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Competitiveness of Indonesian Shrimp Exports to Japan in 2010-2019

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Abstract The growth of fisheries' Gross Domestic Product (GDP) in 2019 increased from the previous year, with most of it met through export activities, one of which was the export of shrimp commodities. One of the export markets for Indonesian shrimp commodities is Japan. From 2010 to 2019, the value of Indonesia's shrimp commodity exports to Japan fluctuated, so an analysis was needed to investigate how the competitiveness of Indonesian shrimp exports to Japan in 2010-2019 using the Revealed Comparative Advantage (RCA) method was and what was the position or performance of commodity exports. Indonesian shrimp exports to Japan in 2010-2019 used the Export Product Dynamic (EPD) method. The analysis results show that the average RCA value of Indonesian shrimp commodities is 4.54; the results indicated that the export of Indonesian shrimp commodities to Japan has a comparative advantage and strong competitiveness. While the results of the analysis using the EPD method obtained that Indonesia's shrimp commodity exports to Japan were in a falling star position. This position shows that Indonesia's shrimp commodity exports have a competitive advantage but weak competitiveness because the export growth of Indonesia's shrimp commodities tends to stagnate. It does hope that there will be an increase in the quality and quantity of Indonesia's shrimp commodity exports to reach the "rising star" position and diversify Indonesian shrimp export products, especially processed shrimp.

Keywords Shrimp Commodity, Competitiveness, RCA, EPD

1. Introduction

The growth of fisheries' gross domestic product by value based in 2019 on quarter IV at agriculture, forestry, and fisheries sectors was 449.9 billion IDR, while the GDP by business field on constant value based on 2010 was 294.7 billion IDR. The growth rate and resources of gross domestic product in business field for agriculture, forestry, and fisheries sectors in quarter IV in 2019 was 9.46 %, while the GDP structure in business field in 2019 for agriculture, forestry, and fisheries sectors was 12.72 % [1]. Fisheries GDP in 2019 grew by 11.94 %. Although it has not yet reached the set target, fishery GDP growth in 2019 has reached the national average GDP growth of 5.02 %. The value of fisheries GDP at constant prices will continue to increase. In 2018, the value was IDR 238,616.2 billion, and in 2019, it increased to IDR 252,484.6 billion. The fishery GDP was mostly fulfilled through the Indonesian export activity sector, which is accounted for 3.20 % [2].

Indonesia's exports in 2019 in Table 1 for the oil and gas sector were 11,789.2 million, and non-oil and gas were 155,893.8 million [3]. Indonesia's exports in November 2020 amounted to US$15,259.3 million with a volume of 53,282.5 thousand tons. This value consists of US$762.2 million for the oil and gas sector and US$14,497.1 million for the non-oil and gas sector. Compared with the value of Indonesia's exports in October 2020, there was an increase of 6.25 %. Indonesia's trade balance in 2020 decreased by 2.19 % for non-oil and gas exports [4]. Indonesia's ten main products are shrimp, coffee, palm oil, cocoa, rubber and products rubber (RPR), textile, and products textile (TPT), footwear, electronics, motor vehicle components, and

furniture. Indonesia's ten main non-oil and gas export commodities have their respective roles. In 2017, fishery commodities, namely shrimp commodities, amounted to 1.06 %. The volume of shrimp exports in 2019 was 1,269.2 tons [4]. Based on Indonesia's ten main non-oil and gas export commodities, shrimp is one of Indonesia's main commodities.

Shrimp is one of Indonesia's leading commodities. The value of Indonesian shrimp exports provides the highest share of 33.52% of the total value of Indonesia's exports [5]. Exports of Indonesian shrimp commodities to international markets include frozen shrimp, fresh shrimp, and processed shrimp. Frozen shrimp is 75 %, fresh shrimp is 22 %, and processed shrimp is 3 % of the total number of types of shrimp produced. Added value to shrimp products consists of basic value and product value. The basic value consists of peeling skin, tail, and shrimp head, while the product value consists of processed shrimp products [6]. Indonesia's shrimp export destinations include Japan, the United States, Hong Kong, China, South Korea, Singapore, Malaysia, Taiwan, Thailand, Vietnam, Australia, and countries in Europe such as Belgium, England, Spain, France, Canada, Germany, and Italy [7].

Japan is a country whose fishery needs do meet through imports. One of the shrimp commodities imported by Indonesia is frozen shrimp with HS code 030617. Countries that export frozen shrimp exporters with HS code 030617 to Japan include Vietnam, Indonesia, India, Thailand, and China. Indonesia ranks second as an exporter of frozen shrimp to Japan with a value of 21.2 %. In 2013 Indonesia was ranked third of the five main exporting countries of shrimp commodities overall to Japan. In that position, Indonesia's shrimp exports amounted to 16.8 %, with Indonesia's shrimp commodity exports in the world amounting to US$ 1.56 billion, and the value of Japan's imports from the world amounting to US$ 2.84 billion. This commodity shows that Indonesia has a large enough potential of US$ 1.04 billion to export shrimp commodities to Japan [5]. In 2017 Japan leading in third positions of the aimed of frozen and processed shrimp were 12 % or US$ 2.5 billion [8].

In 2019 the export value of Indonesian frozen shrimp with HS code 030617 (Shrimps and prawns, frozen, other than cold-water) was US$ 261,846,488 with a volume of 24,447,098 kilograms. The export value of Indonesian fresh shrimp with HS code 030636 (Crustaceans; live, fresh, or chilled, shrimp, and prawns excluding cold-water varieties, in shell or not) was US$ 206,913 with a volume of 6,439 kilograms. The export value of Indonesian processed shrimp with HS code 160521 (Shrimps and prawns, prepared or preserved, not in airtight containers) was US$ 16,931,395 with a volume of 1,945,178 kilograms, and processed shrimp with HS code 160529 (Shrimps and prawns, prepared or preserved in airtight containers) was US$ 54,700,795 with a volume of 6,215,658 kilograms. The export value of shrimp with HS code 160521 decreased in 2018, while shrimp exports with HS code 160529 continued to increase from 2017 to 2019 [9]. Indonesia is one of the exporting countries for shrimp commodities to Japan, especially for frozen shrimp with HS code 030617. Based on its potential and capabilities, the importance of this research is to see how the competitiveness and export position of Indonesian shrimp commodities to Japan are. This study aimed to analyze the export competitiveness of Indonesian shrimp commodities to Japan and analyze the position of the competitiveness of Indonesian shrimp exports to Japan.

2. Materials and Methods

The study was conducted in April 2021 using time series data or periodic data from 2010-2019. The research was conducted online using data sourced from the United Nations Commodity and Trade Database (UN Comtrade) website. The data analysis method used consists of Revealed Comparative Advantage (RCA) and Export Product Dynamic (EPD).

Table 1. Indonesia's Export Trade Balance

Description	2015	2016	2017	2018	2019
Export	150,366.3	145,186.2	168,828.2	180,012.7	167,683.0
Oil and Gas	18,574.4	13,105.5	15,744.3	17,171.7	11,789.2
Non-Oil and Gas	131,791.9	132,080.8	153,083.9	162,840.9	155,893.8

Source: Ministry of Trade [3]

2.1. Revealed Comparative Advantage (RCA)

Revealed Comparative Advantage (RCA) is a method used to analyze the competitiveness of a country's commodities. The principle does base on trade between countries that show their competitiveness or comparative advantage. The variable measured in the RCA method is the performance of product exports to the country's total exports and then compared with the share of the product value in world trade. In this study, the author uses RCA to analyze the competitiveness of Indonesian shrimp commodity exports to Japan [10]. RCA was calculated using the Equation below.

$$RCA = \frac{\frac{Xij}{XTij}}{\frac{Xwj}{XTwj}} \quad (1)$$

Where i is the country of origin, j is the country of destination, and w is the world. Information:

Xij: The export value of shrimp commodity from country i to country j

Xtij: Total export value from country i to country j

Xwj: The value of shrimp commodity exports from the world (w) to country j

XTwj: Total export value from the world (w) to country j

The criteria for RCA include:

(1) RCA > 1, the country has a comparative advantage in its commodities and has strong competitiveness.
(2) RCA < 1, the country does not have a comparative advantage in its commodities and has weak competitiveness.

2.2. Export Product Dynamic (EPD)

Export Product Dynamic (EPD) is a method used to measure the competitive position of a country's products or commodities in certain market destinations. EPD has a matrix consisting of market attractiveness and information on the strength of a product. The measurement of EPD was based on the market share growth of a commodity. EPD formulation was as follows.

Axis X: Growth in Indonesia's export market share

$$\frac{\sum_{t=1}^{t}(\frac{Xij}{Wij})tx100\% - \sum_{t=1}^{t}(\frac{Xij}{Wij})t-1x100\%}{T} \quad (2)$$

Axis Y: Growth in the market share of Indonesian products or commodities

$$\frac{\sum_{t=1}^{t}(\frac{Xt}{Wt})tx100\% - \sum_{t=1}^{t}(\frac{Xt}{Wt})t-1x100\%}{T} \quad (3)$$

Where,

Xij: The value of Indonesia's shrimp commodity exports to importing countries

Xt: Total export value of Indonesia's exports to importing countries

Wij: Importing country's export value of world shrimp commodities

Wt: Total value of world exports to importing countries

The market share of commodities and products in trade can be known after calculating their competitiveness and can be seen in Table 2.

Table 2. Matrix of Export Product Dynamic Market Position

Share of Country's Export in World Trade (X)	Share of Product in World Trade (Y)	
	Rising (Dynamic)	Falling (Stagnant)
Rising (Competitiveness)	Rising Star	Falling Star
Falling (Non-Competitiveness)	Lost Opportunity	Retreat

Source: Pudyastuti et al. [6]

The rising star is the most ideal and highest position because, in this position, the product or commodity of a country experiences rapid growth (fast-growing product). Lost opportunity is a position when a product or commodity experiences a decline in competitiveness. This decline can see from the total export market share, which is negative and less than zero (<0), while the market share of the product or commodity is positive or more than 0 (>0). In that position, a country's product or commodity will lose its opportunity to reach international markets. The retreat is an uncompetitive position. In this position, the total export market share of the product or commodity is negative or less than 0 (<0), thus causing the market to no longer want the product or commodity of a country. A falling star is a better position than a lost opportunity. In this position, there is still an increase in market share, resulting in competitive advantage, but weak competitiveness and product or commodity growth tend to stagnate. In that position, the total export market share is positive or more than 0 (>0), while the product or commodity market share is negative or less than 0 (<0).

3. Results

3.1. Indonesian Shrimp Commodity Export Competitiveness to Japan 2010-2019

The RCA is a method used to analyze the competitiveness of a country's commodities. The variable measured in this method is the performance of product exports to the total exports compared with the share of the product value in world trade [10]. The criteria used in the calculation of RCA consist of two, namely if the RCA value > 1, then a country has a comparative advantage in their product or commodity and is highly competitive, whereas if the RCA value is < 1, then a country does not have a comparative advantage in their product or commodity and have a weak competitiveness. The higher the RCA value of a product or commodity from that country, the higher its competitiveness. Vice versa, the lower the RCA value of a product or commodity from that country, the lower its competitiveness [11]. If the RCA

calculation is more than one, then the product or commodity from a country is encouraged to be oriented towards export activities, whereas if the RCA calculation is less than one, then the product or commodity from a country is not export-oriented [12].

Based on data obtained from the UN Comtrade website, an analysis of the competitiveness of Indonesia's shrimp exports, consisting of frozen shrimp, fresh shrimp, and processed shrimp, was calculated using Revealed Comparative Advantage (RCA). The RCA value of Indonesian shrimp commodity exports to Japan and shrimp exporting countries to Japan, namely Thailand, Vietnam, and India, can be seen in Table 3.

The criteria used in the calculation of RCA consist of two, if the RCA value > 1, a country has a comparative advantage in its product or commodity and has a highly competitiveness, whereas if the RCA value is < 1, then a country does not have a comparative advantage in its product or commodity and is weakly competitive. The higher the RCA value of a product or commodity from that country, the higher its competitiveness. Vice versa, the lower the RCA value of a product or commodity from that country, the lower its competitiveness [11].

Based on the results of research conducted, the export of shrimp commodities from Indonesia, Thailand, Vietnam, and India to Japan from 2010 to 2019 has a strong comparative advantage and competitiveness. The average RCA value for Indonesia is 4.541, which is worth more than 1. The average RCA value for Thailand is 6.462. The average RCA value for Vietnam is 12.306, and India is 16.397. The following is the result of calculating the RCA value of frozen shrimp, fresh shrimp, and processed shrimp to Japan (Table 3).

a. Frozen Shrimp (HS 030617)

Based on the calculations carried out, the RCA value of frozen shrimp with HS code 030617 from Indonesia, Thailand, Vietnam, and India to Japan can be seen in Table 4.

Table 3. RCA Value of Shrimp Exporting Countries to Japan

	RCA			
Year	**Indonesia**	**Thailand**	**Vietnam**	**India**
2010	3.271	7.160	16.913	11.465
2011	2.901	7.679	12.896	12.773
2012	3.723	10.225	13.477	11.530
2013	4.263	7.563	13.579	8.991
2014	5.090	6.161	14.729	17.954
2015	5.234	5.380	11.457	19.107
2016	4.989	4.942	10.071	20.348
2017	4.636	4.654	10.209	19.177
2018	5.288	5.550	10.631	21.586
2019	6.017	5.308	9.093	21.041
Average	4.541	6.462	12.306	16.397

Source: Research Results (2021)

Table 4. RCA Value of Frozen Shrimp Exporting Countries to Japan

	RCA			
Tahun	**Indonesia**	**Thailand**	**Vietnam**	**India**
2010	3.944	4.976	17.419	15.614
2011	3.511	5.067	12.676	18.022
2012	5.004	7.068	14.646	18.421
2013	5.598	4.059	13.745	13.825
2014	5.794	2.609	12.472	24.379
2015	6.509	2.374	10.591	29.058
2016	6.182	2.251	9.026	30.418
2017	5.633	2.136	9.055	27.018
2018	6.279	2.444	8.614	29.685
2019	7.793	2.478	8.117	32.948
Average	5.625	3.546	11.636	23.939

Source: Research Results (2021)

Based on the results of calculations carried out, the The average RCA value of frozen shrimp from Indonesia to Japan is 5.625, with the highest RCA value in 2019 of 7.793, so that Indonesia's frozen shrimp exports have a comparative advantage and strong competitiveness. The highest RCA value in 2019 was due to the large percentage of Indonesia's frozen shrimp export value to Japan to the total value of Indonesia's exports, with a percentage of 1.63%. Although the value of Indonesia's frozen shrimp exports to Japan in 2019 decreased from 2018 to 6.5% or US$ 18,864,488. Indonesia's competitor countries, namely Thailand, Vietnam, and India obtained RCA values >1. The average RCA scores for each country were 3.546, 11.636, and 23.939.

b. Fresh Shrimp (HS 030636)

Based on the calculations carried out, the RCA value of frozen shrimp with HS code 030636 countries from Indonesia, Thailand, Vietnam, and India to Japan is shown in Table 5.

Based on the results of calculations carried out, the RCA value of Indonesian fresh shrimp exports to Japan in 2019 is 2.852, and the average RCA value is 2.024, so that Indonesia's fresh shrimp exports to Japan had a strong comparative advantage and competitiveness. The RCA of Indonesia's fresh shrimp exports to Japan does not have a comparative advantage and is weak in competitiveness when viewed from the average value. This value is due to Japan being the second country after European countries with quite difficult export requirements.

The average RCA value of fresh shrimp exports from Thailand, Vietnam, and India were 1.332, 6.327, and 0, respectively. Thailand's shrimp exports to Japan do not have a comparative advantage and are weakly competitive, like India. Vietnam throughout 2010-2017 had a fairly high RCA value, especially in 2017 where Vietnam was able to control half of the world's fresh shrimp exports to Japan by 57.92%, so that Vietnam's fresh shrimp exports to Japan have a comparative advantage and strong competitiveness. However, in 2019 Vietnam and India did not export fresh shrimp to Japan.

c. Processed Shrimp (HS 160521)

Based on the calculations, the RCA value of processed shrimp with HS code 160521 from Indonesia, Thailand, Vietnam, and India to Japan can be seen in Table 6.

Based on the calculations carried out, the average RCA value of Indonesian processed shrimp exports with HS 160521 to Japan is 2.219 and the highest RCA value in 2014 of 3.648. Indonesia's non-airtight packaged processed shrimp exports have a comparative advantage and strong competitiveness, with the Indonesian non-airtight packaged processed shrimp exports (HS 160521) in 2014 to the world's non-airtight packaged processed shrimp exports to Japan of 13.20%.

Table 5. RCA Value of Fresh Shrimp Exporting Countries to Japan

	RCA			
Year	**Indonesia**	**Thailand**	**Vietnam**	**India**
2010	0.221	0.429	5.776	0.011
2011	0.273	0.756	4.979	0.025
2012	0.115	0.603	14.024	0.610
2013	0.512	1.381	7.721	0.001
2014	0.122	0.352	5.088	0
2015	0.172	0.154	3.926	0
2016	0.051	0.364	2.588	0
2017	1.195	0.643	19.169	0
2018	0.025	1.168	0	0
2019	2.852	1.446	0	0
Average	2.024	1.332	6.327	0

Source: Research Results (2021)

Table 6. RCA Value of Processed Shrimp Exporting Countries (HS 160521) to Japan

	RCA			
Year	Indonesia	Thailand	Vietnam	India
2010	1.514	13.679	16.025	0.266
2011	1.464	14.575	13.781	0.017
2012	1.892	17.451	10.188	0.297
2013	1.984	15.109	13.154	0
2014	3.648	19.421	24.114	0
2015	3.139	11.610	14.929	0
2016	2.831	10.955	13.338	0.002
2017	1.430	7.505	12.563	0.010
2018	1.611	13.190	9.678	0
2019	2.681	13.378	9.038	1,16E-05
Average	2.219	13.687	13.681	0.066

Source: Research Results (2021)

Table 7. RCA Value of Processed Shrimp Exporting Countries (HS 160529) to Japan

	RCA			
Year	**Indonesia**	**Thailand**	**Vietnam**	**India**
2010	1.514	13.679	16.025	0.266
2011	1.464	14.575	13.781	0.017
2012	0.632	8.059	17.136	1.253
2013	0.964	10.464	14.231	0
2014	1.906	7.641	13.517	0
2015	1.994	10.829	7.700	0.950
2016	2.370	9.976	10.106	1.254
2017	3.839	17.622	13.803	0.415
2018	3.638	14.461	21.862	0.180
2019	4.323	8.817	11.766	0.044
Average	2.631	11.612	13.993	0.627

Source: Research Results (2021)

d. Processed Shrimp (HS 160529)

Based on the calculations, the RCA value of processed shrimp with HS code 160521 from Indonesia, Thailand, Vietnam, and India to Japan is shown in Table 7.

Based on the results of calculations carried out, the average RCA value of Indonesian airtight packaged processed shrimp exports to Japan is 2.631 and the highest RCA value in 2019 is 4.323, so that Indonesia's airtight packaged processed shrimp exports have a comparative advantage and strong competitiveness. The average RCA value of Indonesia's competitor countries includes Thailand at 11.612, Vietnam at 13.993, and India at 0.627.

Thailand's highest RCA value occurred in 2017 of 17.622, with the export value of airtight packaged processed shrimp to Japan to the world's export value of airtight packaged processed shrimp to Japan of 69.97%. Vietnam's highest RCA value occurred in 2018 of 21.862, with the export value of airtight packaged processed shrimp to Japan to the world's export value of airtight packaged processed shrimp to Japan of 67.42%.

3.2. The Competitive Position of Indonesian Shrimp Exports to Japan in 2010-2019

The EPD (Export Product Dynamic) matrix consists of market attractiveness, the x-axis, and business strength, and the y-axis. The matrix will produce four categories of market positions, including rising star positions indicating that a country has achieved the highest market because demand for its products is growing rapidly. The lost opportunity position is an unwanted position. This matrix

is because the position indicates that a country is losing dynamic market share. The falling star position is a better position than the lost opportunity position. This matrix is because the market share increases in products or commodities that are not dynamic. The retreat position is the most undesirable; this position is an input for a country to switch to other dynamic products or commodities [13].

Based on the results of the calculations carried out, it can see in Figure 1, Indonesia's shrimp commodity exports to Japan are in the "falling star" position. Rising star positions indicating that a country has achieved the highest market because demand for its products is growing rapidly. The lost opportunity position is an unwanted position. This matrix is because the position indicates that a country is losing dynamic market share. The falling star position is a better position than the lost opportunity position. This matrix is because the market share increases in products or commodities that are not dynamic. The retreat position is the most undesirable; this position is an input for a country to switch to other dynamic products or commodities [13].

In this position, the total export market shares experienced positive growth of more than 0, while the export market share for shrimp commodities decreased and was negative or less than 0. In this position, Indonesia's shrimp commodity exports have a competitive advantage but weak competitiveness.

Thailand's shrimp commodity exports to Japan are in a "lost opportunity" position. In this position, Thailand will experience a decrease in market share in the dynamic total exports. Vietnam's shrimp commodity exports to Japan are in a "rising star" position. This position is the ideal and highest because the total export market share and the export market share for shrimp commodities are experiencing fast-growing products. India's shrimp commodity exports to Japan are in a "falling star" position. In this position, Indian shrimp exports to Japan have a competitive advantage but weak competitiveness. The following results from the EPD calculation from frozen shrimp, fresh shrimp, processed shrimp from Indonesia, Thailand, Vietnam, and India to Japan.

a. Frozen Shrimp (HS 030617)

Based on the calculations, the EPD value of frozen shrimp with HS code 030617 from Indonesia, Thailand, Vietnam, and India to Japan does obtain in Figure 2.

Indonesia is in the falling star position along with India. In this position, frozen shrimp export from Indonesia and India to Japan has a competitive advantage, but its competitiveness is weak. Thailand is in a "lost opportunity" position. This position shows that Thailand's frozen shrimp exports to Japan experienced a decline in exports or lost the opportunity to reach the Japanese market, while Vietnam was in the highest position, namely rising star. This position shows that Vietnam's frozen shrimp exports to Japan are experiencing rapid growth.

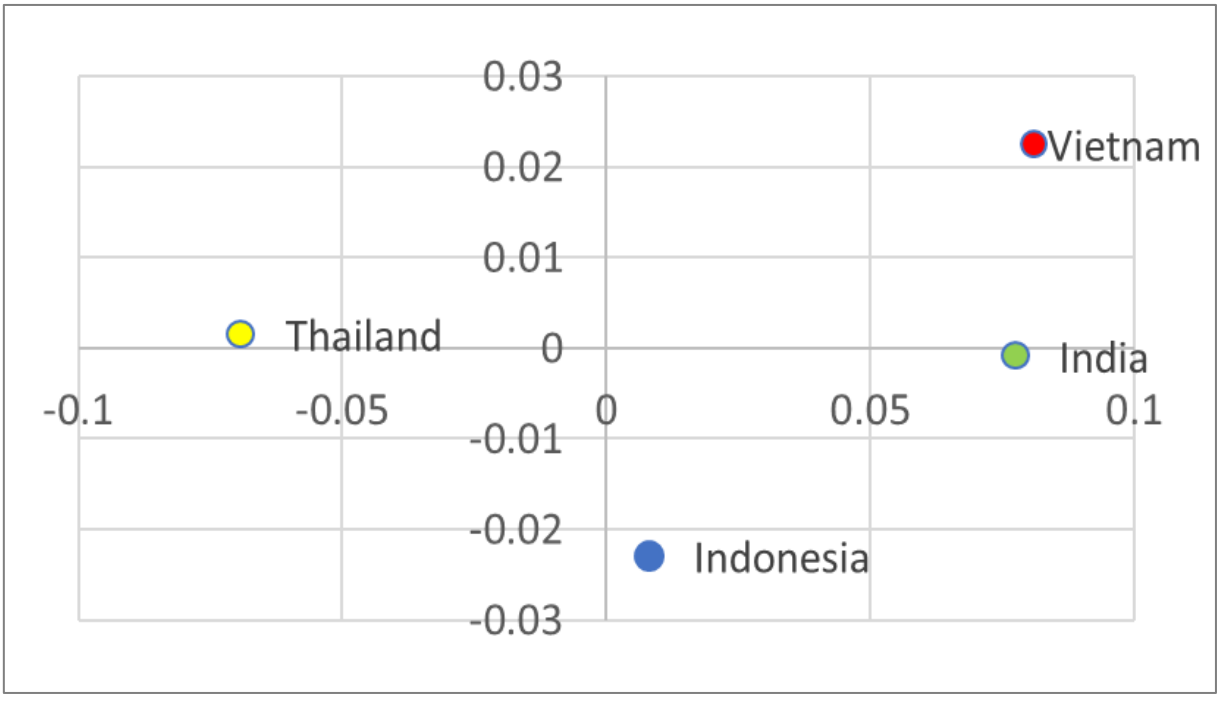

Figure 1. EPD Matrix of Shrimp Exporting Countries to Japan

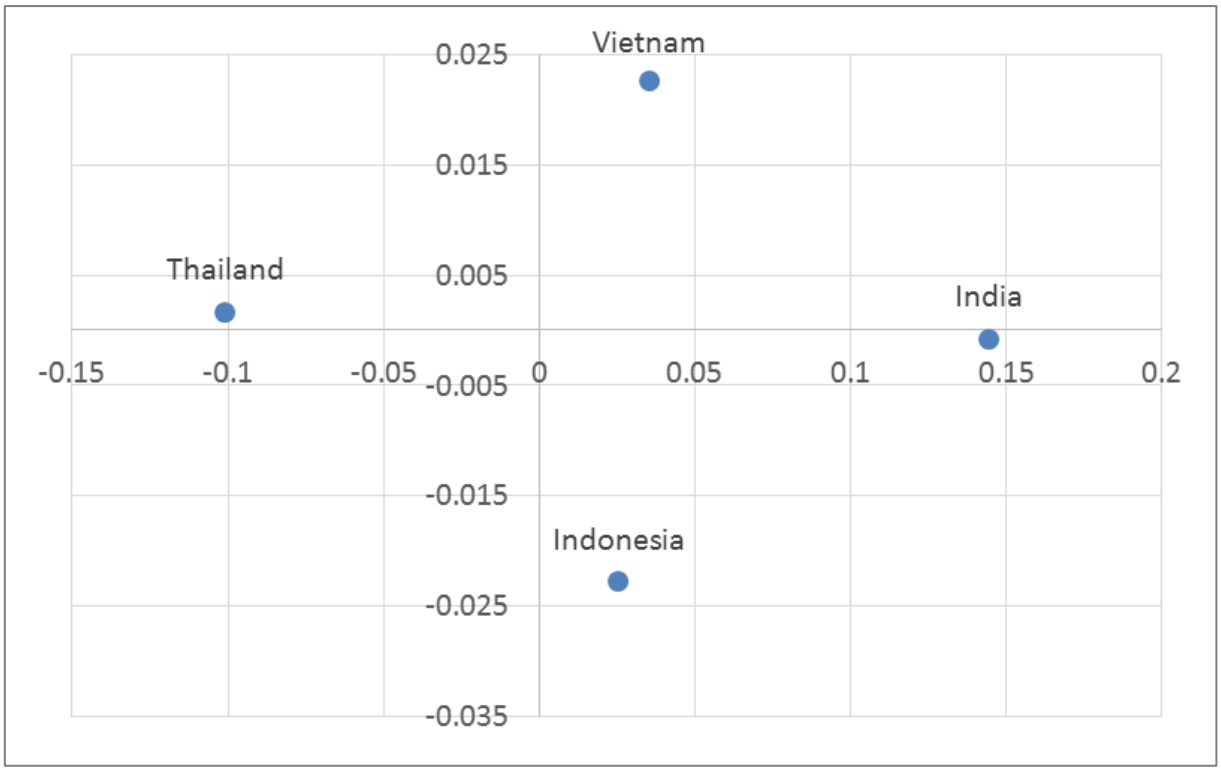

Figure 2. EPD Matrix of Frozen Shrimp Exporting Countries to Japan

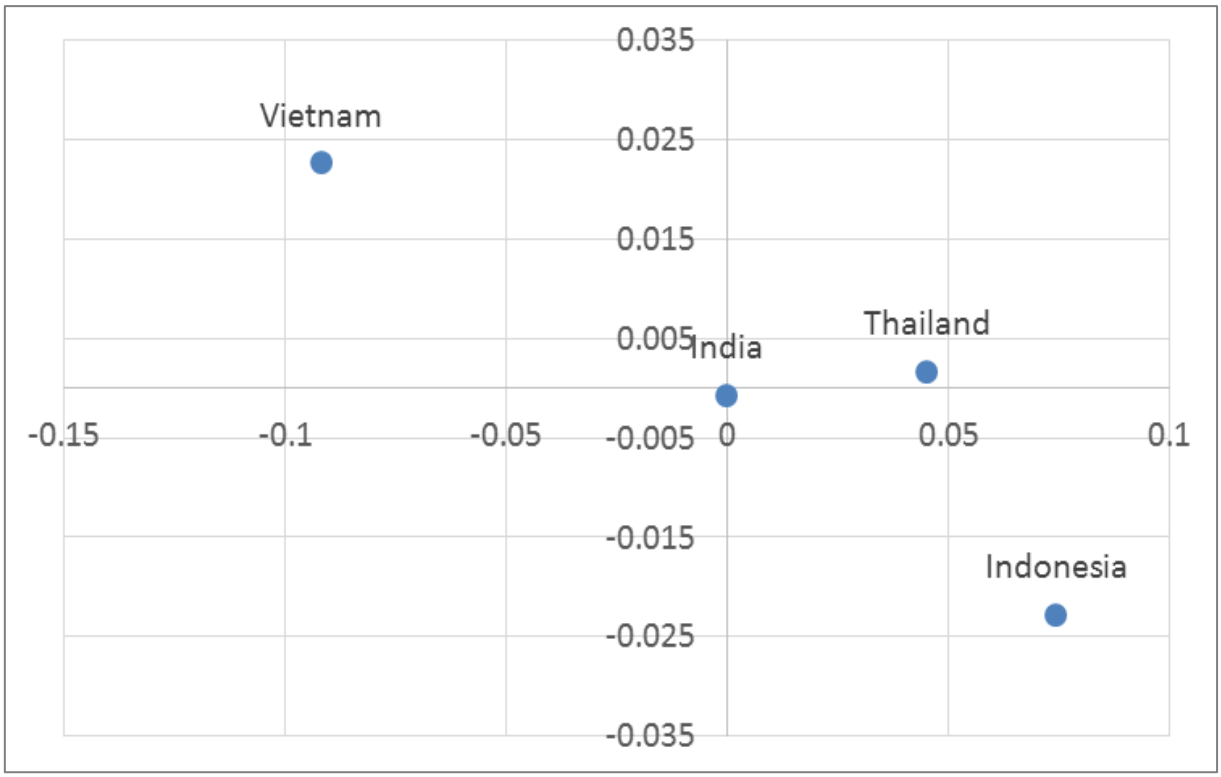

Figure 3. EPD Matrix of Fresh Shrimp Exporting Countries to Japan

b. Fresh Shrimp (HS 030636)

Based on the calculations, the EPD value of fresh shrimp with HS code 030636 from Indonesia, Thailand, Vietnam, and India to Japan does obtain in Figure 3.

Indonesia is in the falling star position. In this position, Indonesia's fresh shrimp exports to Japan have a competitive advantage, but its competitiveness is weak.

Thailand is in the highest position, namely rising star. This position shows that Thailand's fresh shrimp exports to Japan are experiencing rapid growth.

Vietnam is in a lost opportunity position; this position shows that Vietnam's fresh shrimp exports to Japan are unable to reach the Japanese market or have lost the opportunity to reach the Japanese market. While India is in a retreat position where India's fresh shrimp exports are not competitive, the point shows India's position has another meaning that India does not export fresh shrimp to Japan.

c. Processed Shrimp (HS 160521)

Based on the calculations carried out, the EPD value of processed shrimp with HS code 160521 from Indonesia, Thailand, Vietnam, and India to Japan does obtain in Figure 4.

Indonesia is in the falling star position. In this position, the export of processed shrimp in non-airtight packaging from Indonesia to Japan has a competitive advantage, but its competitiveness is weak. Thailand and Vietnam are in the highest position, namely rising stars. This position shows that the export of processed shrimp in non-airtight packaging from Thailand and Vietnam to Japan is experiencing rapid growth. Characterized by the average growth of total exports, the exports of processed shrimp is positive. India is in a "retreat" position where India's processed shrimp exports are not competitive, a point that shows India's position has another meaning that India does not export non-airtight packaged processed shrimp to Japan.

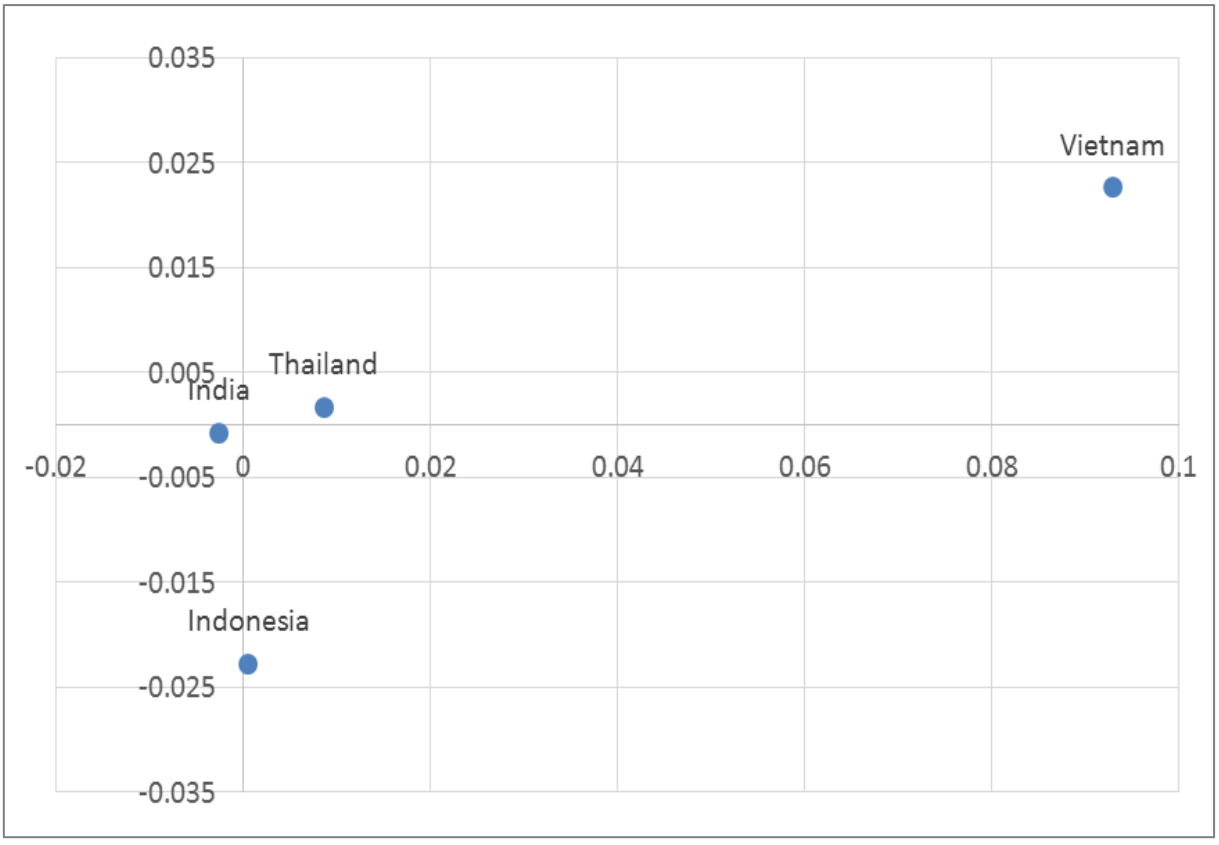

Figure 4. EPD Matrix of Processed Shrimp Exporting Countries (HS 160521) to Japan

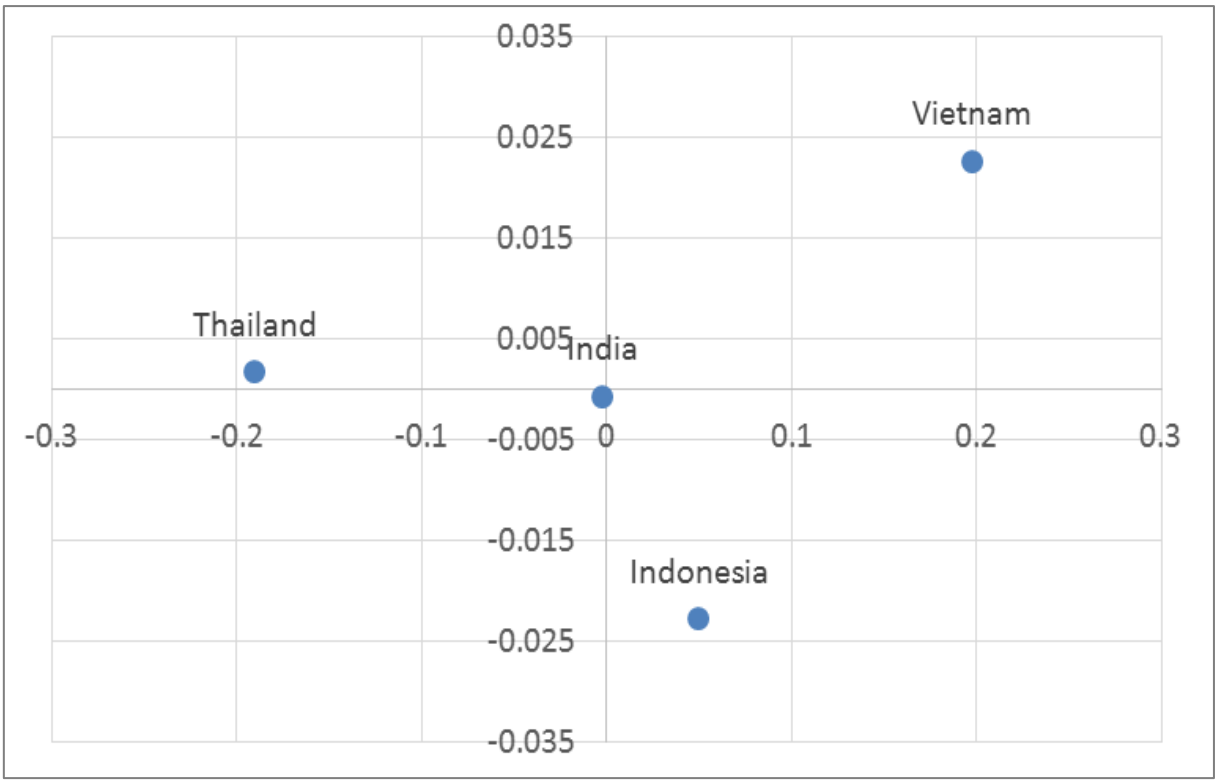

Figure 5. EPD Matrix of Processed Shrimp Exporting Countries (HS 160529) to Japan

d. Processed Shrimp (HS 160529)

Based on the calculations carried out, the EPD value of processed shrimp with HS code 160521 from Indonesia, Thailand, Vietnam, and India to Japan does obtain in Figure 5.

Indonesia is in the falling star position. In this position, the export of processed shrimp in airtight packaging from Indonesia to Japan has a competitive advantage, but its competitiveness is weak. Thailand is in a lost opportunity position; this position shows that Thailand's airtight packaged shrimp exports have lost their opportunity to reach the Japanese market. At this point, the export value of Thailand's airtight packaged processed shrimp is very low.

Vietnam is in the highest position, namely rising star. This position shows that Vietnam's airtight packaged shrimp exports to Japan are experiencing rapid growth. This position does indicate by the average growth of total exports and positive exports of fresh shrimp. India is in a "retreat" position, namely India's export of airtight packaged processed shrimp is not competitive, a point that shows India's position has another meaning that India does not export airtight packaged processed shrimp to Japan.

The calculations using the RCA and EPD methods show that the RCA and EPD values do not have a relationship. The RCA value shows a comparative advantage, namely the ability of Indonesian shrimp commodities to produce goods and services with lower production costs, with one of the factors being the condition of Indonesia's natural resources. Indonesian products with comparative advantages include frozen shrimp, non-airtight packaged processed shrimp, and airtight processed shrimp. Competitive advantage does not depend on the condition of a country's natural resources but its productivity. When viewed from the EPD calculation, it can be seen that the export of Indonesian shrimp commodities to Japan already has a competitive advantage but weak competitiveness. The export position of Indonesian shrimp commodities to Japan, such as frozen shrimp, non-airtight packaged processed shrimp, and airtight packaging, is in the falling star position. This position can still increase to a rising star position by increasing Indonesia's frozen shrimp exports to Japan and maintaining the stability of domestic shrimp production.

Processed shrimp in non-airtight packaging and airtight packaging has the opportunity to reach a rising star position by diversifying products and increasing MSMEs or industries to process shrimp to increase the added value of Indonesian shrimp production. Opening a large-scale shrimp farm (shrimp estate) can be a big advantage if the production does not focus solely on the export of frozen shrimp but also on processing shrimp into ready-to-cook or ready-to-eat products that will increase the added value of Indonesian shrimp exports.

4. Conclusion

Indonesian shrimp commodity exports have an RCA

value of more than one. It has a comparative advantage and strong competitiveness. The competitiveness position of Indonesian shrimp commodities is in the falling star position. In this position, Indonesian shrimp commodities have a competitive advantage but weak competitiveness because the export growth tends to stagnate. It does hope that business actors can improve the quality and quantity of shrimp commodity exports to reach the "rising star" position. The government does expect to increase the diversification of Indonesian shrimp export products, especially processed shrimp.

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REFERENCES

[1] Statistic Indonesia. Berita Resmi Statistik Pertumbuhan Ekonomi Indonesia Triwulan I-2020, pp. 1-12, 2020.

[2] Ministry of Marine Affairs and Fisheries. Laporan Kerja Kementrian Kelautan dan Perikanan, 2019.

[3] Ministry of Trade, Portal Statistik Perdagangan. Neraca Perdagangan Indonesia Total, 2020. [Online]. Available: http://www.statistik.kemendag.go.id. [Accessed Februari 2020].

[4] Statistic Indonesia. Buletin Statistik Perdagangan Luar Negeri, Buletin Statistik Perdagangan Luar Negeri Ekspor Menurut Komoditi HS November 2020, pp. 1-248, 2020. 7,8

[5] Admin DKKP. Dinas Ketahanan Pangan dan Perikanan, KKP Jelaskan Soal Turunnya Ekspor Produk Perikanan, 24 June 2019. [Online]. Available: dkpp.buleleng.go.id. [Accessed June 2021].

[6] P. A. Pudyastuti, H. Sambodo, K. Windhani. Analisis daya saing ekspor komoditas udang indonesia di pasar eropa tahun 2008-2016, Seminar Nasional dan Call for Paper Sustainable Competitive Advantage (SCA), vol. 8, pp. 1-15, 2018.

[7] Ministry of Trade. Directorate General For National Export Development, 2019. [Online]. Available: ppei.kemendag.go.id. [Accessed Februari 2021].

[8] S. Mashari, R. Nurmalina, Suharno. Dinamika daya saing ekspor udang beku dan olahan indonesia di pasar internasional, Jurnal Agribisnis Indonesia, vol. 7, no. 1, pp. 37-52, 2019.

[9] UNCOMTRADE. UN Comtrade Database," 2020. [Online]. Available: http://comtrade.un.org. [Accessed November 2020].

[10] F. Wahyudi, J. Haryadi, A. Rosdiana. Analisis daya saing udang indonesia di pasar ekspor, Forum Agribisnis, vol. 9, no. 1, pp. 1-16, 2019.

[11] F. Zuhdi, Suharno, Analisis daya saing ekspor kopi indonesia dan vietnam di pasar asean 5, Habitat, vol. 26, no. 3, pp. 152-162, 2016.

[12] S. Saptanto. Daya saing ekspor produk perikanan indonesia di lingkup asean dan asean-china, J. Sosek KP, vol. 6, no. 1, pp. 51-60, 2011.

[13] M. A. Wardani, S. Mulatsih. Analisis daya saing dan faktor-faktor yang mempengaruhi ekspor ban indonesia ke kawasan amerika latin, Jurnal Ekonomi dan Kebijakan Pembangunan, vol. 6, no. 1, pp. 81-100, 2017.