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Export Performance Analysis on Indonesian Yellowfin Thunas (HS 030342) in the United States Market

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Abstract: *Tuna is a major fish commodity that has high economic value that dominates the export market of Indonesian fishery industry products. This study was carried out to analyze competitiveness, comparative advantage, trading patterns and trends of Indonesian tuna exports in the United States market from 2013-2022 using the Revealed Comparative Advantage (RCA), Revealed Symmetric Comparative Advantage (RSCA), and Constant Market Share (CMS). The results showed that Indonesia's RCA value is above one (>1) during the 2013-2022 period, meaning that Indonesian tuna has competitiveness, the RSCA value is also above one (>0), meaning that Indonesian tuna has a comparative advantage. According to the CMS analysis, Indonesia's growth of standard exports to the United States is still lower than the growth of world standard exports to the United States so that Indonesia's export performance is still relatively low. The distribution effect of the Indonesian tuna market shows a positive value which means that Indonesia has succeeded in showing good product distribution performance to the market. The effect of commodity composition and the effect of competitiveness of Indonesian tuna shows a negative value so that Indonesia is considered to have not met the market and is less competitive.*

Keywords: RCA; RSCA; CMS; Tuna; Export; Competitiveness

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INTRODUCTION

Economic growth is an instrument utilized to measure a growing economy (Rawung, Poluakan and Hamenda, 2023). Economic growth is changing the economic process towards a better condition (Putra and Putri, 2021). Economic growth is crucial to increasing the per capita income of a country's population (Ibrahim and Abdul, 2019). However, most countries are having problems maintaining stability and issues with their country's economic growth (Faridsky, Canon and Rantow Payu, 2022). International trade encourages foreign investments that play an important role of improving a country due to the association with new ideas, advanced technology, improved management, skill development, capital gain, new work opportunities, and development in the sector of industry (Rochdiani and Wulandari, 2023)

Indonesia is an archipelagic country with an area of 5.8 million km² (3.25 million km² of ocean and 2.55 million km² of Exclusive Economic Zone (EEZ)) and a coastline of 81,000 km and 17,499 islands. This indicates that Indonesian fisheries have great potential both in quantity and diversity. Indonesia's strategic geographical location and diversity of marine life species are comparative advantages owned by Indonesia. Indonesia's fisheries and marine sector has a fairly high demand, from within the country to abroad. The industry and fisheries sector are the main livelihoods of the majority of coastal communities. (Rahmansyah et al., 2021). Increasing the production of the national fisheries industry plays an important role in national development. Fishery products are not only a producer of animal protein sources but also participate in generating the country's foreign exchange income. (Tumulyadi et al., 2019).

Fisheries exports consist of several main commodities that predominantly contribute the largest export value, one of which is tuna exports. The value of tuna exports contributes an average of 14% of the total value of fisheries exports so that it plays a role in contributing foreign exchange to the national economy which still has the potential to continue to be improved. The increase in tuna exports can be caused by world fish consumption which continues to increase every year, FAO data (2018) shows that the increase in fish supply for human consumption needs has grown by an average of 3.2% per year from 1961-2016. World fish consumption has a tendency to continue to increase which also includes tuna consumption causing opportunities to increase tuna exports are still wide open. World tuna demand continues to increase driven by increasing demand for canned tuna and tuna products for sushi and sashimi, especially in non-traditional markets such as East Asia, China, South Asia and Latin America (FAO, 2016), but Indonesia's tuna export growth tends to slow down. The growth in tuna export value from 2012-2018 on average was only 1% due to a decrease in exports from 2013 to 2016. This is due to the potential of Indonesia's fish resources that have not been managed optimally (Arthatiani et al., 2020).

International Trade

International trade is a trade transaction activity between countries that aims to meet the needs of each country involved, especially the country's foreign exchange reserves (Itamary et al., 2022). International trade is also a key factor of a country's increasing Gross Domestic Product (GDP). International trade also occurs because of the existence of advantages in each country over other countries which are called absolute or absolute advantages. In international trade, not all countries have an absolute advantage in producing goods. In fact, there are countries that have more expensive production costs than other countries for the same type of product. Countries with higher production costs certainly cannot compete with their competitors, unless the country has a comparative advantage (Ramadhani, Hendrati and Asmara, 2021).

Export

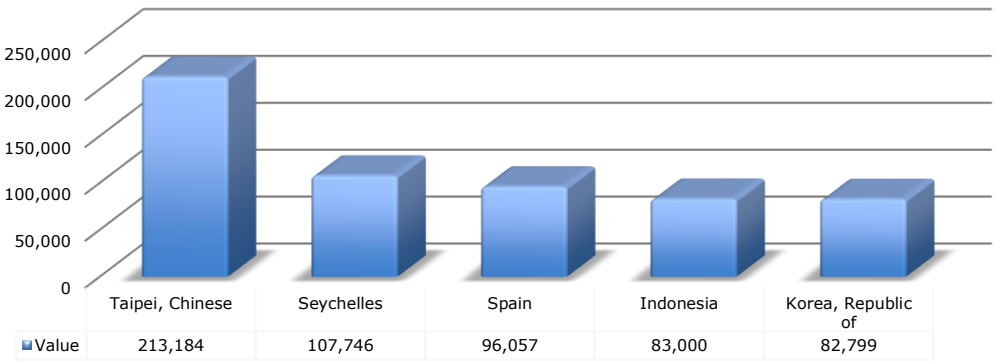
Export is selling goods abroad carried out by the exporting country and importing country based on the terms agreed by both countries. The export process is generally the activity of removing goods or commodities from within the country and distributing them to other countries. Export is the activity of selling an item produced in and shipped to other countries with certain policies & procedures that have been mutually agreed upon by these countries (Laili, 2021)

Competitiveness

Competitiveness defined as the capability of a country to control market positions by increasing the scale and benefits of production. In this sense, competitiveness also affect the success of a country in international trade in the long run (Fatimah et al., 2021).

Tuna

Tuna is a type of fish that has important economic value and until now still dominates the export of Indonesian fishery industry products. (Prinaldi, Suptijah and Uju, 2018). The growth of national fisheries industry production plays an important role in national development. Fishery products are not only a producer of animal protein sources, but also participate in generating state foreign exchange income.



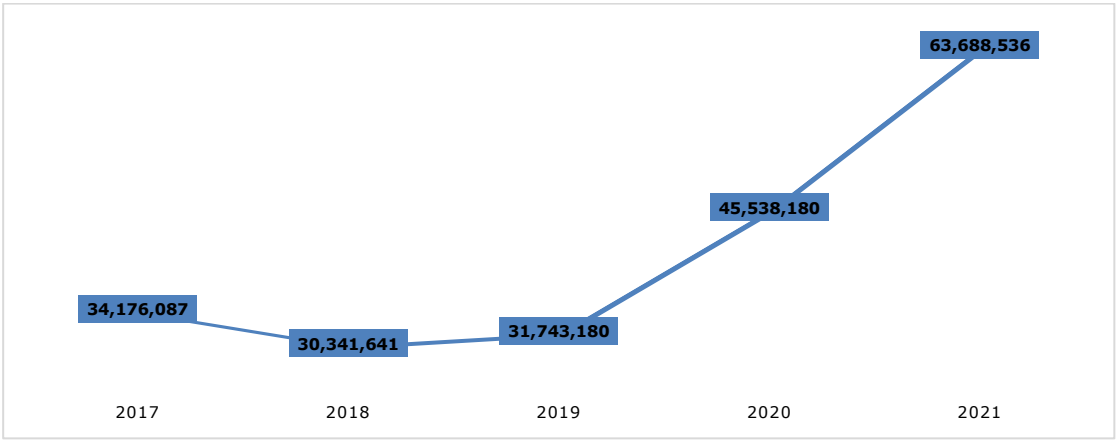
Source: ITC Trademap (2022)
Figure 1. Top Five Highest Yellowfin Tuna Exporting Countries in 2022 (USD Thousand)

In 2022, Indonesia occupies the third position as an exporter of Yellowfin Tuna to the world with a total export value of USD 83,000 preceded by Taipei with a value of USD 213,184, Seychelles with a value of USD 107,746, and Spain with a value of USD 96,057 and followed by other exporting countries such as Korea with a value of USD 82,799.

Indonesia as one of the exporters of Yellowfin Tuna has several competitors. Indonesia ranked third as the largest exporter of Yellowfin Tuna in the world followed by Spain and Taipei which occupy the second and first positions, and followed by Korea and Viet Nam which occupy the fourth and fifth positions. Apart from occupying the second position as the country's foreign exchange-earning commodity, tuna is still one of the commodities that has economic value (Rahmansyah et al., 2021).

Launching from catch report data at WCPFC and IOTC, Indonesia ranked first as the world's largest tuna catcher from 2011 to 2017. In the Pacific Ocean, Indonesia's catch data in 2017 ranked first at 466,269 tons. The next top five ranks are Papua Niugini 304,478 tons, Japan 285,981 tons, Korea 265,540 tons, and Taiwan 223,146 tons. But in 2017, Indonesia's position was displaced from the first rank, seized by Spain with a catch of 151,622 tons, followed by the Maldives with 139,759 tons. Indonesia ranked third with 131,605 tons, followed by Seychelles with 130,178 tons, and Iran with 113,0277 tons. Indonesia's ranking is threatened to plummet again in the coming year if there is no policy change and there is still minimal utilization of the high seas (Sugandhi, 2019).

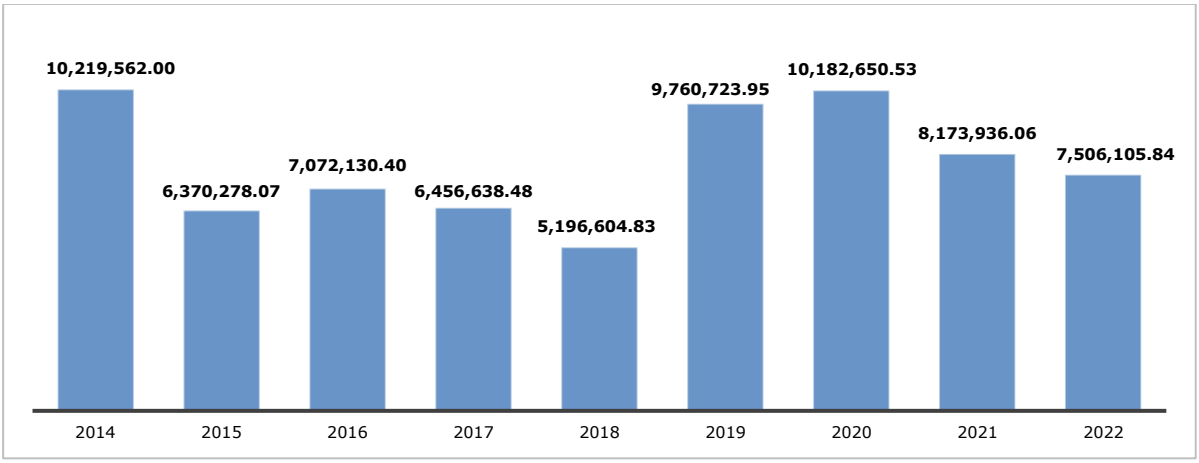
In 2018, Thailand ranked first in the world tuna exporter with a volume of 535,612 tons with a value of 2,325,474 US dollars, followed by Spain 350,496 tons, Taiwan 339,135 tons, Ecuador 239,289 tons, the United States 218,984, Korea 210,791 tons, Papua Niugini 197,111 tons, Seychelles 171,975 tons. While Indonesia is ranked sixth in the world with a volume of 167,695 tons and a value of 710,110 million US dollars (UN COMTRADE, 2023).



Source: UN COMTRADE (2023)
Figure 2. Export Value of Indonesian Yellowfin Tuna to the World (2017-2021)

Based on the data above, in 2017 Indonesia recorded USD 34,176,087 of total export value of Yellowfin Tuna worldwide. Then in 2018, it experienced fluctuations where the total export value of Indonesian Yellowfin Tuna was recorded at USD 30,341,641. From 2019 to 2021, the total export value experienced significant growth by recording a total export value of USD 63,688,536 in 2021 (UN COMTRADE, 2023).

The economy of America in early 2022 is highly controversial. In the fourth quarter of 2021, Gross Domestic Products (GDP) grew by 6.9%, unfortunately during the first quarter of 2022, it decreased by 1.4%. Although, most macroeconomic indicators are quite satisfactory, particularly unemployment fell to the level of full employment by 3.6%. Over time, the economic activity of the able-bodied population began to grow. The company's profits are increasing. By the time of third quarter of 2021, the figure was already 21% higher than pre-pandemic levels. Rising profits encourage business investment (Supyan, 2022).



Source: Central Bureau of Statistics (2022)

Figure 3. Export Value of Indonesian Yellowfin Tuna to the United States (2014-2022)

Indonesia as one of the exporters of Yellowfin Tuna also often experiences fluctuations up and down. Total export value of Indonesian Yellowfin Tuna fluctuated from the total export value of USD 10,219,562.00 in 2014 to USD 6,370,278.07 in 2015. Then, in 2016, the total export value of Indonesian Yellowfin Tuna increased by USD 7,072,130.40, but then fluctuated again with a total export value of USD 5,196,604.83 in 2018. In 2019 to 2020, the total export value of Indonesian Yellowfin Tuna positively increased by USD 9,760,723 and by USD 10,182,650 in 2020. However, from 2021 to 2022 it fluctuated again. Starting in 2021, the total export value is USD 8,173,936. Then in 2022, the total export value decreased again, amounting to USD 7,506,105.84. Based on some of the descriptions above, the author is interested in conducting a study entitled "Export Performance Analysis of Indonesian Yellowfin Tuna (HS 030342) in the United States Market".

METHODOLOGY

This research is a Quantitative research that analyzes the level of competitiveness and export performance of Frozen Yellowfin Thunas (HS 030342) The object of this research is the export of Frozen Yellowfin Thunas with Harmonized Code (HS 030342)with the Purposive Sampling of five countries which are Philippines, Indonesia, Malaysia, Vietnam, and Thailand. Secondary data with the time series starting from 2013 to 2022 is used in this research. The data originated from official sources or institutions such as Central Bureau of Statistics (BPS), Trademap (ITC), and UN COMTRADE.

Data Analysis Methods

Revealed Comparative Advantage (RCA)

Data processing and analysis techniques are carried out quantitatively and descriptively. Quantitative analysis is performed with RCA analysis. The calculation results from the RCA analysis will be described according to the theory of the analysis tool. RCA is one method that can be used to measure the comparative advantage of a commodity in a region (country, province, etc.)

Revealed Symmetric Comparative Advantge (RSCA)

RSCA is a refinement of the analysis tool, namely Revealed Comparative Advantage (RCA) where the RCA index is not equal to both neutral sides, namely 1 so that the RCA indicator is made symmetrical known as Revealed Symmetric Comparative Advantage (RSCA) (Fatimah et al., 2021). It is known that if the RSCA value > 0 means that the country's export products have a high value in comparative advantage, on the other hand, if the RSCA value is < 0, it means that the comparative advantage in the country is low and competitiveness is low.

Constant Market Share (CMS)

CMS used as a way of analyzing causes of fluctuations in a country’s commodity exports where there are changes in the competitiveness of the product commodity or due to shrinkage of the total import market. Three effects such as composition of commmodity, distribution of its markets, and the competitive level of that commodity where it is described as a form of comparison between the export growth rate of a country with the standard export movement rate (world) The combination of these three effects is able to describe the export growth of a country as follows (Fatimah et al., 2021).

In CMS analysis there are four parameters, namely:

Standard Export Growth	If the world standard export growth measure commodity (i) to country (j) is lower than the export growth of commodity (i) from country (a) to country (j), it can be interpreted that the export performance of Country (a) is superior to the export performance of other countries, and vice versa.
Commodity Composition	If composition of commodities showing positive effect, it means that the series of commodities (i) is sufficient to fill the market’s demands and rules in country j and vice versa.
Market Distribution	If the effect of market distribution is showing positive values, it can be conclude that a country has sufficient abilities to distribute its market, and vice versa.
Competitiveness	When this effect shows a positive result, meaning country (a) is stronger than other competing countries, and vice versa.

RESULTS

Revealed Comparative Advantage (RCA)

Table 1. RCA Calculation Results of Yellowfin Tuna (HS 030342) Exporting Countries to the United States Market

Year	Philippines	Indonesia	Malaysia	Vietnam	Thailand
2013	68,08	142,16	0,06	2,60	1,00
2014	109,14	101,71	0,47	0,00	0,00
2015	71,06	46,62	0,11	0,00	0,18
2016	65,30	49,65	0,00	0,07	0,00
2017	57,13	26,81	1,20	0,06	0,00
2018	31,95	21,36	0,61	0,06	0,00
2019	101,01	38,37	0,66	0,00	0,00
2020	303,81	58,94	1,77	0,00	0,00
2021	36,67	17,74	1,04	0,00	0,00
2022	6,73	8,66	0,18	0,00	0,00
Average	85,09	51,20	0,61	0,28	0,12

Source: Secondary Data, processed

Table 1. indicating RCA value in the period 2013 to 2022, Indonesia is in second place, surpassed by its competitor the Philippines. The highest RCA Indonesia value was in 2013 with a value of 142.16 and the lowest RCA value was in 2022 with a value of 8.66. Meanwhile, the Philippines' highest RCA value was in 2020 with a value of 303.81 and the lowest RCA value was in 2022 with a value of 6.73. Meanwhile, Malaysia, Vietnam and Thailand had RCA averages of 0.61, 0.28, and 0.12 respectively.

Revealed Symmetric Comparative Advantage (RSCA)

Table 2. RSCA Calculation Results of Yellowfin Tuna (HS 030342) Exporting Countries to the United States Market

Year	Philippines	Indonesia	Malaysia	Vietnam	Thailand
2013	0,97	0,99	-0,89	0,44	0,00
2014	0,98	0,98	-0,36	-1,00	-1,00
2015	0,97	0,96	-0,80	-1,00	-0,69
2016	0,97	0,96	-1,00	-0,86	-1,00
2017	0,97	0,93	0,09	-0,88	-1,00
2018	0,94	0,91	-0,24	-0,89	-1,00
2019	0,98	0,95	-0,20	-1,00	-1,00
2020	0,99	0,97	0,28	-1,00	-1,00
2021	0,95	0,89	0,02	-1,00	-1,00
2022	0,74	0,79	-0,69	-1,00	-1,00
Average	0,95	0,93	-0,38	-0,82	-0,87

Source: Secondary Data, processed

Table 2. shows that based on data on RSCA values from 2013 to 2022, Indonesia and the Philippines have a fairly high RSCA value. The highest RSCA value in Indonesia was in 2013 with a value of 0.99 and the lowest RSCA value was in 2022 with a value of 0.79. Meanwhile, the highest RSCA Philippines value was in 2020 with a value of 0.99 and the lowest RSCA value was in 2022 with a value of 0.74.

Constant Market Share (CMS)

Table 3. Standard Export Growth

Year	Philippines	Indonesia	Malaysia	Vietnam	Thailand	Standard Growth
2013-2014	0,09	-0,04	0,03	0,14	0,00	-0,43
2014-2015	-0,05	-0,15	-0,14	0,08	-0,07	0,33
2015-2016	-0,04	-0,04	-0,05	0,09	0,01	0,32
2016-2017	0,12	0,17	0,15	0,22	0,10	0,27
2017-2018	0,07	0,07	0,14	0,13	0,06	0,05
2018-2019	0,04	-0,07	-0,04	0,09	-0,02	0,06
2019-2020	-0,09	-0,03	-0,02	0,06	-0,07	-0,39
2020-2021	0,17	0,42	0,28	0,19	0,17	1,35
2021-2022	0,06	0,26	0,18	0,40	0,06	0,98
Average	0,04	0,07	0,06	0,16	0,03	0,28

Source: Secondary Data, processed

Table 3. shows that based on the average value of standard export growth Indonesia ranks second with an average value of 0.07, surpassed by its competitor Vietnam in first place with an average value of 0.16. Meanwhile, Malaysia ranks third with an average score of 0.06, then the Philippines ranks fourth with an average score of 0.04, and Thailand ranks fifth with an average score of 0.03.

Table 4. Effects of Commodity Composition

Year	Philippines	Indonesia	Malaysia	Vietnam	Thailand
2013-2014	-0,000133019	-0,000038713	-0,000000093	-0,000003844	-0,000006658
2014-2015	-0,000058239	-0,000011480	-0,000000048	-0,000002380	-0,000004339
2015-2016	0,000180228	0,000038711	0,000000047	0,000001676	0,000013423
2016-2017	0,000078330	0,000016647	0,000000113	0,000011271	0,000007841
2017-2018	-0,000188406	-0,000025163	-0,000000651	-0,000015244	-0,000022194
2018-2019	0,000003773	0,000000514	0,000000026	0,000000183	0,000000484
2019-2020	0,000094572	0,000014241	0,000000634	0,000005761	0,000011066
2020-2021	-0,000745788	-0,000114127	-0,000004130	-0,000025383	-0,000048688
2021-2022	-0,000009913	-0,000010045	-0,000000245	-0,000001921	-0,000003761
Average	-0,000086496	-0,000014380	-0,000000483	-0,000003320	-0,000005870

Source: Secondary Data, processed

Table 4. indicating that based on the value of commodity composition effects Indonesia ranks fourth with an average value of -0.000014380, surpassed by its competitor Malaysia in first place with an average value of -0.000000483, Vietnam ranks second with an average value of -0.000003320, and Thailand ranks third with an average value of -0.000005870. Meanwhile, the Philippines ranks fifth with an average value of -0.000086496.

Table 5. Market Distribution Effects

Year	Philippines	Indonesia	Malaysia	Vietnam	Thailand
2013-2014	-0,000036245	-0,000044382	-0,000000017	0,000000000	-0,000000364
2014-2015	0,000047440	0,000029437	0,000000121	0,000000000	0,000000000
2015-2016	0,000009909	0,000004684	0,000000010	0,000000022	0,000000019
2016-2017	0,000008447	0,000004669	0,000000000	0,000000015	0,000000000
2017-2018	0,000008667	0,000002946	0,000000119	0,000000013	0,000000000
2018-2019	0,000005790	0,000002537	0,000000064	0,000000000	0,000000000
2019-2020	-0,000093295	-0,000023171	-0,000000366	0,000000000	0,000000000
2020-2021	0,000639584	0,000093165	0,000002719	0,000000000	0,000000000
2021-2022	0,000094015	0,000031933	0,000001923	0,000000000	0,000000000
Average	0,000076035	0,000011313	0,000000508	0,000000006	-0,000000038

Source: Secondary Data, processed

Table 5. indicating that based on the average value of market distribution effects, Indonesia ranks second with an average value of 0.000011313, surpassed by its competitor Philippines in first place with an average value of 0.000076035. Meanwhile, Malaysia ranks third with an average value of 0.000000508, then Vietnam ranks fourth with an average value of 0.0000000006, and Thailand ranks fifth with an average value of -0.000000038.

Table 6. Competitiveness Effect

Year	Philippines	Indonesia	Malaysia	Vietnam	Thailand
2013-2014	0,000039055	-0,000021089	0,000000215	0,000000000	-0,000000633
2014-2015	-0,000039326	-0,000041012	-0,000000241	0,000000213	0,000000158
2015-2016	-0,000008200	0,000005059	-0,000000119	-0,000000039	-0,000000226
2016-2017	-0,000019148	-0,000035827	0,000001775	-0,000000049	0,000000000
2017-2018	-0,000048649	-0,000009622	-0,000000798	-0,000000181	0,000000000
2018-2019	0,000174413	0,000023551	0,000000109	0,000000000	0,000000000
2019-2020	0,000245686	0,000025187	0,000001223	0,000000000	0,000000000
2020-2021	-0,000884380	-0,000096452	-0,000001552	0,000000000	0,000000000
2021-2022	-0,000171168	-0,000037463	-0,000003502	0,000000000	0,000000007
Average	-0,000079080	-0,000020852	-0,000000321	-0,000000006	-0,000000077

Source: Secondary Data, processed

Table 6. indicating based on the average value of competitiveness effects Indonesia ranks fourth with an average value of -0.000020852, surpassed by its competitor Vietnam in first place with an average value of -0.0000000006. Then there is Thailand which ranks second with an average value of -0.000000077, and Malaysia which ranks third with an average value of -0.000000321. Meanwhile, the Philippines ranks fifth with an average value of -0.000079080.

DISCUSSION

According to the results of the research above, it can be seen that the RCA value of Indonesia and the Philippines in the period 2013 to 2022 is more than one (>1), which means that in that period Indonesia and the Philippines have competitiveness in the United States market. In addition, it is known that in the period from 2013 to 2022, Malaysia achieved more than one RCA score (>1) and was competitive only three times each in 2017, 2020, and 2021. While Vietnam and Thailand are known to have an RCA value of no more than one (<1), which means that both countries have no competitiveness in the period from 2013 to 2022.

Furthermore, the results also show that the RSCA value of Indonesia and the Philippines in the period 2013 to 2022 is more than zero (>0), which indicates that in that period the two countries have a comparative advantage in the United States market.

In addition, it is known that in the period from 2013 to 2022, Malaysia achieved RSCA values of more than zero (>0) and had a comparative advantage only three times each in 2017, 2020, and 2021. While Vietnam and Thailand are known that in the period 2013 to 2022 has an RSCA value of no more than 0 (<0) only once, namely in 2013.

The study's result indicates the value of CMS Indonesia and its competitor countries fluctuates. The average export growth of standard yellowfin tuna (HS 030342) of the Philippines, Indonesia, Malaysia, Vietnam, and Thailand to the United States market shows a positive average export growth value, but these values are still lower when compared to the average export growth of the World yellowfin tuna (HS 030342) standard export to the United States. This indicates that the export performance of the five countries is insufficient.

The average value of the effect of commodity composition shows that the Philippines, Indonesia, Malaysia, Vietnam, and Thailand have negative values, indicating that the five countries' yellowfin tuna (HS 030342) commodities are not sufficient for the United States market demand.

The average value of the market distribution effect shows that the Philippines, Indonesia, Malaysia and Vietnam have positive values, which indicates that the four countries have the ability and capability to distribute their products. While Thailand has a negative average score which indicates that Thailand does not yet have the capability to distribute its products.

The average value of the competitiveness effect shows that the Philippines, Indonesia, Malaysia, Vietnam, and Thailand have negative scores, indicating that these five countries are not yet competitive enough in the market.

CONCLUSION

The author concludes that Indonesia has a high competitiveness of Yellowfin Tuna (HS 030342) exports in the United States market, but has a negative influence on the Commodity Composition Effect and Competitiveness Effect. Meanwhile, the Market Distribution Effect has a positive influence on the Yellowfin Tuna (HS 030342) commodity in the United States Market and ranks second.

Indonesian governments have to maintain relations with Yellowfin Tuna (HS 030342) commodity importing countries, including the United States so that the export market share of its commodities increases. In addition, the Indonesian government, which acts as an exporter, must often improve the composition of Indonesian Yellowfin Tuna (HS 030342) commodities because of its elastic nature to income which can also have an impact on the competitiveness of these commodities.

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