

Competitiveness of Indonesian Pepper in the International Market

Daya Saing Lada Indonesia di Pasar Internasional

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ABSTRACT

Pepper productivity fluctuates and is also low at 0.46 tons/ha. The export volume and export value of Indonesian Pepper in the International Market are declining. In addition, there is intense competition among pepper exporting countries in the world. The objectives of this study are: to analyze the comparative advantage and competitive advantage of Indonesian Pepper in the International Market over a thirty-year time period from 1993 - 2022. As well as knowing the right policy implications based on pepper export problems in the International Market. The method used in the analysis of comparative advantage is Revealed Comparative Advantage (RCA) while in the analysis of competitive advantage using the Export Competitiveness Index (ECI). The type of pepper used in this study is dried or crushed or ground pepper seeds, with HS code 0904. The results of this study are that Indonesian Pepper is strongly competitive in terms of pepper exports in the International Market. Evidenced by the results of the RCA value of 9.55 or more than 1. So that Indonesia excels in terms of pepper exports in the International Market. Indonesia's RCA results are lower than India. However, it is higher than China. Whereas in the ECI results, Indonesia is competitively competitive. Evidenced by the results of the ECI value of 1.01 or more than 1. Policy implications in pepper exports are increased production, improved upstream and downstream processing, expansion of market share, and government support and policies. Improved production is expected to increase the volume of pepper exports.

Keywords: pepper, comparative advantage, competitive advantage, RCA, ECI

ABSTRAK

Produktivitas lada juga berfluktuasi dan rendah pada 0,46 ton/ha. Volume ekspor dan nilai ekspor lada Indonesia di Pasar Internasional semakin menurun. Selain itu, persaingan yang ketat antar negara pengekspor lada di dunia. Tujuan dari penelitian ini adalah: menganalisis keunggulan komparatif dan keunggulan kompetitif Lada Indonesia di Pasar Internasional dalam kurun waktu tiga puluh tahun yaitu tahun 1993 – 2022. Serta mengetahui implikasi kebijakan yang tepat berdasarkan permasalahan ekspor lada di Pasar Internasional. Metode yang digunakan dalam analisis keunggulan komparatif adalah Revealed Comparative Advantage (RCA) sedangkan dalam analisis keunggulan kompetitif menggunakan Export Competitiveness Index (ECI). Jenis lada yang digunakan dalam penelitian ini adalah biji lada yang dikeringkan atau dihaluskan atau digiling, dengan kode HS 0904. Hasil dari penelitian ini adalah Lada Indonesia memiliki daya saing yang kuat dalam hal ekspor lada di Pasar Internasional. Dibuktikan dengan hasil nilai RCA sebesar 9,55 atau lebih dari 1. Sehingga Indonesia unggul dalam hal ekspor lada di Pasar Internasional. Hasil RCA Indonesia lebih rendah dibandingkan India. Namun, angka tersebut lebih tinggi dibandingkan Tiongkok. Sedangkan pada hasil ECI, Indonesia kompetitif secara kompetitif. Dibuktikan dengan hasil nilai ECI sebesar 1,01 atau lebih dari 1. Implikasi kebijakan dalam ekspor lada adalah peningkatan produksi, perbaikan pengolahan hulu dan hilir, perluasan pangsa pasar, serta dukungan dan kebijakan pemerintah. Peningkatan produksi diharapkan dapat meningkatkan volume ekspor lada.

Kata kunci: lada, keunggulan komparatif, keunggulan kompetitif, RCA, ECI

INTRODUCTION

Exports are prioritized in the country of Indonesia. The oil and gas and non-oil and gas sectors are the main support for export activities in Indonesia. The main generator of foreign exchange in Indonesia is export activities. Transaction activities of goods and services originating between entrepreneurs residing in different countries are called international trade. Foreign trade activities

with an open economic system are a mainstay for Indonesia in an effort to support an economy in a country. One of the largest contributors to foreign exchange in Indonesia is export activities. Large foreign exchange to finance the development of a country. In addition, non-oil and gas exports are activities that contribute greatly to Indonesia's trade balance. Import and export activities and international trade are important sectors for the national economy. These activities affect the development of the economic level and affect the Gross Domestic Product (GDP) (Ikaningtyas et al., 2023).

One of the efforts in improving the welfare of the people is by increasing the competitiveness of the economy. In the economic sector, competitiveness can be improved from various sectors for the economy. The economic sector itself has a strategic role, namely the industrial sector. Because the industrial sector can create jobs for the community. The economy is said to be strong if there is balanced sector growth between upstream and downstream industries. A strong economy can be used as a foundation in the development of a high industrialization system, to survive competitively, in the growth of industrial groups must be able to move dynamically or actively on a global scale (Harya et al., 2019, 2023). Trade in plantation commodities is expected to be useful and as a source of information to support a new finding and how the influence of government policies in carrying out the improvement of trade performance, especially in plantation commodities exports (Harya et al., 2018). The ability of a commodity to enter foreign markets and maintain its market is called export competitiveness. Export competitiveness is necessary in the international market because it is to gain a competitive advantage. Trends in competitiveness are projections to forecast the future (Putri & Hidayat, 2023)

Commodities that are able to enter the export market and survive in that market can demonstrate competitiveness. Competitiveness is also known as competitive advantage. There are two factors that can determine the competitiveness of a country. First, comparative advantage and competitive advantage. Comparative advantage is the state of a commodity that is the same and comes from the same country and is superior to other commodities. Comparative advantage has a natural nature. Meanwhile, competitive advantage can be acquired (can be developed) (Yuliansyah et al., 2023).

The theory of comparative advantage is one of the ideas proposed by David Ricardo in his book entitled "The Principles of Political Economy and Taxation" in 1817. The theory of comparative advantage explains that a country can still engage in trade even if one of the countries does not have an absolute advantage or in other words, experiences a disadvantage in producing two types of goods. Trade will still be profitable if the country that does not have an absolute advantage or has a smaller loss. David Ricardo's theory comes from the concept of labor value, which states that the price or value of a product is determined by the amount of time or labor hours required to produce it. According to the theory of cost comparative advantage (labor efficiency), a country will benefit from international trade by specializing in production and exporting goods that can be produced by the country with a higher level of efficiency compared to the level of efficiency of other countries, while importing goods that are produced less efficiently or inefficiently by the country (Vanza Aji et al., 2019). Braja & Gemzik-Salwach, (2020)

According to an increasing role of innovative technologies is one of the key factors driving this process. Industries with a high level of knowledge and the ability to absorb innovations are considered the main drivers of economic growth and economic competitiveness. On the other hand, economies that have reached a level of progress and are competitive can create an atmosphere that favors further acceptance of the latest technologies and serve as a reservoir for technologies with great potential. In addition, globalization, internationalization, and the development of global trade relations also have a considerable impact on the business arena and the economy as a whole. Globalization, internationalization, and the development of global trade relations have also had a significant impact on the business and economic world. Technological spillovers and shifts in observed trade patterns have also led to changes and readjustments in competitive advantage.

An agricultural sub-sector that has always contributed to international trade is plantations, with one of its products being spices. Indonesia has long been known as one of the world's leading producers of spices. Based on information presented by the Negeri Rempah Foundation, there are around 400 - 500 kinds of spices that exist in various parts of the world, with around 275 of them growing in Southeast Asia. This makes Indonesia the country with the largest diversity of spices in the world, and is often referred to as the "Mother of Spice", (Kumoratih et al., 2021). One of the most strategic spice commodities in international trade is pepper (Mahdi & Suprehatin, 2021).

Pepper is in the 6th position as a contributor to the export value of the plantation sector. Led by palm oil, rubber, and coconut commodities as the top task of contributing the highest export value in the plantation sector in 2021. Pepper has the potential for high export value because it is included in strategic plantation commodities in 2021. The pepper commodity contributed 0.41% of the total export value of plantation commodities in 2021. Productivity is influenced by the ratio between the amount of production (tons) divided by the area (ha). Indonesia's pepper productivity is below 1 ton/ha with an average productivity from 2018 – 2022 of 0.46 tons/ha. Indonesia is in the 32nd position based on pepper productivity in the world in 2022 (Indarti, 2022). The competitive role of Indonesian pepper in international trade is very important. However, the challenge faced in the development of Indonesian pepper is the decrease in the value of its exports in the world market by 13% when compared to competing countries in pepper exports. Nevertheless, with its potential and skills, Indonesia can face fierce competition in the pepper export market at the international level. Due to its crucial role in international trade, it is important to set the right standards and quality for exported pepper products (Anggraini et al., 2021).

The problems in the export of Indonesian Pepper in the International Market is the low productivity which affects the amount of pepper production so that it is expected to affect the volume of Indonesian Pepper exports. The productivity of Indonesian pepper is only 0.46 tons/ha in the thirty year time period from 1993 to 2022. The following is a graph between the export value and export volume of Indonesian Pepper in the International Market:

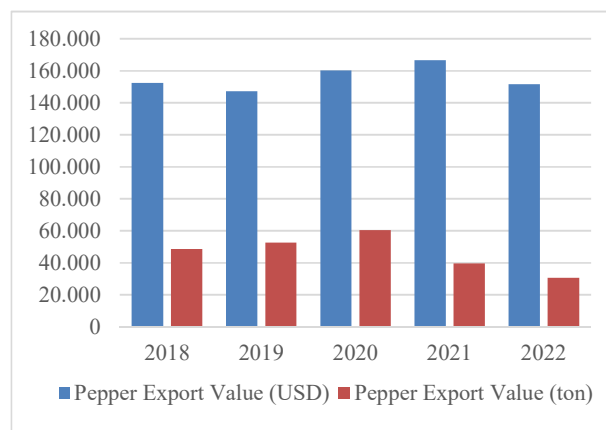


Figure 1. Value and Volume of Indonesian Pepper Export 2018 – 2022

Based on the data in Figure 1, the volume of pepper exports has a downward trend which results in the value of pepper exports also decreasing. In 2020 the volume of pepper exports was 60,505.05 tons, in 2021 it decreased to 39,644.83 tons, while in 2022 it decreased again to 30,495.82 tons. This decline also has an impact on Indonesia's pepper export position in the international market as the largest pepper exporter. This shows that there is intense competition between pepper exporting countries in the world. Competitiveness is very important to maintain export position in the international market. Export position serves to find out how far the export performance with competing countries. In the comparative advantage analysis, we will compare with India and China because these countries are Indonesia's competitors in terms of pepper exports in the world. Therefore, it is necessary to study the competitiveness of Indonesian Pepper exports which aims to analyze the comparative advantage and competitive advantage of Indonesian Pepper exports in the International Market. As well as knowing the policy implications based on problems in pepper exports in the international market.

RESEARCH METHODS

This research has a quantitative research type. The data used in this study is time series data for thirty years, namely 1993 - 2022. The data was obtained from the Central Bureau of Statistics, UN Comtrade, and the International Trade Center. The study uses Indonesia as the focus of research because Indonesia is one of the ten largest pepper exporters in the world. The variables in this study are the value of pepper exports in Indonesia, the export value of all commodities in Indonesia, the

export value of pepper in India, the export value of all commodities in India, the export value of pepper in China, the export value of all commodities in China, the export value of pepper in the world, and the export value of all commodities in the world. The countries that become comparators are India and China, which are also among the largest pepper exporters in the world.

Data analysis was conducted using the Revealed Comparative Advantage (RCA) method to analyze comparative advantage. While to analyze the competitive advantage using the Export Competitiveness Index (ECI) method. RCA is a technique for measuring a country's export competitiveness and identifying commodities that have a low or high level of competitiveness. This method was introduced by a prominent Hungarian economist, Bela Balassa, and is known as the Balassa RCA Index. The Balassa RCA Index is a tool that compares a country's share of a commodity's exports with its share of exports from the rest of the world. RCA is useful for evaluating the relative advantage and competitiveness of a country, with the prerequisite that other factors affecting export increases remain stable (Purna Yudha & Elma Rasita Malau, 2023). The tool used is Microsoft Excel. The formula of RCA is:

$$RCA = \left(\frac{X_{ij}}{X_i} \right) / \left(\frac{X_j}{X_w} \right)$$

Description:

X_{ij} = export value of Indonesian Pepper in International Market (USD/year)

X_i = Indonesia's total export value of all commodities in the world (USD/year)

X_j = world pepper export value (USD/year)

X_w = total world export value of all commodities (USD/year)

If the result of the RCA value is > 1 then a country has comparative competitiveness, and vice versa, if the RCA value is < 1 then a country does not have comparative competitiveness.

In answering the second objective using Export Competitiveness Index (ECI) analysis. This analysis is to analyze the competitive competitiveness of a commodity in a country. The ECI value is the result of a comparison between the share of a country's commodity exports in a certain period (t) compared to the previous period (t-1). The tool used is Microsoft Excel. The ECI formula is:

$$ECI = \left(\frac{X_{ij}}{X_w} \right)_t / \left(\frac{X_{ij}}{X_w} \right)_{t-1}$$

Description:

X_{ij} = export value of Indonesian pepper on the world market (USD / year)

X_w = world pepper export value (USD / year)

t = time period

t-1 = previous time period

According to Sukmayanti et al., (2022) in ECI analysis, there are methods in decision making, namely:

ECI > 1 : has a competitive advantage

ECI = 1 : there is no increase in ECI or the export performance of commodity i in the country j does not change every year

ECI < 1 : has no competitive advantage

RESULT AND DISCUSSION

A. Comparative Competitiveness of Indonesian Pepper in the International Market

Comparative Competitiveness of Indonesian Pepper in the International Market Revealed Comparative Advantage (RCA) can measure changes in comparative advantage. In theory, RCA can show changes in indices in comparative advantage. The RCA index compares the exports of a sector in a country with the exports of all commodities in the International Market. Competitiveness can be measured by analyzing comparative advantage (Harya et al., 2018). There

is a relationship between Competitiveness (RCA value) and export volume. The relationship exerts mutual influence on each other. The RCA value has a positive influence on export volumes. Every addition of 1 unit of RCA variable will affect the increase in export volume (Wardani & Sunyigono, 2021).

In the analysis of the competitiveness of Indonesian Pepper in the International Market, it uses the Revealed Comparative Advantage (RCA) approach method. This method can be used in knowing and analyzing the competitiveness of Indonesian pepper. RCA itself is measured from the performance of Indonesian pepper exports to total exports of all Indonesian commodities compared to the performance of world pepper exports to total exports of all world commodities. In this context, the performance in question is the export value of Indonesian Pepper.

RCA values that are higher and above 1 indicate that a country's commodities have a strong advantage of comparative advantages. India and China are competitors in terms of pepper exports with Indonesia. Therefore, India and China are used as competing countries in the calculation of the comparative competitiveness of Indonesian pepper exports with HS code 0904, namely whole pepper that is dried or crushed or ground. In this analysis, we compare pepper in that country in the International Market. The following is a table of RCA results of Pepper commodities in Indonesia, India, and China:

Table 1. RCA Value Results Indonesia, India, dan Cina

Year	RCA Value		
	Indonesia	India	China
1993	7.52	22.03	2.96
1994	11.74	20.95	3.33
1995	18.92	19.98	2.58
1996	11.68	29.30	2.99
1997	13.79	21.63	2.15
1998	16.83	23.75	1.43
1999	16.59	24.81	1.22
2000	17.04	14.09	1.00
2001	11.94	13.91	1.66
2002	11.03	13.24	1.80
2003	11.84	11.84	2.03
2004	6.48	13.34	2.22
2005	6.26	11.22	1.68
2006	6.92	14.13	1.50
2007	8.31	19.28	1.08
2008	9.95	14.06	1.40
2009	7.65	11.69	1.16
2010	10.32	12.51	0.88
2011	5.96	12.20	0.91
2012	11.25	11.48	0.69
2013	9.83	8.03	0.61
2014	7.75	9.58	0.50
2015	11.87	10.59	0.45
2016	9.75	10.35	0.69
2017	5.64	11.91	0.82
2018	4.54	12.50	1.16
2019	4.43	14.19	1.08
2020	4.43	18.04	0.94
2021	3.30	14.45	0.82
2022	2.96	14.80	1.15
Sum	286.55	459.88	42.90
Average	9.55	29.67	2.77

Source: Secondary Data Analysis (2023)

Based on table 1. The average RCA value of Indonesian pepper exports is 9.55. This value shows that Indonesian pepper exports have a comparative advantage and are above the world average and have strong competitiveness. The value of RCA in 1993 – 2022 seems to fluctuate and tends to

decline. Growth in RCA value also decreased from 2016 which was 16% from the previous year. Since 2016, the value of RCA has continued to decline but stagnated in 2020. Then it experienced another decline in 2021 and 2022. The value of RCA over a period of thirty years fluctuates and tends to decline. This decline was followed by a decrease in export volumes. Export volume is related to the export value obtained. The export volume was affected by declining pepper production. This is in line with research by (Aryani & Sentosa, 2023), that domestic pepper production has a positional effect on the export volume of Indonesian pepper. So it will also affect the value of its exports. But despite the decline, the RCA value is still more than one ($RCA > 1$). The highest RCA score in 1995 was 18.92. And the lowest in 2022, which is 2.96. From 2015 – 2022, the value of RCA continued to decline to its lowest point in 2022. The highest decrease in 2004 was from 93,847,139 USD to 56,710,078 USD.

In a period of thirty years (1993 – 2022), Indonesia and India have strong comparative competitiveness because the RCA value is more than 1 ($RCA > 1$). However, China in 10 years has an RCA value below 1 ($RCA < 1$) which means weak comparative competitiveness because it is below the world average. The average RCA score of the three countries is more than 1 ($RCA > 1$). This means that in that period of time it has comparative competitiveness and strong competitiveness because it is above the world average. Indonesia's average RCA score is 9.55, India's is 29.67, while China's is 2.77. The comparative competitiveness of Indonesian Pepper commodities in the International Market is in a middle position between India and China. Although Indonesia's RCA is higher than China's, based on its export value, China is above Indonesia's. The low RCA value of China is due to the fact that pepper is not the main commodity in exports in China.

According to (Rachma Safitri & Kartiasih, 2019), a country that has a higher RCA value than other countries indicates that the country can produce or make a commodity in a more effective and efficient way. In addition, RCA is also able to show the competitiveness position of a country. So, if a country has a high RCA, then the competitiveness position in commodities in that country is also high. In addition, the value of RCA can affect the volume of commodity exports. The above statement is also supported by Nurcahyani & Salqaura, (2023), the RCA value > 1 it is concluded that the country has great efficiency and is better than other exporting countries. This shows that a country has the potential in this sector to be used as a superior commodity. Thus, a country will get greater income and profits in international trade. And according to Pangestu et al., (2022) the results of a strongly competitive RCA will find out how a country's market share ratio is. With the results of $RCA > 1$, it has a higher market share or can also be called the potential to reach the market. The results of RCA scores must also be compared with competing countries..

B. Competitive Competitiveness

According to (Nurcahyani & Salqaura, 2023) the existence of an active or dynamic state in a trade will be able to cause commodity advantages in a country. This is because other exporting countries are also trying to increase the quantity of exports to certain commodities through increasing technology, human resources, competitive prices or improving the quality of commodities to be exported.

The competitive advantage of Indonesian pepper is analyzed using the Export Competitiveness Index (ECI) approach (Wahyuningsih et al., 2022). The result of the calculation of competitive advantage through the ECI method, as in figure 2.

The value of ECI in the period of thirty years fluctuates until in some years it is below 1 ($ECI < 1$) which means not competitive competitiveness. The largest ECI in 2012 was an ECI value of 1.78, up 190% from the previous time period. While the lowest in 2004 was 0.53 so that exports of Indonesian pepper commodities in the international market were not competitively competitive. The average ECI value of Indonesia is 1.01 or greater than 1 ($ECI > 1$), which means that exports of Indonesian pepper commodities in the International Market have been competitive for a period of thirty years (1993-2022). So it is not in line with the research of Anggraini et al., (2021), namely because the study states that Indonesian pepper exports within ten years (2010 – 2019) do not have competitive competitiveness from the results of ECI competition. The resulting ECI value is 0.94 or less than 1 ($ECI < 1$). From the results of ECI Indonesian Pepper in figure 2 which states that the value is more than one.

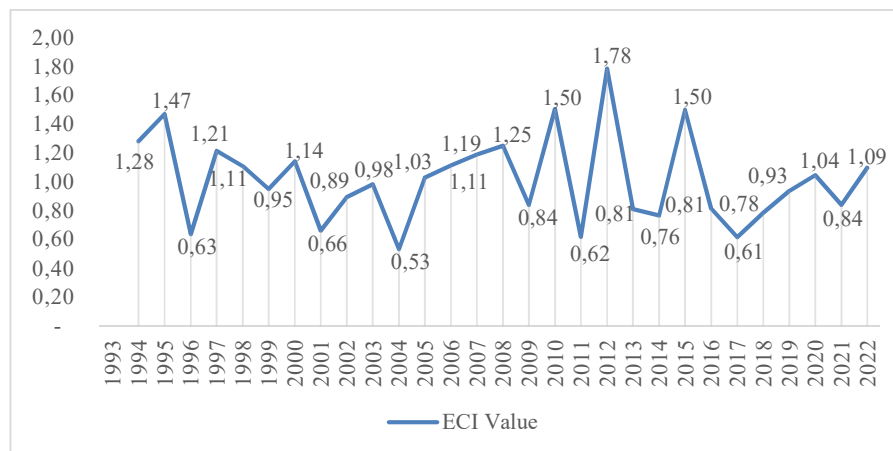


Figure 2. ECI Results of Indonesia Pepper Export

The low point in the ECI value was in 2004 as much as 46% due to the decline in low export volume of only 33,280.33 tons which resulted in a low export value when compared to the export value of World Pepper which reached 1,102,915,249.73 USD while Indonesian Pepper was only 56,710,078.00 USD. So, in 2004, Indonesian pepper experienced a downward trend. But the highest decline in 2011 was as much as 59%. The last five years (2018 – 2022) show that the results of the ECI value fluctuate but tend to increase. So the peak is in 2022. Although this value is still low compared to the previous year. In 2022 this increases because the comparison between the export value of Indonesian Pepper and World Pepper in 2022 is greater than in 2021. This year the ECI value increased by 31%.

The trend of competitiveness in Indonesian pepper exports is still unable to stabilize in an increasing trend position ($ECI > 1$) because in terms of export volume and pepper prices are also still fluctuating. The declining competitiveness trend ($ECI < 1$) has resulted in Indonesian pepper not being able to compete in the global market. This is in line with the idea of Ariesha et al., (2019) which states that the competitiveness trend from the declining Export Competitiveness Index (ECI) calculation results will show that pepper commodities cannot survive and compete in the international trade market..

C. Policy Implications

From export problems, Indonesia must be able to increase in terms of pepper production. In addition, upstream and downstream processes also need to be improved. In upstream activities, there must be technology adoption and increased productivity. While in downstream, the pepper processing process needs to be improved because with good pepper quality it must be able to provide high added value. In addition, there needs to be special attention by the government by providing support and policies. Support can be in the form of assistance in terms of processing and cultivation of pepper and increasing the production of processed pepper products. Production should receive special attention because it is proven to have an effect on the export volume of pepper.

In terms of exports, Indonesian pepper needs market expansion and an increase in export quantity. As well as exporting to countries that directly consume it. Because the first major destination country in the export of Indonesian pepper is to Vietnam in raw form. Vietnam reprocesses pepper from Indonesia and can occupy a position above Indonesia in terms of the world's largest pepper exporter. This is evidenced by Vietnam's export value in 2022 reaching 939,731,441 USD, while Indonesia is only Indonesia 151,716,732 USD. Indonesian pepper needs to be exported to countries such as India, America, and European countries. In addition, exports to India, America, and Europe have high price demand so that it will benefit Indonesia.

CONCLUSION

Indonesian pepper has the advantage of comparative competitiveness and strong competitiveness. Evidenced by the results of RCA Indonesia's value of 9.55 which is more than 1

in the International Market during the time period 1993 – 2022. Indonesian pepper exports are superior when compared to China. However, Indonesia is less in terms of pepper exports when compared to India. This is because the result of Indonesia's RCA value (9.55) is greater than China (2.77) and lower than India (29.67). Indonesian pepper exports have a competitive advantage to be competitive in the international market. Evidenced by the results of Indonesia's ECI value of 1.01, which is more than 1 during the time period 1993 - 2022. Policy implications in pepper exports are increasing production, improving upstream and downstream processing, expanding market share, and government support and policies. . The increase in production is expected to increase the export volume of pepper.

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