ANALYSIS OF COMPETITIVENESS ON INDONESIAN TUNA EXPORT COMMODITIES IN JAPAN AND USA

[1]MUHAMMAD YUSUF, [2]YANI MAGFIROH, [3]IIS ISTIQOMAH, [4]AGUS SUYANTO

Department of Food Technology, University of Muhammadiyah Semarang

Abstract - Indonesia, as an archipelagic country, had many fishery resources. After shrimps, tuna was one of fishery resources that became the main export commodity. In the world's fishery market, Indonesia became one of major exporting countries especially in Japan and USA. Tuna, as the second fishery export commodity, had contributed considerable foreign exchange for Indonesia. This study aimed to find out how Indonesia's competitiveness to tuna export commodities in 2009-2015 and to improve the strategies for strengthening the competitiveness of Indonesian tuna in international markets, especially in Japan and USA. The analysis technique used was the index of Revealed Comparative Advantage (RCA) using time series data from 2009-2015 and also the Porter diamond method. Based on the calculation of RCA index, it obtained RCA> 1, it could be said that Indonesia had the competitiveness in the international market. However, the competitiveness of national tuna should always be improved in order to be able to compete in the international market. It was needed the good cooperation between the government as stakeholders and the company as a producer. Therefore, it was expected that with the increasing competitiveness of fishery commodities, especially tuna, the Indonesian economy would become more advanced and prospering the people.

Keywords - Tuna fish, competitiveness, RCA, Diamond Porter method, strategy.

I. INTRODUCTION

Indonesia is a maritime country with many strategic islands and it has a vast sea area of about 5.8 million km^2. This certainly stores abundant marine resources, such as fishery products and coral reefs. The potential for sustainable fish resources or Maximum Sustainable Yield (MSY) in Indonesian marine waters is 6.5 million tons per year, with an allowable catch of 5.2 million tons/year (80% of MSY) (KKP, 2011). Fisheries itself is one of the subsectors that plays a role in the national economy. This sub-sector encourages the growth of agro-industry through the provision of raw materials, increasing the country's foreign exchange through export of fishery products, providing jobs, increasing farmer's income and contributing to the increase of gross domestic product (GDP) (KKP, 2013).

Based on FAO data (2014) in 2012, Indonesia was placed in the 2nd rank for capture fisheries production and 4th rank for aquaculture production in the world. This fact can give an idea that the potential of Indonesian fishery is very big, so if it is well managed and responsible for its activities can be sustainable, it can be as one of the main source of development capital in the present and future. Tuna is one of fishery commodities that has a good export value in the traditional market. In addition, tuna is the largest production of capture fisheries in Indonesia after shrimp. The largest tuna markets in the world are Japan, USA, and EU. Tuna export to Japan amounted to 27 percent, and to USA is 17 percent while to the European Union is also quite large volume and value of 12 percent (FAO, 2006). This study aims to analyze the competitiveness of tuna commodity exports in Japan and USA conducted in the period of 2009-2015. This is because Japan and USA become the first and second country's export destinations of shrimps in Indonesia. Because the majority of people are very fond of seafood, so that the demand for Indonesian shrimp exports continues to increase in the international market, particularly in Japan and USA.

II. THE CONCEPT OF COMPETITIVENESS

According to Robiani in Novalia (2005: 109), competitiveness is determined by the productivity of a country in the use of natural resources, human and capital. Basically, competitiveness is needed to improve the standards and quality of life as well as to improve the existence of the economy to be more market oriented. Meanwhile, according to Porter (2000), the concept of competitiveness is generally associated with the ability of a village, city, region, country or company in improving sustainable competitive advantage.

A broader sense of competitiveness is put forward by the World Economic Forum (WEF) that defines competitiveness as the ability of the national economy to achieve high and sustainable economic growth. Another definition is put forward by the Institute of Management Development (IMD) that defines national competitiveness as a country's ability to create added value in order to increase national wealth by managing assets and processes, attractiveness and aggressiveness, globality, and proximity, and by integrating the relations to the economic and social model (Bappenas, 2005: II- 8). There are a number of indicators or methods used to measure the level of competitiveness, including Revealed Comparative Advantage (RCA) Index of

Trade Specializations (ISPs) and Acceleration Ratio (RA). In this research, the export competitiveness analysis used is Revealed Comparative Advantage (RCA) and Diamond Porter method.

III. RESEARCH METHODS

Revealed Comparative Advantage (RCA)

The research design used in this study was quantitative in the form of associative. This research used competitiveness analysis of Revealed Comparative Advantage (RCA) to know the competitiveness of tuna commodity to tuna export of Indonesia in 2009-2015 with export destination countries of Japan and USA. The data would be processed and analyzed based on the existing theories to be able to draw the conclusions later. Cai et al (2007) conducted research on certain agricultural products in Hawaii. This research used Revealed Comparative Advantage (RCA) approach to reveal the level of comparative advantage and competitiveness of some agricultural products. Revealed Comparative Advantage (RCA) was a technique to determine the comparative competitiveness of a region (country, province, and others). Basically, the technique measured the export performance of a commodity used to compare the share of a commodity traded with total exports in a region (Tumengkol et al., 2015). RCA calculations can be described as follows:

$$RCA = \frac{Pt/Qt}{Rt/St}$$

Explanation:

Pt = Value of Indonesian tuna export commodity to Japan/USA year t

Qt = The total value of Indonesian non-oil commodity exports year t

Rt = Value of Indonesian tuna export commodity year t

St = The total value of non-oil commodity exports in Indonesia year t

If the value of a country's RCA index for a particular commodity was greater than one (1), then the country had a comparative advantage over the world average for that commodity. If it was smaller than one (1), the comparative advantage of a country for the commodity was low. The greater the value of the RCA index of a commodity, the higher the level of comparative advantage.

Diamond Porter Method

The Model Competitiveness Diamond (Porter, 1990), says that the industry in a superior region is not of its own accord but a group's success with the inter-linkages between companies and supporting institutions. In the industrial cluster, the companies involved are not only large and medium-sized companies, but also small companies. So it takes good cooperation between each part in the company or agency. Porter (1990) introduces the theory of competitive ability of a country described in the diamond model as seen in the figure below.

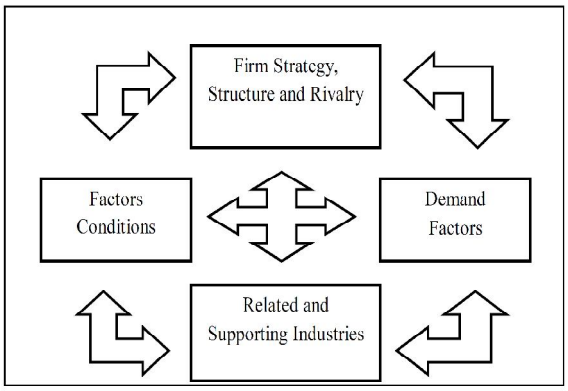


Figure 1. Diamond Porter Model (Porter,1990)

Research Data

The data used in this research was secondary data. Secondary data was the data originating from other parties who had collected the previous data. The data was in the form of export value of tuna commodity of Indonesia, data of fishery product, and commodity price of Indonesian tuna. As the data collection method, the researchers used non-behavioral observation method, it was the method derived from literatures and journals obtained from the various sources or related agencies namely FAO, Central Bureau Statistics (BPS), and Ministry of Marine Affairs and Fisheries.

IV. RESULTS AND DISCUSSION

Revealed Comparative Advantage (RCA)

The Revealed Comparative Advantage (RCA) Index was used to determine the competitiveness of Indonesian tuna commodity exports in Japan and USA destinations. To be able to know the result from RCA, therefore it was required the value data of export commodity of tuna and non oil and gas in Indonesia.

Value	Negara Tujuan		
(Million US$)	Japan	USA	All countries
2009	85.395,9	24.137,0	162.127,5
2010	115.440,6	23.490,8	197.052,4
2011	118.234,8	25.584,6	219.440,3
2012	111.055,7	42.019,6	299.888,0
2013	106.763,2	33.012,1	276.607,2
2014	74.763,1	17.541,5	210.341,5
2015	57.237,5	12.174,1	148.355,8
Total	668.890,8	177.959,7	

Table 1. The value of export commodities of tuna by country of destination, 2009-2015
Source: Central Bureau of Statistics (BPS), 2017

Year	Value of non-oil commodities
2009	97.491,70
2010	129.739,50
2011	162.019,60
2012	153.043
2013	149.918,76
2014	145.961,20
2015	131.791,90
Total	970.025,66

Table 2. The value of non-oil commodities Indonesia, 2009-2015
Source: BPS, 2017

After obtaining the data on the value of export commodities of tuna and non oil and gas in Indonesia, then it was analyzed using RCA. The results that would be obtained in this study would later be used as a reference to determine whether the tuna commodity could be used as Indonesia's flagship export commodity in the destination countries of Japan and USA. Based on the calculation, it could be seen that the results of the RCA index were as follows:

Year	RCA Index of Tuna
2009	2,20
2010	2,26
2011	1,55
2012	2,54
2013	3,70
2014	1,61
2015	1,76

Table 3. Result of RCA index of tuna commodity with Japan destination country
Source: research results

Year	RCA Index of Tuna
2009	2,30
2010	2,74
2011	2,69
2012	2,26
2013	1,53
2014	1,83
2015	1,50

Table 4. Result of RCA index of tuna commodity with USA destination country
Source: research results

The RCA index calculation in Table 3 and Table 4 showed that the Indonesian RCA index for tuna commodity in 2009-2015 was always more than one value (ranging from 1.62 to 2.81). It showed that Indonesia had the superior to fresh tuna commodity in Japan and USA.

The Indonesian RCA Index had strengths for tuna fish commodity. But, of course the increase in export value of tuna must be increased both internally and externally. The internal efforts that should be done were (1) improving the quality of fish, especially from diseases and various issues about food safety which became obstacles in tuna trade in the international market and (2) the application of better technology in the fish processing. The extensive efforts that should be done were by (1) expanding the international cooperation network by doing export business to other countries besides the country which became the main export destination and (2) following the organization related to tuna trade in the international market to conduct the easier international trade.

Analysis of Export Competitiveness of Indonesian Tuna with Component of Diamond Porter Model.

At the stage of Diamond Porter model, the researchers determined the dimensions used to measure the competitiveness of Indonesian tuna commodities in the destination countries of Japan and USA. Dimensions measured in the Diamond Porter model included the factors of condition, demand, related industry and support, corporate strategy and competition, government and opportunities which was the most influential for the development and growth.

A. Condition Factor

Factors that affected the competitiveness of Indonesian tuna exports in Japan and USA destination countries were more pointed at resources. The first factor was natural resources, where Indonesia as an archipelagic country and an adequate sea area hence abundance of marine and fishery wealth. Therefore, it was able to increase the productivity of tuna export results in the international markets. Furthermore, human resources in general, the labor used in the production of tuna were derived from the workforce of a company that produced tuna fish products. The resources that were not less important were the resources of science and technology (IPTEK). It was because besides to increase the amount of productivity, technology was expected to disseminate the information needed for the perpetrators and consumers of the product.

B. Conditions of Demand

The demand for animal protein in some countries had started to increase, especially in the developed countries such as Japan and the United States. This

was evidenced over the past 25 years, they had a positive average growth with an average growth rate of 6.03 percent and 11.79 percent for the growth rate (FAO, 2006).

C. Related and Supporting Industries

Related industries and supporting industries had an important role in increasing the value of export competitiveness of Indonesian tuna in Japan and USA market. In tuna export related industries, it was the industry of supplying raw materials while in the supporting industries had a role in the development of products such as product packaging and processed derivatives of tuna.

D. Structure, Competition and Strategy

The existence of competition from both domestic and foreign companies could be a driving force in providing inter-company pressure to compete and innovate in order to improve the competitiveness. In addition, the structure of the company as well as the industrial structure determined the competitiveness by making improvements and product innovations.

E. The Role of Government

The government acted as a facilitator for companies and industries to constantly improve their competitiveness through policies that weakened or strengthened the determinants of industrial competitiveness. The role of government in improving competitiveness was to facilitate tuna industry environment that could improve the condition of competitiveness factor, so that it could be utilized effectively and efficiently.

F. The Role of Opportunity

The role of opportunity was beyond the control of the company or government, but still affected the level of competitiveness. Some of the roles of opportunity in export companies were pure new inventions, undisturbed company costs due to changes in oil prices or currency depreciation. In addition, the increase in demand for industrial products which were greater than the supply was a favorable condition for improving competitiveness.

Therefore, the strategy that could be used to improve the competitiveness of tuna export could be done by several methods that were by improving the quality of tuna produced, it could be done by giving the socialization of fish quality for the purpose of export to all parties in the fishery industry should be done by local government officials. It could also be done by improving the human resources quality control institutions established by the government to carry out fish quality checks. The second strategy that could be used was to cooperate with foreign parties and to make the improvements to the company's fisheries management. Improving facilities and infrastructures that supported national tuna and improving national economic conditions that support national tuna commodities were also able to improve the competitiveness of tuna export in destination countries.

CONCLUSION

Based on the results of RCA index and analysis of Diamond Porter model, it showed that for Indonesian tuna commodities both export destination countries Japan and the USA, they had competitiveness with the value of more than one index. However, it was still necessary to improve the competitiveness of Indonesian tuna by means of Indonesian tuna processing companies must be active in obtaining and utilizing the latest market information and following the trend of product trend. The second method that could be used was to conduct research and development of cultivation techniques, post-harvest technology, and marketing activities needed to be done to obtain products that had high added value. The government should also provided support by making improvements related to the many problems that occurred in all resource factors and reviewed some policies related to fisheries in Indonesia.

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