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Analysis of Indonesian Shrimp Competition in the World Market Study Case: Thailand, Vietnam, India and China

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Abstract: *Shrimp is one of the leading fisheries commodities in Indonesia which is oriented towards international markets with export destinations to some countries. shrimp make a positive contribution to the economy because it generates foreign exchange for the State. This study aims to (1) analyze the percentage growth of the Indonesian shrimp trade in the international market and (2) analyzing the position of competitiveness of Indonesian shrimp in international comparative advantage. This research using time series data in secondary form starting in 1998 until 2017. Data were analyzed using constant market share analysis (CMSA) analyze the percentage growth in Indonesia's shrimp trade in the international market, while to analyze the competitiveness of Indonesian shrimp is the Revealed Comparative Advantage (RCA) comparative advantage approach. The results showed that the factors were significantly affect the growth of the Indonesian shrimp trade viz international shrimp prices, rupiah exchange rates against the dollar and export volume. (1) The growth of Indonesia's shrimp trade can be seen from 1998-2017 with a average percentage of trade growth of 1.5% (2) Based on competitiveness analysis, through Revealed Comparative analysis Advantage (RCA) shows that shrimp export competitiveness Indonesia in the international market has a comparative advantage seen from in 1998-2017 with an average value of RCA> 1 which was 1.04.*

Keywords: *Shrimp, Competition, Revealed Comparative Advantage (RCA), Constant Market Share (CMS).*

1. INTRODUCTION

Indonesia is an agricultural country with various sub-sectors owned. One of them is the fisheries sector which has the highest potential in driving the national economy. Indonesia has ± 75% water area of the total area of Indonesia. Indonesia is often referred to as a maritime country and archipelago state. The number of islands in Indonesia from Sabang until Merauke is 17,504 islands. Indonesia has a total area of sea waters 5.8 million km², consisting of 2.8 km² of archipelago waters, the total area of waters territorial 0.3 km², and the total area of waters of the Exclusive Economic Zone (EEZ) is 2.7 km² which is inhabited by various marine biota and various types of fish. Total area existing waters in Indonesia, making Indonesia has a potential source marine power and marine fisheries resources reach 6.2 million tons per year. (Kusumastanto, 2007).

The total area of Indonesia's marine waters reaches 5.8 million km² encourage the development of the marine and fisheries sector in Indonesia. Indonesia's vast territorial waters make Indonesia have abundant marine wealth. The abundance of Indonesia's marine wealth is very encouraging Indonesia to drive the economy in the world with results

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sea is the product. A country's economy will not be separated from it International trade activities, whether capital inflows or their nature from one country to another. International trade is increasing the occurrence of export and import activities, resulting in the movement of factors production from the exporting country to the importing country caused by price differences. (Salvatore, 2007).

The export of fisheries commodities is based on two main types of commodities namely shrimp and marine fish groups such as tuna, cangkalang and cob. Commodity shrimp is one of Indonesia's most preferred commodities because it has a high nutritional content, high economic value and has market opportunities both at home and abroad. There are various types shrimp produced in Indonesian waters. Shrimp are widely produced to be exported are generally vannamei shrimp and tiger shrimp. Both types The shrimp is produced through shrimp farming in scattered ponds several regions in Indonesia such as West Java, East Java, Central Java, Banten, Lampung, East Kalimantan, NTB, Riau, Aceh and South Sulawesi (Rachmatawan, 2009). Shrimp commodity plays a role in increasing the subsector fisheries, because it has a contribution of 60 percent of the total export value fisheries subsector. The government places the shrimp commodity as one of the six prime export commodities of Indonesia and one of the commodities in fisheries revitalization. Shrimp production during 2008-2017 experienced an increase with an average value of 20.36 percent or 812780958.50 tons per year. The development of Indonesian shrimp production in 2008-2017 can be seen in Table 1.

Table 1. Development of Indonesian Shrimp Production in 2008-2017.

	Commodity Trade and Production: Quantity (ton)				
Year	Indonesia	China	India	Thailand	Vietnam
2008	115402	52052	120866	190204	675450
2009	99857	127875	126769	205798	752487
2010	99394	142155	171353	237438	902093
2011	108744	159404	256853	191320	988810
2012	110080	137616	271835	167680	867120
2013	113248	139047	248724	87402	842100
2014	134387	134063	341139	71325	992926
2015	132897	99057	370920	68589	912298
2016	137143	101034	414067	101012	977415
2017	144137	97348	543315	96305	1154002

Source : Food and Agriculture Organization, 2019

2. RESEARCH METHODS

The type of data used by the author in this study is data secondary in the form of time series for 20 years, starting from 1998 - 2017. Secondary data were obtained from the Central Statistics Agency, the Department of Maritime Affairs and Fisheries, World Bank, UN Comtrade, Ministry of Fisheries and Maritime Affairs, literature, and sites related to research. Data analysis used in this research is the method Revealed Comparative Advantage (RCA) and Constant Market Share CMS.

a. Revealed Comparative Advantage (RCA)

Revealed Comparative Advantage (RCA) Competitiveness Analysis. To find out the competitiveness of shrimp commodities in Indonesia This research used Revealed Comparative Advantage (RCA) analysis. The RCA (Revealed Comparative Advantage) method is based on a concept that trade between regions actually shows excellence comparative owned by a region. The variable measured is performance export of a product / commodity to total exports of a later region compared to the share of product value in world trade. RCA is defined that if the share of Indonesian shrimp commodity exports is at the total commodity exports of a country are greater than the share Shrimp commodity export market in total world commodity exports, is expected the country has a comparative advantage in production and export shrimp commodity. If the RCA value is greater than one, then that country has a comparative advantage (above the world average) for shrimp commodities in this study it means that the commodity (Indonesian shrimp commodity) strong competitiveness. Conversely, if the RCA value is smaller than one it means comparative advantage for low shrimp commodities (below the world average) or weak competitiveness.

using a formula RCA : $RCA_{ij} = \frac{X_{ij}}{W_i} / \frac{X_{is}}{W_t}$

RCA_{ij} = Indonesia's comparative advantage (competitiveness) year t

X_{ij} = The value of Indonesian shrimp commodity exports year t

X_{is} = The value of exports of all Indonesian commodities year t

W_i = The value of shrimp exports in the world year t

W_t = The value of exports of all world commodities year t

t = 1998,…….…..,2017

There are two possible competitiveness of a commodity, namely:

1. If the RCA value is> 1, it means that a country has a comparative advantage above the world average so that the commodity has high competitiveness.
2. If the RCA value <1, means that a country has a comparative advantage below the world average so that a commodity has competitiveness weak.

b. Constant Market Share Analysis (CMS)

Constant Market Share (CMS) is a practical approach to measure the level of dynamics of the competitiveness of an industry in a particular country. CMS can compare growth a country's exports relative to standard growth (world averages) and also describe the decomposition of export growth into several components, namely: effects export commodities, import growth, and competitiveness. The demand side of the variables are measured is divided into the effects of macro parts or macro share effects (which is growth import or import growth) and micro share or micro share (which is the composition effect from commodity or composition effect of commodity), where the supply side explains the effect of competitiveness or the effect of competitiveness). The CMS formula can be written as follows:

$$X_{ij}^{2} - X_{ij}^{1} = mX_{ij}^{1} + \{(m_i - m\ )X_{ij}^{1}\} + \{X_{ij}^{2} - X_{ij}^{1} - m_i X_{ij}^{1}\}$$

(1) (2) (3)

Where : X_{ij}^{1} = exports from commodity i to country j in period t-1

X_{ij}^{2} = exports from commodity i to country j in period t

m = percentage change of all commodities exports to country j

m_i = percentage change in exports of commodities in the country j

1) = Effect of import growth; (2) = composition effect; (3) = Competitiveness effect

3. RESULT AND DISCUSSION

Revealed Comparative Advantage

Analysis of the competitiveness of Indonesian shrimp commodity exports at world markets use the Revealed Comparative Advantage (RCA) approach. That The RCA index is an indicator that shows changes in comparative advantage changes in the level of industrial competitiveness of a country in the global market. This index can also be used to compare Indonesia's competitiveness with others shrimp commodity producing countries. To get an RCA value, you must know at promote the export value of shrimp commodities for each shrimp commodity and the world exporting countries and total commodity exports of all exported commodities by shrimp commodity exporting countries

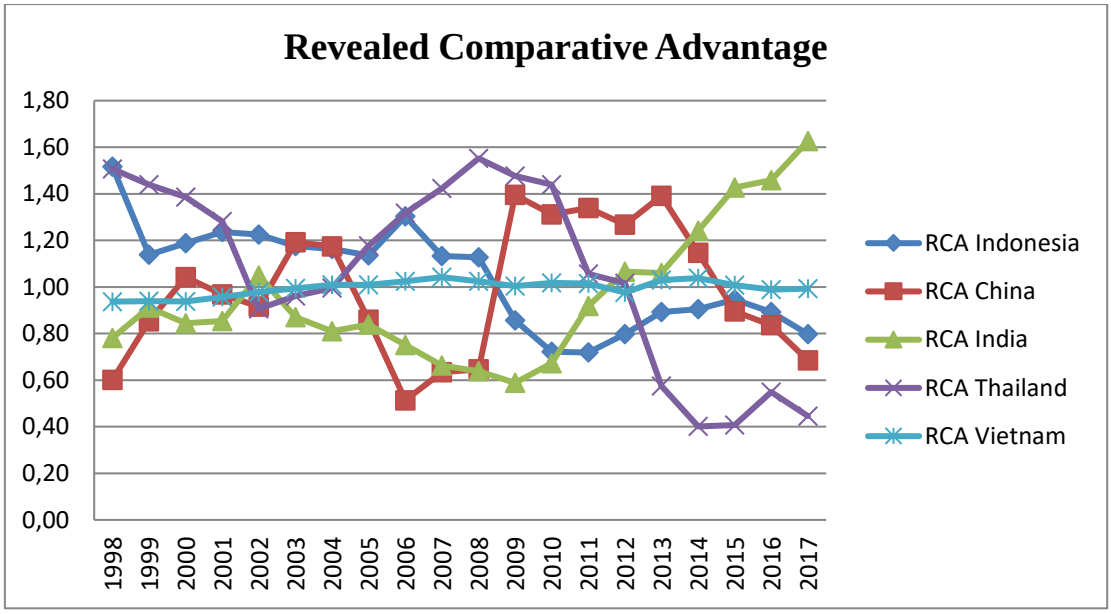
and the world. Then the comparison value between the export value of natural rubber and the total export value exporting countries divided by the ratio of the export value of shrimp and commodities total value of world exports.

Table 2. RCA values of 5 of the world's largest exporting countries in 1998-2017

	Revealed Comparative Advantage (RCA)				
Years	Indonesia	China	India	Thailand	Vietnam
1998	1.52	0.60	0.78	1.51	0.94
1999	1.14	0.85	0.91	1.44	0.94
2000	1.19	1.04	0.84	1.39	0.94
2001	1.24	0.97	0.85	1.28	0.96
2002	1.23	0.92	1.05	0.91	0.98
2003	1.18	1.19	0.87	0.96	0.99
2004	1.16	1.17	0.81	1.00	1.01
2005	1.14	0.86	0.84	1.18	1.01
2006	1.30	0.51	0.75	1.32	1.02
2007	1.13	0.63	0.66	1.42	1.04
2008	1.13	0.65	0.64	1.55	1.02
2009	0.86	1.40	0.59	1.48	1.00
2010	0.72	1.31	0.67	1.44	1.02
2011	0.72	1.34	0.92	1.06	1.02
2012	0.80	1.27	1.07	1.02	0.98
2013	0.89	1.39	1.06	0.58	1.03
2014	0.90	1.15	1.24	0.40	1.04
2015	0.95	0.90	1.43	0.41	1.01
2016	0.89	0.84	1.46	0.55	0.99
2017	0.80	0.69	1.63	0.45	0.99

Source: processed from FAO, 2019.

Based on table 2 shows that the Indonesian RCA value has an average more than 1 value of shrimp exports on the world market. RCA value ranged from 0.7 to 1.5 during 1998-2017. Highest scores in 1998 and declined in 2011. Based on the calculation results, the RCA value was found Indonesia in 1998-2017, as one of the largest shrimp producers in the world equal to 1.04. These results are consistent with research conducted by Mufa'ah (2016) Analysis of Export Competitivness of Indonesian Shrimp Commodities This number is worth more than one, meaning Indonesia has a comparative advantage compared to shrimp. Indonesia must continue maintain and enlarge its comparative advantage. Indonesia is ranked second for the value of shrimp exports internationally the market after Thailand and Vietnam ranks third. The average value of Chinese and Indian RCA in 1998-2017 did not achieve one, so the two countries did not have a comparative advantage.



Picture 1. Revealed Comparative Advantage

Source: processed from FAO, 2019.

While Indonesia, Thailand and Vietnam have an average RCA value of more than one, namely 1.04, 1.1, and 1, which means that the countries of the three countries have a comparative competitiveness.

Constant Market Share Analysis

Constant Market Share Analysis (CMS) is a method for analyzing trade patterns as well as trade trends which are then developed for the purpose economic policy formulation. CMS analysis is used based on understanding that a country's export growth rate can be lower or higher than the rate of growth in world exports. A country's export growth can be described in three effects, namely the effect of commodity composition, market distribution and effects Competitiveness Analysis competitiveness effect.

Tabel 4 . Growth of Indonesian Shrimp Exports in International Markets in 1998-2017

Components	1998 - 2007	2008 - 2017
Standard export growth	-0.38	-0.32
Country export growth	10.84	7.68
Commodity composition effect	-4.062	6.23
Securities market distribution	-0.996	-4.062
Competitiveness effect	1.02	1.01

Source: processed from FAO, 2019

Shrimp export growth in 2008 - 2017 increased by -0.6 as well as country export growth decreased by 3.16 points for commodity composition effect increased by 2.2, followed by market distribution increased by -5.058, while the competitiveness effect decreased by 0.1

4. CONCLUSION

The conclusion that can be drawn is the Indonesian shrimp export RCA index fluctuated from 1998 to 2017 with an average value of 1.04, this proves that Indonesia has a comparative advantage in shrimp export commodities in international trade and Thailand and Vietnam each have values> 1, Thailand ranks first at 1.1 and Vietnam ranks third with 1 While China and India have no comparative advantage due to the low average RCA value <1. CMS analysis conducted in this study proves that the effect of competitiveness has the strongest influence on growth. Indonesian shrimp exports. But the effect of the composition of the results the commodity in the Indonesian shrimp CMS analysis found that the shrimp commodity was less favored because of inconsistencies in the quality of shrimp exported by Indonesia.

REFERENCES

Ashari, U., Sahara, & Hartoyo, S. (2016). Daya saing udang segar dan udang beku Indonesia di negara tujuan ekspor utama. *Jurnal Manajemen & Agribisnis, 13*(1), 1–12. Institut Pertanian Bogor.

Badan Pusat Statistik. (2009). *Statistical yearbook of 2009*. Jakarta.

Departemen Kelautan dan Perikanan. (2008). *Data potensi produksi dan ekspor/impor kelautan dan perikanan 2007*. Jakarta.

Departemen Perdagangan, Direktorat Ekspor Produk Pertanian dan Kehutanan, & Direktorat Jenderal Perdagangan Luar Negeri. (2006). *Profil komoditi ekspor udang Indonesia*. Jakarta.

Departemen Perdagangan, Tim 10 + 10 + 3. (2009). *Program peningkatan ekspor produk udang Indonesia*. Jakarta.

Departemen Pertanian, Pusat Data dan Informasi Dirjen Budidaya Perikanan. (2009). *Data perkembangan ekspor hasil perikanan menurut komoditas utama 1988-2007*. Jakarta.

Food and Agricultural Organization. (2019). *Forest product definition*. http://faostat.fao.org/

Food and Agricultural Organization. (2019). *Forest statistic* [Internet]. Retrieved November 5, 2019, from http://faostat.fao.org/

United Nations Commodity Trade. (2013). *United Nations commodity trade statistic database* [Internet]. Retrieved November 8, 2019, from www.uncomtrade.org

World Economic Forum. (2012). *The global competitiveness report 2011-2012* [Internet]. Retrieved November 7, 2019, from www.weforum.org/issues/global-competition