

The analysis of export commodity competitiveness in Central Java Province at period 2011-2015

M G Elysi¹, Darsono² and E W Riptanti²

¹Student Department of Agribusiness, Faculty of Agriculture, Universitas Sebelas Maret, Surakarta, Indonesia

²Staff Department of Agribusiness, Faculty of Agriculture, Universitas Sebelas Maret, Surakarta, Indonesia

E-mail : meiviana67@gmail.com

Abstract. This study aims to determine the competitiveness of furniture export in Central Java Province Indonesia in terms of comparative and competitive advantages and to formulate the strategies to enhance the competitiveness of furniture export in Central Java Province. Descriptive analytic method was used for this research. Data used in this research are primary and secondary data. Data were analyzed using RCA (*Revealed Comparative Advantage*), TSI (*Trade Specialization Index*) and SOAR (*Strength, Opportunity, Aspiration, Result*). The results showed that furniture commodity in Central Java Province had strong comparative competitiveness with the value of $RCA > 1$ and had strong competitiveness with positive index values in the range of 0 to 1. Based on SOAR analysis, strategy measures can be formulated, namely maintaining the existing and expanding targeted markets, improving product designs (innovations) and improving raw materials efficiency.

1. Introduction

International trading is an activity which done by a resident of a country with the population of other countries on the basis of mutual agreement. The existence of international trade has contributed to the industrialization, transportation advances, globalization and the presence of multinational companies [1]. One of the international trade activity has an important role is export. Indonesia's export structure divided into two parts, namely the export of oil and gas (oil) and non-oil exports [2].

Table 1. Values of oil and gas and non oil exports Indonesia years 2011-2015 (US\$ million)

Tahun	Non Migas	Migas
2011	162.019.60	41.477.04
2012	153.043.00	36.977.30
2013	149.918.76	32.633.03
2014	145.961.21	30.018.78
2015	131.730.33	18.551.93

Based on Table 1, indicating that non-oil exports is much larger than the value of its exports of oil and gas exports, so the government needs to pay attention to non-oil exports over again to be developed, given its role with considerable value. In the non-oil sector are the flagship products of wood, the furniture. Furniture is one of the products of wood that have high economic value and profitable. Central Java province is one of the provinces that have the potential and have the advantage



in producing furniture. The province can locate its position as the largest furniture export support compared to other provinces, so that the province of Central Java can be considered as one of the biggest furniture center in Indonesia.

Table 2. Commodity export value furniture Central Java province against total non-oil exports Central Java province years 2011-2016 (US\$)

Year	Export Value of Furniture	Total Exports of Non Oil and Gas	Share (%)
2011	237.959.026	4.259.587.721	5.59
2012	258.839.029	4.513.026.249	5.74
2013	341.867.270	4.871.878.841	7.02
2014	395.680.140	5.297.193.878	7.47
2015	451.513.101	5.261.656.280	8.58

Commodity export value of furniture Central Java province Years 2011-2015 shows the increase from year to year, so the furniture industry in Central Java is very potential to be developed considering the market increasingly attractive furniture. The contribution of commodity exports of furniture in Central Java province in affect total value of non-oil exports, efforts are needed to stabilize and improve the competitiveness of commodity exports of furniture, with competitiveness increases expected commodity export furniture Central Java province is able to be an added value to the regional income. The export activities to various destination countries of course the furniture industry in Central Java province get competition from other furniture centers in Indonesia. Therefore, there is a need for an analysis to determine the extent of the furniture export competitiveness in Central Java province based on comparative advantage and competitive advantage, in order to support the strategy in furniture export competitiveness in Central Java province. So the purpose of this study: (1) determine the competitiveness of export commodities furniture Central Java province Years 2011-2015 in terms of comparative and competitive advantages, and (2) formulating the strategy effort in improving the competitiveness of commodity exports furniture Central Java province.

2. Methods

2.1. Research Basic Method

The basic method of research used in this research is descriptive analysis method using periodic data (*timeseries*).

2.2. Location Determination Method

Determining the location of research conducted intentionally (*purposive*) that is in Central Java Province.

2.3. Key Informant Determination Method

Determination of *key informants* in the study conducted in purposive *stakeholders* involved and the effect on commodity export activity furniture in Central Java province, as well as determine the condition of the commodity exports of furniture in Central Java province as a whole.

2.4. Types and Sources of Data

The data used in this study are primary data and secondary data.

2.5. Analysis Method

2.5.1. Revealed Comparative Advantage (RCA) RCA method is one method to determine the competitiveness of export commodities of the country or the industry in terms of comparative advantage. This study did not use the RCA generally comparing the export of a commodity specific countries with export commodity world countries, but in a smaller scope, which is the ratio of

commodity exports furniture Central Java province with the export commodities of Indonesia's furniture, systematically value of RCA used in this study are as follows:

$$RCA = \frac{X_{ij}/X_t}{W_{ij}/W_t} \dots\dots\dots (1)$$

Where the RCA is the competitiveness of commodity exports furniture Central Java province in terms of comparative advantage, X_{ij} is the value of commodity exports furniture Central Java province, X_t is the value of total exports of Central Java province, W_{ij} is the value of commodity exports of Indonesian furniture, and W_t is the total value of Indonesian exports. There are two possible values of competitiveness obtained from the calculation, that if $RCA > 1$, means shows that commodity export furniture Central Java province has a strong comparative competitiveness. If the $RCA < 1$, meaning shows that commodity export furniture Central Java province has a weak comparative competitiveness [3].

2.5.2. Trade Specialization Index (TSI) Trade Specialization Index (ISP) is used to calculate the competitive advantages of commodity furniture Central Java in Indonesia. Analysis of these TSI can describe the position of Central Java for commodity furniture, which tends to be the exporter or importer and put the furniture industry on a stage (competitive position) industrialization that can describe the capabilities gained through the performance of the maximum gain in terms of value over the technology or devices wisdom government. The formula used is as follows:

$$TSI = \frac{N_x t - N_m t'}{N_x t + N_m t'} \dots\dots\dots (2)$$

Where the TSI is Trade Specialization Index, N_x 'is the value of commodity exports furniture Central Java, and N_m ' is the value of commodity imports furniture Central Java. Values of this index has a range between -1 to +1. If the positive value above 0 to 1, then the furniture commodity is said to have a strong competitive competitiveness or Central Java tends to be as an exporter of commodities furniture. Instead, competitiveness on weak or inclined as the importer, if the negative value below the 0 to -1.

TSI can also be used to identify the position of the competitiveness of a commodity in trade which is divided into phases, as follows: (1) Phase introduction, in this phase, the value index of industrial TSI *latercomer* is -1.00 to -0.50; (2) Phase Import Substitution TSI is the index value rose between -0.51 to 0.00; (3) Stage Growth is the ISP index value rose from 0.01 to 0.80; (4) Phase Maturity is the index value is in the range 0.81 to 1.00 [4].

2.5.3. Matrix SOAR (Stregth, Opportunity, Aspiration, Result) SOAR analysis is one tool to the strategic planning approach that focuses on strength and trying to understand the whole system by incorporating opinions from *stakeholders*. the relevant SOAR framework focuses on the formulation and implementation of positive strategies by identifying strengths, build creativity in the form of opportunities, encourage stakeholders to share their aspirations and determine the size and outcome means [5]. Result or results indicate efforts competitiveness strategy of increasing commodity exports furniture Central Java province obtained by looking at the aspect of power, opportunities and aspirations.

3. Results and Discussion

3.1. Export Competitiveness Commodity Furniture Central Java province in terms of the Comparative Advantage

Revealed Comparative Advantage (RCA) in this study was defined that if the share of commodity export of furniture in the total export of commodities from Central Java province is greater than the

market share of commodity export furniture inside total commodity exports in Indonesia, Central Java province is expected to have a comparative advantage in producing specialized furniture commodity based efficiency compared with other countries. RCA is also an index to find out how the performance of commodity exports furniture based on the pattern of trade.

Table 3. Development of RCA value commodity furniture Central Java Province years 2011-2015

Tahun	RCA Value
2011	12.51
2012	10.83
2013	11.71
2014	11.76
2015	12.05
Total	58.86
Average	11.77

Based on Table 4, it can be seen that in the period 2011-2015, shows that the average value of RCA commodity furniture Central Java province has a value above 1, which amounted to 11.77 with RCA index ratio of 1.00. This means that during this period furniture commodity Central Java province has a comparative advantage strong competitiveness in the international market compared with other provinces to commodity furniture.

The value of comparative competitiveness of commodity exports furniture Central Java province relies heavily on changes in the exchange rate against the US dollar. Besides natural resources as well as a determining factor in the analysis of comparative competitiveness, which can be seen from the availability of land resources are used for the development of wood *supply all* raw material furniture. Central Java province has its own forests to produce wood for furniture raw material. The forest is located in Perum Perhutani Unit I Central Java with a total area of 635.43 thousand hectares, which is then used as a function according to forest production as a raw material in the manufacture of furniture [6].

The main problems faced by the wooden furniture industry in Central Java province is the imbalance between supply and demand for wood. According to the Industry and Trade [7], the demand of wood each year to reach 3-3.5 million m³, while the ability of Central Java province to supply the raw materials are still about 400 thousand m³ per year, derived from forestry are the main suppliers. Attempts to cover the shortage of raw material needs is done by bringing raw materials from outside of Central Java province as from West Java, East Java and Kalimantan.

Despite these difficulties the wood raw material, furniture production in Central Java province still able to grow and grow fast due to the *image* well-known of furniture products to the international market due to increased demand. The raw materials of furniture more varied since the raw material is no longer solely teak and mahogany, but also started a lot of use, Mindi wood, wood bayur, combined with sea grass, water hyacinth, banana trees, even with metal or brass. In addition to the raw materials that vary in furniture manufacture is supported by the human resources or furniture craftsmen that have been experienced on the field and carried out by the hands of skilled craftsmen who get the skills and expertise of the patrimony. Skills are also supported by the various facilities available are courses that specialize school field development and engineering expertise timber (PIKA). Therefore, the quality of the product can be trusted by consumers, so the furniture industry in Central Java province comparative able to compete in international markets.

3.2. Commodity export competitiveness furniture Central Java province in terms of competitive advantage

Analysis used to measure competitive advantage of the export competitiveness of furniture Central Java province is using Trade Specialization Index (TSI). This competitive advantage illustrates the position of Central Java for commodity furniture tends to be the exporter or importer and put the furniture industry in a competitive position industrialization stage which can represent a capability

gained through the performance of maximum benefit in terms of technology or device value of government policies.

Table 4. Development of ISP value commodity furniture Central Java Province years 2011-2015

Year	ISP Value
2011	0.97
2012	0.99
2013	0.99
2014	0.99
2015	1.00
Total	4.94
Average	0.99

Table 4 shows the average value of the commodity TSI furniture Central Java province in the period 2011 to 2015 amounted to 0.99 where the value indicates the positive value of the index is in the range of 0 to 1, so that the said commodity furniture competitiveness has a strong competitive or Central Java tends to be as an exporter of commodities furniture. TSI can also be used to identify the competitive position of a commodity in trade. Furniture commodity competitiveness position of Central Java province showed the average value of the TSI that is in the range of 0.81 up to 1.00, the average value can be inferred that the commodity furniture Central Java province at the stage of *maturation*.

Furniture products in Central Java province is able to qualify for export qualify. Meanwhile, in order to do export, the furniture industry to be recognized as a Registered Exporter of Forestry Industry Products (ETPIK), which is an industrial company that has had industrial permit issued on the basis of legislation in force and meet the requirements under the rules of the Ministry of Trade No. 20 / M -DAG / PER / 5/2008 concerning the export of forestry industry products [8].

So far the government continues to encourage and develop policies to improve the competitiveness of furniture with running a promotional strategy through the Minister of Industry No. 90 / M-IND / PER / 11/2011 [9]. Promotion strategies carried out by constantly strive to facilitate the participation of a furniture company at the exhibition. One of the exhibition is the Indonesian International Furniture Expo (IFEX). Indonesian International Furniture Expo (IFEX) is one of the medium used to promote innovation and excellence furniture and handicraft products to a global audience, while helping increase the value of exports [10].

The increase in export value is also strengthened by the issuance of regulations regarding the legality of the timber, which aims to ensure Indonesian timber supply on the world market are not obtained illegally. The Government has established the Timber Legality Verification System (SVLK) for forest management and wood raw material processing companies to implement these policies through Decree No. 64 / M-DAG-PER / 10/12 [11], concerning the provision of export products of the forestry industry through, that exports of forestry industry products shall be equipped with a V-Legal Documents [12].

4. Efforts Strategy to Increase Export Competitiveness Furniture

Efforts strategy to increase competitiveness of commodity exports furniture Central Java using SOAR analysis. SOAR matrix can be seen in Table 5. Following the formulation of strategies for improving efforts commodity export competitiveness furniture Central Java Province, namely (1) Maintain the existing export markets and expand the target market; (2) Improve the product design (innovation); (3) Creating a raw material efficiency.

Table 5. Matrix SOAR competitiveness improvement furniture export commodities Central Java Province

STRENGTH	OPPORTUNITY
1.Experienced Human Resources 2.Image products are well known to the international market 3.The selling price of competitive products so as to compete in the export market 4.Quality of products trusted consumers 5.On time in completing order so as to meet the demand of export market 6.The existence of an effective work process, craftsmen work according to order. Not producing a failed product	1.The market share of furniture export is wide open 2.Capital support from banks is very helpful for furniture production activities to meet the demand of export markets 3.Central Java has its own forest area in producing wood for furniture raw materials
ASPIRATION	RESULT
1.Expect new product innovations to increase 2.Expect there is easy capital assistance 3.Expect to be able to participate in various prestigious furniture exhibition events inside and outside the country 4.Expect the raw materials efficiency 5.Expect a balance between the needs and supply of raw materials	1.Maintaining existing export markets and expanding target markets (S1, S2, S3, S4, S5, S6, O1, O2, A1, A4) 2.Improve product design (innovation) (S1, O1, A1, A3) 3. Create raw material terminal (O3, A2, A5, A6)

5. Conclusion

Based on the analysis of Revealed Comparative and the analysis of *Revealed Comparative Advantage* (RCA) in the data period 2011 to 2015, furniture commodity in Central Java province has an average value of 11.77 or more than one. That's means during that time, furniture commodity in Central Java province has a comparative advantage and strong competitiveness in the international market compared to other provinces. Moreover, according to the analysis of Trade Specialization Index (ISP) for furniture commodity in Central Java province has an average value of 0.99 which is in the range of 0 to 1, so the furniture commodity is said to have strong competitiveness means Central Java tends to be an exporter. To the position result, the competitiveness of furniture commodity has average value of at 0.81 up to 1.00, so that the furniture commodity is at a stage of maturation exports. Efforts strategies can be formulated for improving the competitiveness of commodity exports furniture Central Java Province based on analysis of SOAR include: (1) Maintaining the export market existing and expanding target markets, (2) Improve the product design (innovation), (3) Efficiency material raw.

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