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Analysis of Indonesian and Malaysian Pepper Export Competitiveness in the International Market

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Abstract

Indonesia is an agricultural developing country that has abundant natural wealth. Various types of plants can thrive in Indonesia, including food crops, plantations, including spices. Indonesian spice production has been recognized and is well known abroad. Pepper plantations in Indonesia are divided into two types, namely community plantations (PR) and large private plantations. Globalization of trade requires Indonesia to be able to increase the competency of its pepper products so that it can compete in the world. This research method uses a quantitative research method. The type of data in this research uses secondary data, namely data obtained from a research library where the data obtained is in the form of data. The analytical methods used in this research are descriptive methods and quantitative methods. The descriptive method is used to create a picture of the development of pepper exports from Indonesia and its competitor countries, namely Malaysia, while the quantitative method, where data is obtained in the form of numbers and analyzed using statistical and econometric methods, is used to analyze the competitiveness of comparative advantage and competitive advantage. Indonesia has a higher average ISP value and is declared a pepper exporter. Malaysia is still behind in the specialist pepper trade with Indonesia. The development of Indonesian pepper exports is better than Malaysia, in terms of the value of pepper exports to international markets.

Keywords

Export, Pepper, International Market, Indonesia, Malaysia.

1. Introduction

Indonesia is an agricultural developing country that has abundant natural wealth. Various types of plants can thrive in Indonesia, including food crops, plantations, including spices. Indonesian spice production has been recognized and is well known abroad. One of Indonesia's leading spice products is pepper. Pepper has become a spice known throughout the world, pepper is also called the king of spices. Because pepper has a unique taste and cannot be replaced with other spices. Since ancient times, Indonesia has been known as a pepper producer in the world. There are two types of pepper that are best known in Indonesia, namely black pepper which is produced in the Lampung area and white pepper which is produced in the Bangka Belitung area. These two types of pepper are the standard for world pepper trade (Agriculture, 2009).

One of the leading export products in Indonesia is pepper, which occupies an important position along with palm oil, cocoa, coffee, rubber and coconut. It is a dominant export product. During the period 2013 to 2017, Indonesian pepper production experienced fluctuations with a downward trend. The largest production achievement occurred in 2015 reaching 94,932 tons. Pepper area is also experiencing a decreasing trend. In 2010 the land area was 171,900 ha, decreasing to 167,626 ha in 2017. The decline in production is one factor that needs to be paid attention to, because it can affect the competitiveness of Indonesian pepper (Wadley & Mertz, 2005; Karmawati et al., 2020).

Pepper plantations in Indonesia are divided into two types, namely community plantations (PR) and large private plantations (Asmu'i & Akbar, 2016). Globalization of trade requires Indonesia to be able to increase the competence of pepper products in order to compete in the world (Durand & Fournier, 2017; Komariyati et al., 2022). Competitiveness plays a key role in displacing weak countries and benefiting strong countries. To increase competitiveness, it is necessary to know the factors that influence competitiveness itself (Carneiro, 200). Indonesia and Malaysia's pepper exports are the 5th largest in the world. Of the countries in the ASEAN region, Malaysia is a pepper exporter which is Indonesia's biggest competitor. Each country has comparative and competitive strengths. Malaysia is included in the top 5 pepper exporting countries in the international market which should be considered as a competitor in the ASEAN region.

This research aims to investigate the development of Indonesian and Malaysian pepper exports on the international market during the 2007-2017 period and analyze their competitiveness. The focus of the research involves an in-depth understanding of the dynamics of growth in pepper exports from both countries over the specified time. Competitiveness analysis is a key aspect, enabling an understanding of the relative positions of Indonesia and Malaysia in the international pepper market competition. By detailing the development and competitiveness of pepper exports over the past ten years, this research is expected to provide valuable insight into the factors that influence the performance of pepper exports in both countries on the international market.

2. Literature Review

Competitiveness is the ability of a commodity to compete in foreign markets or the ability to survive in the domestic market and compete with commodities from abroad. If a product has

competitiveness, the product is more popular with many consumers. Competitiveness is the ability of a producer to produce a commodity at a low enough cost so that at the prices prevailing in the international market the production activity is profitable. In an open economy, the competitiveness of a commodity is defined as the ability of the commodity business with the aim of remaining financially viable under tradable input and output prices in line with the import price (Moses, 1955; Bas & Strauss-Kahn, 2015).

The competitiveness of a commodity can be measured using two approaches, namely the level of profit generated and farming efficiency. The level of profit generated can be seen from two sides, namely private profit and social profit (Defourny & Nyssens, 2010). Meanwhile, competitiveness can be seen from two indicators, namely competitive advantage and comparative advantage (Widodo, 2009). Competitiveness can be measured in two ways, namely by comparative advantage and competitive advantage. Competitive advantage is a country's superiority in producing and selling products in international markets which is not only influenced by the abundance of production factors which form the basis of advantage but is also influenced by infrastructure, institutions, transportation, human resources, political support, natural resources, etc. The calculation method used to calculate competitive advantage is the Export Competitiveness Index (ECI). This method shows the ratio of a country's export share in the international market for a particular commodity in a certain period (t) to the ratio of the international market share for that commodity in the previous period (t-1).

To see the tendency of a country to become an exporting or importing country and to find out the competitive position of a country towards certain commodities according to the product life cycle, it can be determined using the Trade Specialization Index (ISP) value. This method is a general method used as a tool to measure the level of competitiveness. The competitive position is divided into five stages, in accordance with product cycle theory, namely as follows (Hiratsuka, 2003):

(1) Introduction stage
When an industry (forerunner) in a country (A) exports new products and a latecomer industry in country B imports these products. In this stage, the ISP index value of the latercomer industry is -1.00.

(2) Import substitution stage
At this stage, industry in country B shows very low competitiveness, because the level of production is not high enough to achieve economies of scale. The industry exports products of poor quality and domestic production is still smaller than domestic demand. In other words, for this commodity, at this stage country B imports more than it exports. The ISP index value increases between -1.00 to 0.00.

(3) Export stage
At this stage, industry in country B carries out production on a large scale and begins to increase its exports. In the domestic market, supply for these commodities is greater than demand. The ISP index value increases between 0.00 and 1.00.

(4) Stage of maturity
At this stage the product is already at the standardization stage regarding the technology it contains. At this stage, country B is a net exporter country. The index value is in the range of 1.00 to 0.00.

(5) Re-import stage
At this stage, industry in country B is unable to compete in its domestic market with industry from country A and domestic production is less than domestic demand.

Analysis of the Competitiveness of Indonesian Tea in the International Market (Samudera et al., 2017; Zuhdi et al., 2022). Brawijaya University, Department of Agricultural Socioeconomics. This research discusses the competitiveness of Indonesian tea against world tea by analyzing comparative advantage and competitive advantage. The method used in this research is RCA to determine the level of competitiveness of Indonesian cocoa, ISP to determine whether Indonesia is in the exporter or importer category and the Herfindal index and Concentration Ratio to analyze market structure. The results of the research show that the RCA value of tea commodities is > 1, Indonesian tea tends to be an exporter and the structure of the international tea market has medium concentration and has an oligopoly type of market.

Marlinda (2008) conducted research entitled Analysis of the Competitiveness of Indonesian Pepper in the International Market. The type of data used is secondary data, aimed at analyzing the market structure formed using the Herfindahl Index (HI) and Concentration Ratio (CR) analysis tools, then analyzing competitiveness using Revealed Comparative Advantage (RCA) analysis to see the status of comparative advantage and Porter's Diamond Theory to see the competitive advantage status of pepper exporting countries. The results shown in Barirah Marlinda's research are that the market structure formed in the international pepper trade is a market form with a moderate level of market concentration. The comparative advantage of Indonesia is that it is shown by the RCA value being greater than. Competitive advantage shows that Indonesia has advantages in natural resource factors (Prabowo et al., 2021; Novitasari et al., 2021).

Analysis of the Competitiveness of Indonesian Natural Rubber Exports in International Markets (Daulikaet al., 2020; Zuhdi, 2021). aims to analyze the market structure formed using the Herfindahl Index (HI) and Concentration Ratio (CR) analysis tools, then analyze competitiveness using Revealed Comparative Advantage (RCA) analysis to see the status of comparative advantage and Export Competitiveness (ECI) to see the status competitive advantage of natural rubber exporting countries. The results shown in Ratnawati's research are that the market structure formed in international rubber trade is an oligopoly market which is controlled by three exporting countries, namely Thailand, Indonesia and Malaysia. The main exporting country has an advantage because the RCA value is greater than 1. Competitive advantage shows that only Indonesia is able to compete because the ECI value is greater than 1. Based on the problem formulation and previous research that has been discussed previously, the hypothesis is proposed in the research. It is suspected that there are real differences in the development of Indonesian and Malaysian pepper exports on the international market. It is suspected that the competitiveness of Indonesian pepper exports is greater than Malaysia's in the international market based on RCA, ECI, ISP.

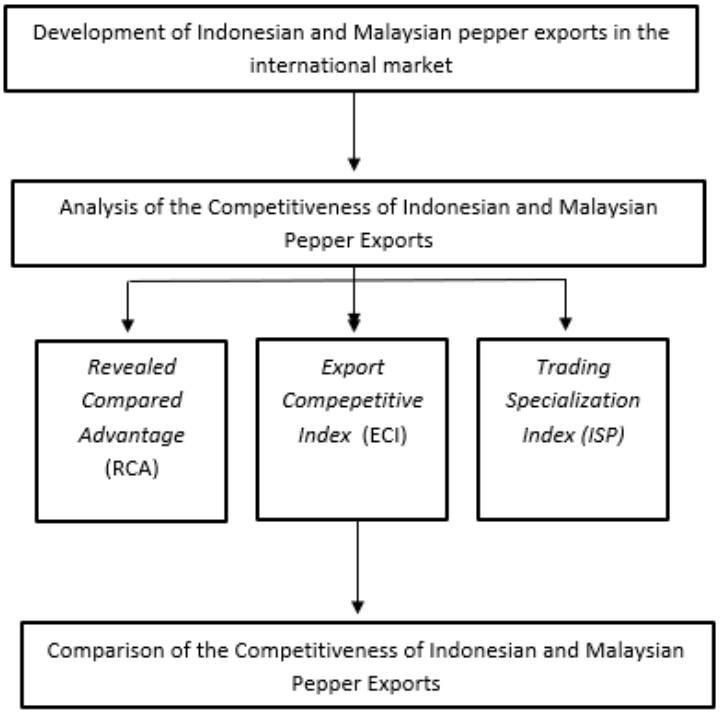

Figure 1. Scheme of Thought Framework

3. Research Methods

This research method uses quantitative research methods. The type of data in this research uses secondary data, namely data obtained from research libraries where the data obtained is in the form of time series data over an 11 year period, namely from 2007 to 2017. Data comes from publications reviewer, Food and Agriculture Organization (FAO), Central Statistics Agency (BPS), Ministry of Trade, Department of Agriculture and various other sources. Data sources were obtained from literature studies and documentation methods. The literature study carried out was by reading various reports from related agencies, both from the government and universities, while documentation was by taking data in the form of tables, graphs and pictures from the Food and Agriculture Organization (FAO), United Nation Commodity Trade (UN Comtrade), the Central Statistics Agency (BPS), the Directorate General of Plantations (Ditjenbun), and other agencies. Data processing in this research used Microsoft Excel 2016 software and the Statistical Package for the Social Sciences (SPSS). The analytical methods used in this research are descriptive methods and quantitative methods. The descriptive method is used to create a picture of the development of pepper exports from Indonesia and its competitor countries, namely Malaysia, while the quantitative method, where data is obtained in the form of numbers and analyzed using statistical and econometric methods, is used to analyze the competitiveness of comparative advantage, competitive advantage, competitive position, and the dynamics of the competitiveness of Indonesian and Malaysian pepper exports in the world

market. The method used to analyze the comparative competitiveness of pepper commodities in this research is Revealed Comparative Advantage (RCA). This method can measure the export performance of a product from a country by calculating the export value of the total export value and comparing it with the export value of the world's total export value.

4. Results and Discussion

The competitiveness of Indonesian and Malaysian pepper can be measured from their comparative advantages. The comparative advantage of pepper commodities from this country can be analyzed using Revealed Comparative Advantage (RCA) which aims to compare the competitive positions of Indonesia and Malaysia in pepper commodities. If RCA > 1 (more than one), it indicates that the share of pepper commodities in a country's total exports is greater than the share of the commodity in question in exports. The greater the RCA value indicates the stronger the comparative advantage you have. For more clarity, the results of the RCA analysis of Indonesian and Malaysian pepper can be seen in Table 1 below.

Table 1. RCA value of Indonesian and Malaysian Lada products

Year	Indonesia	Malaysia
2007	18.7	4.1
2008	22.7	3.6
2009	18.8	3.6
2010	22.4	3.9
2011	11.8	4.1
2012	21.1	2.8
2013	17.0	3.1
2014	9.0	2.4
2015	19.4	3.3
2016	17.5	3.2
2017	26.01	3.57
Average	**18.57**	**3.57**

Table 1 shows the results of the RCA index calculation, during the period 2007 to 2017 Indonesian and Malaysian pepper both have comparative advantages and are competitive in the international market (Ariesha & Alamsyah, 2019). Indonesia has the leading position in comparative advantage compared to Malaysia. The RCA value for Indonesian pepper is always above 7. Meanwhile, Malaysia's RCA is far below Indonesia. Even though the average RCA for Malaysia is above 1, it is still below 5. If compared with Indonesia, Indonesia is clearly competitively superior to Malaysia. Indonesia has a fairly strong comparative advantage in the international market for the pepper market. With comparative advantages like this, it shows a fairly large gap between Indonesia and Malaysia.

This research is in line with research by Aprilia, et al. (2015) Indonesia has a comparative advantage in the pepper trade as evidenced by Indonesia's Revealed Comparative Advantage (RCA) value in 2013 of 17.26 above Brazil (7.70), India (3.60), Malaysia (3.13) but still below Vietnam (44.77). Indonesia has a comparative advantage, but Indonesia's competitiveness is still

below that of Vietnam, which is the largest pepper producing country in the world. The Export Competitiveness Index (ECI) analysis in this research is used to see whether pepper exporting countries in the international market, especially Indonesia and Malaysia, have competitive advantages and strong enough competitiveness against pepper commodities in the international market. The ECI provisions are that if ECI > 1, then the country has competitive advantage and vice versa. For more clarity, see table 2 below:

Table 2. ECI value for Indonesian and Malaysian Lada products

Year	Indonesia	Malaysia
2007	1.18	0.92
2008	1.27	0.85
2009	0.91	1.03
2010	1.32	1.11
2011	0.57	1.00
2012	1.65	0.69
2013	0.76	1.07
2014	0.75	1.16
2015	1.45	0.91
2016	0.91	0.96
2017	1.57	1.04
Average	**1.12**	**1.04**

The results of the ECI analysis which can be seen in Figure 9 show that Indonesia and Malaysia can compete competitively, because they both have positive values (Ginting, 2014). The ECI values of the two countries can almost be said to be equal over the last 10 years. Where Indonesia was superior in 2007, 2008, 2010, 2012, and 2015. Meanwhile, Malaysia was superior in 4 years, namely 2009, 2011, 2013, 2014, and 2016. On average, Indonesia's ECI outperformed Malaysia's ECI during the research period. . However, Indonesia's ECI value is still relatively low. The low value of Indonesia's ECI is due to the lack of role from related and supporting industries. Most of Indonesia's pepper commodities come from smallholder farmers, only a small portion from the private sector in large companies, while exports in other countries have been largely undertaken by large private and state-owned companies and the pepper sector is very export-oriented, where exports cover 95 percent of production. Apart from that, the use of technology in pepper production can produce greater production even though the land area is smaller than Indonesia. Meanwhile, in Malaysia itself, pepper is grown in remote areas, namely in Sarawak and is mostly grown by people/small farmers. The low production and export of pepper in Malaysia is due to pest and disease problems in pepper cultivation and lack of market access for its production.

This research is in line with research by Mardatillah (2020), where developments in the competitive advantage of Indonesian pepper in the 2001-2010 period experienced fluctuating growth. In 2004, Indonesia's ECI value was 0.562, which was below other exporting countries, which means that Indonesian pepper experienced a decline in competitiveness. This decline is thought to be closely related to the decline in area area and crop productivity caused by various factors, especially pest disturbances and fluctuations in pepper prices (Wahyudi, 2009). However,

in 2010 Indonesia's competitiveness trend increased to 1,978, exceeding the four other pepper exporting countries. This increase is in line with the Indonesian government's efforts to improve the performance of pepper exports on the international market by providing rehabilitation for damaged plants (Directorate General of Plantations, 2012). To see the competitive position of Indonesian and Malaysian pepper in the international market, it can be seen using the Trade Specialization Index (ISP) analysis. For more clarity, see table 3 below:

Table 3. ISP values for Indonesian and Malaysian Lada products

Year	Indonesia	Malaysia
2007	0.99	0.64
2008	0.99	0.67
2009	0.98	0.50
2010	0.98	0.50
2011	0.92	0.70
2012	0.95	0.65
2013	0.98	0.67
2014	0.73	0.65
2015	0.95	0.68
2016	0.90	0.58
2017	0.96	0.64
Average	**0.94**	**0.63**

Based on table 3, it can be seen that during the research period (2007-2017). The average ISP value for Indonesia reaches 0.94 per year, this value is greater than Malaysia whose ISP value is 0.62 per year. This shows that Indonesian pepper commodities have strong competitiveness and Indonesia tends to be an exporting country for pepper commodities (domestic supply of pepper is greater than domestic demand for pepper). Likewise with Malaysia, the average pepper ISP value ranges from 0 to 1 and is positive, indicating that this country also has strong competitiveness and tends to be an exporter of pepper commodities.

Indonesia has a higher average ISP value and is declared a pepper exporter. Malaysia is still behind in the specialist pepper trade with Indonesia. This research is in line with research by Aprilia, et al. (2015) that the Trade Specialization Index (ISP) value for Indonesia is a pepper exporting country based on the 2013 ISP calculation with an Indonesian ISP value of 0.98. This shows that the Indonesian pepper commodity is in the maturation stage in world trade or has very strong competitiveness. Indonesia's ISP value in 2013 was above Vietnam (0.73), Malaysia (0.67), and India (0.15) but below Brazil (0.99). It can be concluded that Indonesia is able to compete with other countries in facing global trade.

6. Conclusion

Based on the results of the analysis and discussion of this research, conclusions regarding the problems and objectives of the research are as follows: The development of Indonesian pepper exports is better than Malaysia, in terms of the value of pepper exports to the international market.

During the research period, Indonesia appears to have shown a quite significant increasing trend in pepper exports. The average development of Indonesian pepper exports increased by 19.25 percent. The average development of Malaysian pepper exports increased by 6.75 percent. This means that there is a real difference in the development of exports of pepper products on the international market between Indonesia and Malaysia in the 2007-2017 period. In comparing the competitiveness of Indonesia and Malaysia, the RCA, ECI and ISP indicators were used to obtain conclusions. On the RCA indicator, Indonesia and Malaysia both have positive values. RCA Indonesia's score is 17.83 and RCA Malaysia is 3.41. This shows that both countries have competitiveness. However, Indonesia is still far ahead of Malaysia. On the ICE indicator, Indonesia and Malaysia both have positive values. The value of ICE Indonesia is 1.08 and ICE Malaysia is 0.97. In terms of ICE value, Indonesia is still superior to Malaysia, but not too far apart.

On the ISP indicator, Indonesia and Malaysia both have positive scores. This shows that Indonesia and Malaysia tend to be exporting countries for pepper commodities on the international market. However, Indonesia is still superior to Malaysia. Several suggestions can be given from the results of the analysis of the competitiveness of Indonesian pepper exports against Malaysia. To increase the competitiveness of Indonesian pepper, it is necessary to improve the quality of pepper products. As well as selling pepper exports not only in the form of pure pepper, but pepper in processed form which can provide added value to the selling price of the pepper itself. So the economic value of pepper exports not only wins in export quantity because of the cheap price, but also wins in selling price, thereby providing high additional economic value. For extension workers, it is necessary to provide training and guidance to farmers and the pepper processing industry, to increase knowledge related to the pepper processing process itself. For further research, research needs to be carried out using other competitiveness calculation methods and comparing with other pepper exporting countries such as Brazil, Vietnam and so on. For the government, it is necessary to provide support in terms of facilities and infrastructure that can help develop the pepper industry in Indonesia. Such as superior seeds, effective planting methods, and more modern pepper processing technology. So, it can improve the quality of Indonesian pepper.

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