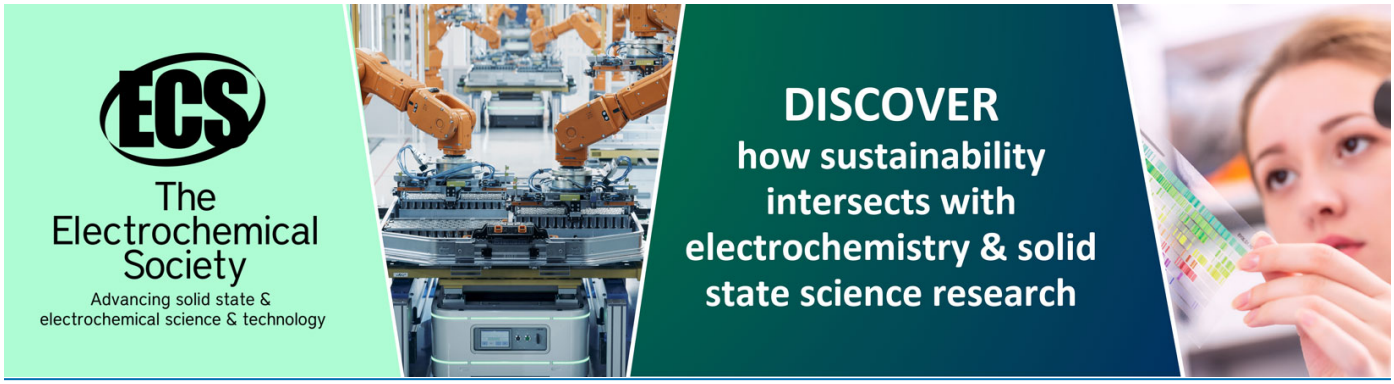
Indonesian tuna position in the international market



Indonesian tuna position in the international market

M Khaliqi*, T C Pane and R B M I Fatoni

Faculty of Agriculture, Universitas Sumatera Utara, Medan, Indonesia

E-mail: *muhammadkhaliqi@usu.ac.id

Abstract. The potential of Indonesia fishery has been utilized well by Indonesia although not managed optimally. The contribution of fisheries to GDP Indonesia of the year 2010-2013 experienced a positive trend means fisheries Indonesia has the potential to be further developed next year. Every year, the competition of fresh tuna fish commodities in the world market continues to increase because that need for research on the competitiveness of Indonesian tuna on world markets. This study used secondary data taken from international trade center by using 6 HS commodity tuna of HS 0302031-HS0302036. The analysis used in this research is the analysis of RCA (Revealed Comparative Advantages) and the CMSA (Constant Market Share). The RCA result showed that there were three commodity tuna with competitiveness comparative namely HS 0302032, 0302033 and 0302034. Each type of commodity the tuna fish has a market share almost the same relative is Japan. This represents Japanese are the target market after regulations in the European Union market. Results of the estimation CMSA describes the effects of the most dominant influence on Indonesian tuna exports in the world market is the competitiveness effect.

1. Introduction

Indonesia is one country that has the longest coastline in the world with a long coastline makes Indonesia as a country that has a marine resource potential to be developed. The potential of marine resources owned by Indonesia so big, like fishery potential to reach about 6.4 million tons of fish / year. The potential of fishery owned by Indonesia have been utilized well by Indonesia although not managed optimally. This is illustrated by the fisheries sector's contribution to the national GDP Indonesia in 2013 amounted to Rp. 165,162.9 billion [1].

Table 1. Contribution of Business Sector to Indonesian GDP, 2010-2013 (Percent)

Sector	Year			
	2010	2011	2012	2013
Agriculture	15.29	14.71	14.50	14.43
Fishery	3.09	3.06	3.10	3.21
Forestry	0.75	0.70	0.67	0.63
Others	73.54	73.46	73.7	74.34
GDP	100	100	100	100

From Table 1 the contribution of fisheries to the GDP of Indonesia from 2010-2013 experienced a positive trend means fisheries Indonesia has the potential to be further developed next year. One of the

fish into the spotlight in the fisheries sector is tuna. Indonesia ranks second as tuna fish producing country after Thailand in the ASEAN region. As the second producer countries Indonesia have export opportunities to supplement foreign exchange [2]

Table 2. Production of Primary Commodities Fishing Year 2011-2014 (Ton)

Fish	Year		
	2012	2013	2014
Tuna	275.778	305.435	310.560
Cakalang	429.024	481.014	484.610
Skipjack	432.138	451.048	454.180
Other Fish	3.684.634	3.848.064	3.900.980
Total	4.821.574	5.085.561	5.150.330

From table 2 it can be seen tuna fish production in Indonesia from 2012 to 2014 continued to increase. Percentage growth of production in the year 2012-2013 amounted to 9.71%, but the percentage of growth in 2013-2014 experienced a decrease of only 1.65%. It needs to be examined because of the decline of tuna production growth will have an impact on our trade sector both nationally and internationally that have relatively increased demand each year. The demand for tuna in the world market each year has increased but the Indonesian tuna fish production continues to increase, Indonesia has not been able to increase the export of tuna fish products to the world. The export value of fresh tuna Indonesia has a downward trend.

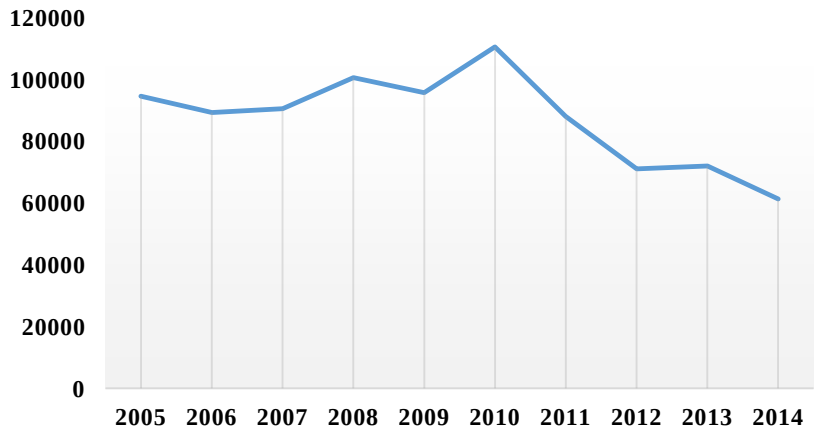


Figure 1. Indonesian Fresh Tuna Exports in World Market [3]

The decline in the value of exports of fresh tuna Indonesia in the world market one of them allegedly for their non-tariff barriers to trade conducted by the country's importers of Indonesian tuna. Some of the barriers to trade in tuna Indonesia as an example of the contents of the Certificate Catch Fish (SHTI) and the high import duties to the EU market. SHTI Regulation comes into force on January 1, 2010 to the whole country exporter of tuna to the EU market.

From year to year the competition of fresh tuna fish commodities in the world market continues to increase because that need for research on the competitiveness of Indonesian tuna in the world market. The competitiveness of commodities seen from two indicators, namely competitive advantage and comparative advantage. Competitive advantage is a tool used to measure the competitiveness of an activity based on actual economic conditions. The concept of competitive advantage was first developed by Porter (1990). There are four main factors that determine the competitiveness of an industry, namely 1) the factors of resources, 2) demand, 3) supporting industries and related industries

as well as 4) the structure, competition and corporate strategy. [4] These four factors are supported by chance factors and government factors in improving industrial competitiveness advantage. Meanwhile, the concept of comparative advantage (the law of comparative advantage) states that a country that is less efficient will specialize in producing export commodities on a commodity that has a small absolute loss. Of the commodity and the country has a comparative advantage will import commodities losses greater absolute [5].

2. Methods

2.1. Data collection and analysis

In this study used panel data by type of secondary data from the years 2009 - 2014 which is quoted on the international trade center. This data is used to analyze the competitiveness of Indonesian tuna in the world market. Panel data is used in the form of data Indonesian tuna exports to the countries of destination as well as import data from the largest importing countries of tuna Indonesia. Harmony system used in this study consisted of 6 HS ie, HS 030 231, HS 030 232, HS 030233, HS 030234, 030235 HS, and HS 030236. HS is a way of grouping the products to the trade data for both exports and imports. In analyzing the competitiveness of the commodity sectors and there is a wide variety of analysis tools. In this study using two methods of analysis, analysis of RCA (Revealed Comparative Advantage) and using a CMS (Constant Market Share).

2.2. RCA (Revealed Comparative Advantages)

RCA method is a method to analyze the comparative advantage of a commodity-based exports of a country's export performance which is largely determined by the level of competitiveness relative to similar products made in other countries ceteris paribus. [6]

RCA formula is as follows:

$$RCA = \left(\frac{Xik}{Xim}\right) / \left(\frac{Xwk}{Xwm}\right) \quad (1)$$

Where:
xik : Export value of products I state K
xim : Total value of exports of country K
xwk : Export value of products I world
xwm : Total Value of world export

The provisions of the RCA is the value of 1 is the dividing line between comparative advantage and disadvantage. So if the value of the RCA is greater than 1, showing that certain product competitiveness of a country's competitiveness is strong enough for the product as measured by the average. While the RCA value smaller than 1 shows the absence of a specific product competitiveness in a country. [6]

The advantage of using RCA index is that the index intrinsic consider the advantages of certain export commodities and consistent with a boon factor productivity and economic alternative. Moreover, the advantage of this method also is reducing the impact of the effect of government intervention, so that the comparative advantage of a commodity over time can be seen clearly. [8]

2.3. CMS (Constant Market Share) Method

CMS approach the national export growth rate can be smaller, equal or morebigger from growth of world exports. CMS is measured in three principal variables that effect the growth of imports, commodity composition effect and the competitiveness effect. CMS method mathematically formulated as follows:

$$Xij2 - Xij1 = mXij1 + \{(mi - m)Xij1\} + \{Xij2 - Xij1 - mXij1\} \quad (2)$$

Where:
Xij1 =Export commodity I from country J to the world year t-1
Xij2 =Export commodity I from country J to the world year t
m =Growth percentage of general import in the world
mi =Growth percentage of import commodity I in the world

And

$mXij1$: Import Growth Effect
$\{(mi - m)Xij1\}$: Commodity Composition Effect
$\{Xij2 - Xij1 - mXij1\}$: Competitiveness Effect

3. Results and Discussion

3.1. Measurement of Indonesia fresh tuna competitiveness in international market

In the market competition of fresh tuna world, Indonesia has some of the countries that serve as the target product market fresh tuna Indonesia, which consists of Japan, the United States, Spain, Germany, Thailand, Vietnam, Canada, Singapore, Korea Australia and the Netherlands with 6 types of HS traded.

Table 3. Largest Export Destination Country Fresh Tuna Indonesia

Product	Country		
HS 030231	Spain	Philippine	Japan
HS 030232	Japan	America	Germany
HS 030233	Japan	Thailand	Vietnam
HS 030234	Japan	America	Canada
HS 030235	Japan	America	Singapore
HS 030236	Korea	Japan	Australia

Source [3]

From Table 3 shows the target market fresh tuna Indonesia is Japan followed by the United states and the European Union. Japan is a country's greatest importing fresh tuna. In 1990, the Japanese import of 0.25 million. Fresh tuna is imported and then process into typical foods of Japan as an example of sushi and sashimi.

Table 4. Results of RCA Value Fresh Tuna Indonesia HS 030231 - 030239

Year	RCA Value					
	HS 030231	HS 030232	HS 030233	HS 030234	HS 030235	HS 030236
2009	0.264	16.378	8.876	-	-	-
2010	0.046	14.626	0.574	8.331	-	0.009
2011	0.292	9.806	4.360	5.426	-	0.040
2012	0.041	6.414	1.980	4.018	0.450	0.036
2013	0.001	4.379	-	3.782	0.359	0.050
2014	-	4.538	-	4.756	0.251	0.042
Average	0.107	9.357	2.632	4.385	0.177	0.029

Table 4 shows that there are three fresh tuna products that have RCA values greater than 1 this indicates that the three tuna products have comparative advantage in the international market. In contrast there are three product export fresh tuna Indonesia which has a value less than 1 is considered not competitive compared to other exporting countries. The type of product that has RCA biggest HS

030232, namely Tuna, yellowfin, fresh or chilled, exclude heading to the value of 9.357 subsequent HS 030234, namely Fresh or chilled bigeye tuna "*Thunnus obesus*" with a value of 4.385 and HS 030233 Skipjack o stripe-bellid bonito, exclude head with RCA value of 2.632.

Although the product skipjack o stripe-bellied bonito, exclude RCA head has a value more than 1 or has a value that can be said to be highly competitive, but Indonesia is not able to increase its exports. It proved to Indonesia in the past two years does not export a type of skipjack tuna to Japan. From the overall commodities that have high competitiveness has export markets in Japan. Japan is the largest country that import tuna. Competing fresh tuna from Indonesia is believed to be due Indonesia and Japan have been conducting bilateral cooperation in trade.

Whereas if we compare with other countries in the European Union initially Indonesian market, but at this time have imposed some regulations such as customs duties as well as certificates of the catch of fish that make the products fresh tuna Indonesia become less energized with tuna from countries other exporters which are not subject to import duties. Of the three fresh tuna products that have the highest levels of competitiveness will be further investigated using CMS to see the effect of import growth, the effect of the composition and effects of competitiveness. This analysis uses several countries which the two major importer of tuna products on the HS 030232, HS 030233 and HS 0302034 are to see the competitiveness of these products on a competitive advantage.

3.2. The results of CMS analysis products HS 030232 (Tuna, yellowfin, fresh or chilled, exclude heading)

Table 5. The results of CMS analysis products HS 030232

Country	CMS		
	Efect 1	Efect 2	Efect 3
Japan	-14%	101%	13%
America	-475%	225%	388%

Effect 1: Import Growth; Effect 2 : Composition; Effect 3 : Competitiveness

From table 5, most effects affect the growth of export tuna Indonesia HS 030232 to the Japanese is a composition effect. This composition effect indicates that Indonesian exports to Japan are correct. Effects composition that is positive and describes the highest exports by Indonesia to Japan within five years influenced by the selection of appropriate market factors. Where the growth of Japanese imports of the product on the HS 030232 faster than imports of commodities in HS 0302.

Low factor in the estimation of the product HS 030 232 CMS is the effect of import growth. this indicates the growth of imports of other commodities the world faster than the growth of commodity imports HS 030232. Indirectly it can suppress the growth of commodity imports the HS 030 232 in the Japanese market.

The United States has the most dominant effect affecting Indonesian tuna exports to the US is the competitiveness effect with a value of 388 percent. A positive value on the competitiveness effect indicates HS 030232 has a competitive advantage. But the growth in imports from the United States feared able to suppress the growth of exports of HS 030232 Indonesia to United States. This can happen because the value of the effect of growth of imports of tuna Indonesia in America market has a negative value that is equal to -475%

3.3. The results of CMS analysis products HS 030233 (Skipjack o stripe-bellid bonito, exclude head)

CMS estimation results indicate that the competitiveness effect is the predominant effect of affecting the growth of exports of HS 030233. The high competitiveness effect indicates that Japan has a high import growth than the growth of imports of other commodities in the country by 163%. In contrast, composition effect and the effect of import growth has a negative value so presumably the two effects

can suppress the growth of Indonesian exports in the Japanese markets, respectively by -11% and -92%.HS030233 competitiveness on high also in line with the results of previous RCA analysis which shows the competitiveness of the product also has a comparative advantage.

Table 6. The results of CMS analysis products HS 030233

Country	CMS		
	Efect 1	Efect 2	Efect 3
Japan	-11%	-92%	163%
Thailand	-59%	-1%	88%

Effect 1: Import Growth; Effect 2 : Composition; Effect 3 : Competitiveness

As with Japan, the results of CMS HS 030233 Indonesia to Thailand's largest influenced by the competitiveness effect by 88%.In contrast effect suppressing growth of imports into the largest export growth amounted HS 030233 -59%.Product composition effect also suppress the growth of exports amounted to -1%. This indicates Indonesia's export growth HS030233 products in the Thai market was influenced by the growth of total imports of commodities Thailand.

3.4. The results of CMS analysis products HS 030234 (*Fresh or chilled bigeye tuna "Thunnusobesus"*)

Table 7. The results of CMS analysis products HS 030234

Country	CMS		
	Efect 1	Efect 2	Efect 3
Japan	-50%	-45%	194%
America	-10%	-26%	116%

Effect 1: Import Growth; Effect 2: Composition; Effect 3: Competitiveness

The dominant factor affecting the growth of exports to Japan 030234 HS is the competitiveness effect of 194%. The high competitive advantage of the product is also in line with the estimated value of RCA which is also higher than other tuna 6 groups. This means HS 030232 Indonesian exports to Japan in addition to having a comparative advantage also has a great competitive advantage. From table 7 is also known that the effect of product mix and the effect of suppressing the growth of export import growth of HS 030232 -45% and -50%. The lower import growth effect illustrates the low growth in total world imports, causing the growth of imports of 030232 HS also decreased.

From table 7 it is known that the competitiveness effect becomes a dominant factor in the growth of exports to the United States HS 030232 product. Values competitiveness effect reached 116%. It also indicates the growth of imports of HS 030232 higher than the United States imports more products. While the effect of product composition and the effect of import growth HS 030232 depress export, growth amounted to -26% and -10%. Effect compositions low product illustrates that the growth in imports of HS 030 232 in the United States is lower than the growth of imports of tuna products of other groups.

4. Conclusion

From the RCA results obtained three HS of tuna products that have the highest RCA value in a row is the HS 030232, namely Tuna, yellowfin, fresh or chilled, exclude subsequent heading to the value of 9.357, HS 030234 is Fresh or chilled bigeye tuna " *Thunnus obesus* "with a value of 4.385 and HS 030233 is Skipjack o stripe-bellid bonito, exclude head with RCA value of 2.632.Each of the types of

tuna fish commodity has a market share almost the same relative is Japanese. This illustrates the Japanese are the target market after the regulations in the European Union market.

The results of CMS analysis HS 030232 product (tuna, yellowfin, fresh or chilled, exclude heading) illustrates that the dominant effects affecting tuna exports to the country of Japan is a composition effect, while for the United States are affected by the effects of the competitiveness of the products. The results of CMS analysis HS 030233 product (Skipjack o stripe-bellied bonito, exclude head) illustrates that the dominant effects affecting Indonesian tuna exports to Japan is the competitiveness effect is like Indonesian tuna exports to Thailand are Also influenced by the competitiveness effect. The results of CMS analysis HS 030234 product (Fresh or chilled bigeye tuna "*Thunnus obesus*") illustrates that the dominant effects affecting Indonesian tuna exports to Japan is the competitiveness effect, as does the United States.

References

[1] BPS-Statistic Indonesia 2014 *Produk Domestik Bruto (PDB) Indonesia Tahun 2013 [Indonesia's Gross Domestic Product (GDP) in 2013]* (Jakarta,Indonesia : BPS-Statistic Indonesia)
[2] Apsari W 2011 *Analisis Permintaan Ekspor Ikan Tuna Segar Indonesia di Pasar Internasional [Export Demand Analysis of Indonesian Tunas in International Market]* [Thesis] (Bogor,Indonesia: Institut Pertanian Bogor)
[3] International Trade Center 2016 *Trade Map* avaible at https://www.trademap.org/Index.aspx
[4] Porter M E 1990 *The Competitive Advantage of Nation.* (London: The Macmillan Press Ltd.)
[5] Dominick S 1997 *Ekonomi Internasional [International Economy] 5th edition* translator H Munandar (Jakarta,Indonesia: Erlangga)
[6] Bustami B R and Hidayat P 2013 Analisis daya saing produk ekspor Provinsi Sumatera Utara [Analysis of the competitiveness of export products in North Sumatra Province] *Jurnal Ekonomi dan Keuangan.***1** 2 pp 56-71
[7] Nayantakaningtyas J S and Daryanto H K 2012 Daya saing dan strartegi pengembangan minyak sawit di Indonesia [Competitiveness and strategy for developing palm oil in Indonesia] *Jurnal Manajemen dan Agribisnis* **9** 3 pp 194-201
[8] Rifin A 2010 Export competitiveness of Indonesia's palm oil product *Trends in Agriculture Economics* **3** pp 1-18