, while shipments to China, Vietnam, and India increase significantly. These divergences imply that Indonesia's comparative advantage is preserved mainly through expansion in Asian markets rather than traditional Western buyers.

The development of export competitiveness of Indonesian white jasmine flowers does not have global competitiveness (Kaunang, 2013; Simamora & Nadapdap, 2021). However, when viewed from the competitiveness of export destination countries, of course there is potential that needs to be developed. Singapore, the US and China have trade value exports of agricultural commodities from Indonesia. Revealed from Simamora & Nadapdap (2021) One of the ways in which export competition is measured is the international price of the commodity. High international prices mean that demand from other countries will also decrease. When choosing an export location, of course distance and accessibility considerations such as transportation costs and freight costs are the main considerations.

South Sulawesi was the largest source of foreign exchange in the agricultural sector in 2012 (Zulkifli, 2015). The agricultural sector was disclosed at 37.93%. This value is spread across many commodities. Cocoa bean commodity with an export value of US$ 292581.38 thousand. Fresh shrimp commodities with an export value of US# 48223.31 thousand, Arabica coffee commodities of US$ 19526.54 thousand and finally rubber with an export value of US$ 15349.3 thousand (Zulkifli, 2015).

Asrol & Hariyanto (2017) sees spices exports, especially nutmeg, as Indonesia's leading export spices commodity on the international market. The export value of nutmeg on the world market is the second highest after Sri Lanka, namely in the 2012-2016 research year. Of course coffee, tea and spices commodities from Indonesia are selling well on the world market, this is because Indonesia, with its natural wealth, can create quality products. Apart from that, processed coffee, tea and spices products are currently increasingly in demand in the market.

Because from the wealth of coffee, tea and spices it is reprocessed into products that are ready to be processed by the world community.

Commodity exports need to know their future potential. What is the potential for Indonesian agricultural export commodities in the international market. It is important to know this policy to see the position and role of commodity competitiveness. Through EPD, it is known that Indonesian agricultural commodities of coffee, tea and spices are as follows:

Table 3. EPD Value

X	Y	Information
-0,04998	-0,70207	Retreat

Source: Data processed (2022)

From the results, it is known that the 2019-2020 EPD is in quadrant 3, namely retreat. Belgium exports the commodities nutmeg, mace and cardamom which have less market development potential, so these commodities are in a retreat position in the Belgian market (Nurhayati et al., 2019). This can be seen from the growth value of the export share and the share of products with negative value. The negative value is obtained from the value of Indonesia's total exports to the market compared to the total world export value to that market from the year of research. So the value tends to fall.

4. CONCLUSION

The findings of this study indicate that Indonesia’s coffee, tea, and spices commodities maintained a strong comparative advantage during the 2019–2020 period, as reflected in RCA values consistently above one and showing a slight increase in the first year of the COVID-19 pandemic. This suggests that, at a structural level, HS-09 commodities retained their fundamental competitiveness in global markets despite the broader economic disruptions brought about by the pandemic.

However, the Export Product Dynamics (EPD) analysis places Indonesia in the retreat quadrant, indicating that the growth of Indonesia’s market share lagged behind overall world market dynamics. This position reflects a weakening trajectory of long-term competitiveness, even though the comparative advantage itself remains intact. The heterogeneous trade patterns—marked by declining exports to major traditional destinations such as the United States, Japan, and Italy, alongside increasing exports to Asian markets such as China and India—further demonstrate that shifts in competitiveness vary significantly across export destinations.

It is important to emphasize that the conclusions drawn in this study are constrained by the analytical tools employed, namely RCA and EPD. These indicators are limited to describing relative competitive positions and aggregate market-share dynamics; they do not directly support inferences regarding specific policy interventions, such as fiscal stimulus or capacity-building programs for farmers. Consequently, operational policy recommendations cannot be inferred solely from the empirical evidence presented.

Overall, this study provides a descriptive assessment of Indonesia’s competitive position in coffee, tea, and spices exports before and during the early stages of the COVID-19 pandemic. To generate more comprehensive and policy-relevant insights, future research should incorporate additional determinants of competitiveness, including logistics costs, product quality attributes, integration into global value chains, and differentiated strategies based on destination-market characteristics.

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