

ANALYSIS OF COMPARATIVE ADVANTAGES OF AGRO-INDUSTRY SECTOR OF REPUBLIC SRPSKA

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Abstract

One of the key macroeconomic indicators for determining the contribution of agriculture to overall economic development of country is foreign trade in agricultural products. The aim of this paper consists in analyzing the position of the agro-industry of Republic Srpska in international trade for the period 2004-2011. The analysis of the position of the agro-industry of the Republic of Srpska in the international market is made on the basis of comparative advantages in relation to the CEFTA countries. The comparative advantages of the agro-industry are analyzed through the use of RCA indicators. The research results show a significant loss of comparative advantage of the agro-industry of the Republic of Srpska.

Keywords: *Agro-industry, RCA indicator, comparative advantage, CEFTA, Republic of Srpska.*

Introduction

Bosnia and Herzegovina, and thus the Republic of Srpska, among others, through the adoption and implementation of the Central European Free Trade Agreement (CEFTA), committed itself to the active involvement of the agro-industrial sector in the European integration process. CEFTA is a free trade agreement signed between the countries of South-Eastern Europe: Albania, Bosnia and Herzegovina, Bulgaria¹, Romania¹, Croatia, Macedonia, Yugoslavia (Serbia and Montenegro), Moldova and UNMIK of Kosovo. By the entry into force of this unique multilateral agreement, 32 free trade agreements entered into force by then are terminated. Like other sectors of the economy of the Republic of Srpska, agro-industry sector, first under the influence of bilateral free trade agreements, and the CEFTA agreement, enters the regime of liberalization of trade flows. For the Republic of Srpska, agro-industry sector is one of the most important levers of its entire economy development. The liberalization of trade flows imposed accepting new challenges to the agro industry sector in order to promote its development and improvement of its competitive position in the market. Thus, this work should answer the question whether the openness of the Republic of Srpska, as a result of acceptance of the above agreement, caused positive change in the structure of international trade of agro-industrial products. Positive change in the structure of international trade implies a change of comparative advantages by the production of higher value-added (Buturac, 2007: 5). In order to define this, an analysis of the comparative advantages of the agro-industrial sector of the republic of Srpska in relation to the CEFTA region has been done.

This paper analyzes the agro-industry sector of the Republic of Srpska (RS) in international trade.

¹Until 2007, Romania and Bulgaria had been members of CEFTA Agreement, and after that they become members of the EU and this Agreement does not apply to them anymore.

Material and methods

The analysis of the comparative advantages of the agro-industrial sector of the Republic of Srpska in relation to the CEFTA region was carried out using RCA indicator or *Balassa index*. It was originally developed in 1965 by *Balass*. It is calculated as follows:

$$RCA = \ln \left(\frac{X_i}{M_i} \right) \times \left(\frac{\sum_{i=1}^n X_i}{\sum_{i=1}^n M_i} \right) \times 100$$

where **X** is export, and **M** import. *i* is production group. Interpretation of this indicator is as follows: *positive values of RCA indicator advantages show that a state has significant comparative advantages in production and exchange of a group of products. Vice-versa, negative values indicate the lack of comparative advantages.* In this paper, RCA indicator has been calculated for the groups of agro industry products of the RS, classified according to custom tariffs of Bosnia and Herzegovina.

Results and discussion

CEFTA countries of the region, in terms of trade in agro-food products, are important foreign trade partners of the Republic of Srpska. Generally, the Republic of Srpska agro-industrial sector, on average, for the period compared to the total foreign trade takes about 26% of shares. The Republic of Srpska agro-industry notified deficit with the most important trading partners of CEFTA countries, in the observed period (Figure 1).



Figure 1. The total foreign trade of the Republic of Srpska agro-industrial sector with CEFTA countries in the period 2004 - 2011.

Source: Authors' processing based on data of VTKBiH and RZRS.

Export-import ratio ranged from 13% in 2004 to 27% in 2011, when it recorded the highest value of the indicator. On average, for the observed period, import ratio was 22%. The maximum value of exports and imports was in 2011, the export valued at 128.5 mil. KM and imports at 477.1 million KM. The main export trade partners of the Republic of Srpska agricultural industry and the CEFTA countries for the analysed period were Serbia and

Montenegro, Croatia, Macedonia and Albania. After 2007, when Serbia and Montenegro got their independence, Serbia took a significant place in terms of volume of trade exchange of agricultural - food products. In terms of exports, the Republic of Srpska agro-industrial sector in the observed period exported mainly to Croatia. The maximum value of exports to this country, was in 2011 when it valued at 66,9 million KM. The second most important partner in terms of exports was Serbia, and the largest export value was in 2011 when it valued at 42.8 million KM. Similar to exports, the import dominant partners in foreign trade of agro-industrial products for the period were Serbia and Montenegro, Croatia, and after falling apart of Serbia and Montenegro, it was Serbia. The maximum value of imports of agro-food products with major partners of CEFTA countries, the Republic of Srpska had in 2011 with Serbia in the amount of 377.6 million KM and Croatia 73.4 mil. KM. While Serbia and Montenegro were together, the largest value of imports was in 2006 when it valued at 300.7 mil. KM (Figure 2).

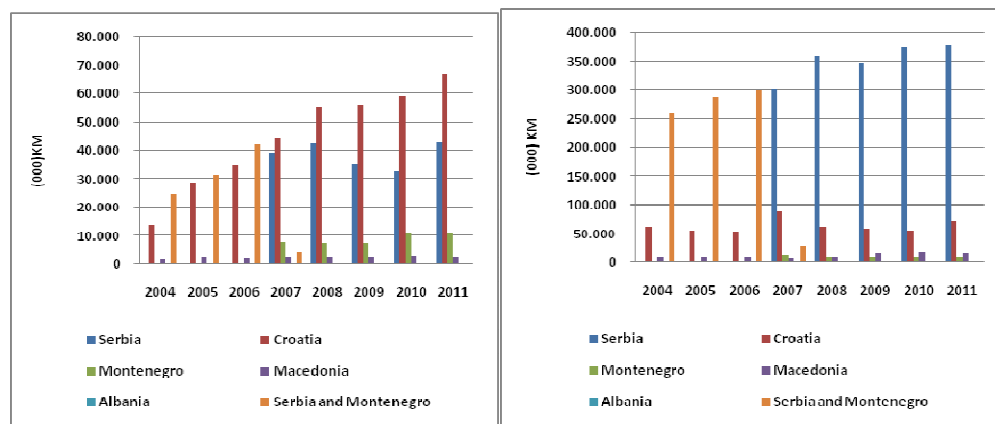


Figure 2. Export and import of the Republic of Srpska's agricultural industry with its major trading partners of CEFTA countries in the period 2004 -2011.

Source: Authors' processing based on data of VTKBiH and RZRS.

Empirical analysis of comparative advantages of the agricultural industry sectors of the Republic of Srpska shows that, in relation to key foreign partners of CEFTA countries, most product groups reported negative values of RCA indicators (table 1). The comparative advantages analysis was performed for the production group of 01-24 against major foreign trade partners of CEFTA; Serbia and Montenegro, Croatia, Macedonia and Serbia for the period 2004 - 2011. For the first four years of the observed period, the Republic of Srpska agro-industry in relation to Serbia and Montenegro, for nearly all product groups, showed negative values of RCA indicators, except for a group of customs tariffs 03 (*fish, crustaceans, molluscs and other*) in 2004, and in 2005 when its value was positive and $RCA_{2004}=+0.3$ and $RCA_{2005}=+0.4$. By analyzing the comparative advantages of certain product groups of the Republic of Srpska agricultural industry in relation to Croatia, the positive values of RCA indicators were noted in the Customs Tariff Group 04 (*milk and dairy products*) in $RCA_{2004}=+0.2$; $RCA_{2005}=+1.6$; $RCA_{2006}=+1.2$; $RCA_{2007}=+1.5$; $RCA_{2008}=3.9$; $RCA_{2009}=2.9$; RCA_{2010} , $RCA_{2011}=+5.0$ and $+5.1$. In this case, the positive value of RCA indicators for the group of customs tariff 04 confirms restructuring of the Republic of Srpska dairy sector. Parallel with the process of structural reform, there are changes in comparative advantages in international trade (*Teodorovic and Buturac, 2007*). For this group of products, a continuous growth RCA indicator value is evident, with the highest value reported in 2011. In addition to milk and dairy products, groups of products of customs tariff 07 (*vegetables, roots and tubers*), 08 (*table fruits: citrus fruit or melons*), 19 (*cereals and flour products*) and 20

(*vegetables, fruit, etc.*) also recorded positive values of RCA indicators. Customs tariff 07 and 08, except in the initial period of 2004, mainly noted positive values of RCA indicators. In relation to Serbia, product groups of the Republic of Srpska agro-industrial sector, except product group of the customs tariff 03 (*fish, crustaceans, molluscs and other*), generally reported a lack of comparative advantages. Insufficient comparative advantages in certain periods were shown by the following groups of products - 08 (*table fruit*), 13 (*shellac, gums, resins, etc.*), 14 (*vegetable planting material*) and 17 (*sugar and sugar products*). The Republic of Srpska in foreign trade of agro-food products in relation to Macedonia, recorded comparative advantages in the following groups of products: 11 (*products of milling industry*) for the periods of $RCA_{2004}=+1.1$; $RCA_{2005}=+1.3$; $RCA_{2007}=+0.2$, $RCA_{2009}=+0.2$ and $RCA_{2011}=+0.7$, 12 (*oil seeds*) in 2004 and 2009 - $RCA_{2004}=+0.3$; $RCA_{2009}=+0.1$, 19 (*products made of cereals, and flour*) for almost the entire observed period. Looking at the RCA indicator values in Table 1 for the period 2004 - 2011, negative values for the group 10 (*cereals*) were noted, especially bearing in mind the growing conditions for the production of this product group, and the fact that the overall structure of the grains take a dominant position with an average of 272,645 ha. Negative values of RCA indicators for the group 10 (*cereals*) show the lack of comparative advantages in the production and trade of this group of products of the Republic of Srpska.

Conclusion

Agro-industry sector in the Republic of Srpska foreign trade with CEFTA countries, regardless of the increased volume of trade in the period 2004-2011, consistently had a negative balance. From the standpoint of comparative advantages of the Republic of Srpska agro-industrial sector in relation to the CEFTA region, showed that the liberalization of trade flows, as well as increased volume of trade in agro-industrial products between the Republic of Srpska and major trade partners of CEFTA countries, has not adopted, or made positive changes of expected trade structure. Compared to individual trading partners of CEFTA countries, from a total of 24 agro-industry product groups analyzed, the comparative advantages in relation to Croatia was expressed in the customs tariffs product group 04 (*milk and dairy products*), with the continuous increase of RCA indicator in the observed period. Positive values of RCA indicators for this product group show that there were structural changes in the dairy industry in the Republic of Srpska, i.e. it was restructured. In relation to Serbia, the comparative advantages of the agro-industry sector were showed in the product groups 03 (*fish, crustaceans, molluscs and other*), and 08 (*table fruits*), 13 (*shellac, gums, resins, etc.*), 14 (*plant material for planting*) and 17 (*sugar and sugar products*), and in relation to Macedonia it was the highest in milling industry as well as products based on cereals and flour. In relation to Serbia and Montenegro, the positive values of the RCA indicator were recorded in the production group of the customs tariff 03 (*fish, crustaceans, molluscs and other*) in 2004 and 2005. A lack of comparative advantages in the production and exchange of other observed groups with all CEFTA countries was recorded in the period 2004-2011.

References

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Table 1. RCA index of product groups of agro industry of the Republic of Srpska in comparison with the main foreign trade partners of CEFTA region, 2004 - 2011.

CT	Name	RCA ₂₀₀₄			RCA ₂₀₀₅			RCA ₂₀₀₆			RCA ₂₀₀₇				RCA ₂₀₀₈			RCA ₂₀₀₉			RCA ₂₀₁₀			RCA ₂₀₁₁		
		SCG	HR	MK	SCG	HR	MK	SCG	HR	MK	SCG	SR	HR	MK	SR	HR	MK	SR	HR	MK	SR	HR	MK	SR	HR	MK
01	Live animals	-0,4	0	0	0	0	0	-0,2	0	0	0	-0,3	0	0	-0,3	0	0	0	0	-0,2	-4,3	0	-0,2	0	0	
02	Meat and other products	-0,4	0	0	0	0	0	-0,7	0	0	0	-0,3	0	0,4	-0,3	0	0	-0,1	-2,0	0	-0,1	-3,4	0	0	-2,9	-0,2
03	Fish, crustaceans, molluscs and other	0,3	-0,4	0	0,4	-1,5	0	-0,5	-0,9	0	0	0,3	-0,8	0	0,2	0,3	0	0,2	1	0	0,2	1,1	0	0,3	0,3	0
04	Milk and dairy products	-0,4	0,2	0	-0,4	1,6	0	-0,3	1,2	0,7	-0,3	-0,3	1,5	1,1	-0,2	3,9	0,5	-0,1	2,9	0,1	-0,1	5,0	0	0	5,1	0
05	Products of animal origin	-0,05	0	0	-0,3	0	0	0	0	0	0	-0,4	0	0	0	0	-0,1	0	0	0	0	0	0	0	0,2	0
06	Trees, plants...	-0,3	-0,2	0	-0,4	-0,03	0	-0,4	-0,1	-0,3	-0,5	-0,5	0,2	0	-0,4	-0,1	0	-0,3	-0,4	0	-0,2	-0,7	0	-0,4	-2,3	0
07	Vegetables, roots...	-0,1	-0,1	-1,2	-0,1	0,2	-1,3	-0,2	0,1	-0,9	-0,04	-0,2	0	-1,0	-0,1	2,1	-0,8	-0,1	2,2	0,7	-0,1	1,8	-0,6	0	1,3	0
08	Fruits; citrus and melons	-0,2	-0,2	0	-0,1	-0,1	-2,5	-0,2	0,2	0	0	-0,1	-0,1	0	0	0	0	0	0,3	0	0,1	1,1	0	0,1	0,7	-0,3
09	Coffee, tea, and spices	-0,4	-1,1	0	-0,4	-0,04	-0,4	-0,6	-0,9	0,7	-0,1	-0,8	-3,8	-0,3	-0,3	-5,3	0,3	-0,4	-4,7	0,4	-0,3	-4,9	0	-0,3	-4,0	0
10	Crops	-0,4	-1,4	0	-0,5	-1,7	0	-0,6	-2,1	0	0	-0,5	-2,0	0	-0,5	-1,7	0	-0,3	-2,2	0	-0,2	-3,2	0	-0,4	-2,3	0
11	Milling industry products	-0,4	-0,5	1,1	-0,6	-1,1	1,3	-0,7	-2,3	0	-0,8	-0,9	-3,2	0,2	-0,8	-7,4	0	0	-6,1	0,2	0	0	-0,1	-0,7	0	0,7
12	Oils seeds and products.....	-0,1	-0,4	0,3	-0,2	-0,5	-0,3	-0,2	-1,4	0	-0,7	-0,1	-0,9	0	-0,1	-2,0	0	-0,1	-2,4	0,1	-0,2	-2,4	0	-0,1	-0,6	0
13	Lac, gums, resins and other...	-0,01	-0,4	0	0	0	0	0	0	0	0	0	0	0	0	0,9	0	0,2	0	0	0	0	0	0	0	0
14	Plants for plaiting	-0,1	0	0	-0,2	0	0	0	0	0	0	0	0	0,1	0	0	0	0	0	-0,1	0	0	0,1	0	0	
15	Fats and oils of animal and plant origin	-0,5	-0,5	0,5	-0,6	0	0	-0,8	0	0	0	-0,8	-5,1	0	-0,9	0	0	0	0	-0,5	0	0	-0,9	-3	-1,3	
16	Meet, meet products, fish,...	-0,3	0	0	-0,4	0	0	-0,3	0	0	-0,6	-0,5	0	0	-0,7	-3,6	0	-0,3	-4,5	-0,8	-0,3	0	-0,8	-0,4	-1,9	0
17	Sugar and sugar products	-0,2	-1,0	-1,2	0,03	-2,7	-0,3	-0,01	-3,4	-0,3	-0,1	0,1	-2,8	-1,7	0,1	0,3	0	0	-0,3	-0,6	-0,6	-2,7	-0,7	-0,2	0,9	-0,7
18	Cocoa and cocoa products	-0,3	0,2	-0,3	-0,3	0,1	-0,6	-0,4	1,1	-0,6	-0,3	-0,4	1,3	-1,0	-0,6	2,2	-0,8	-0,6	0,9	0	-0,2	-0,2	0,3	-0,3	0,4	0,3
19	Crops, fluor...	-0,2	0,6	0,3	-0,3	1,4	0,5	-0,4	1,8	0,1	-0,3	-0,3	1,4	0,1	-0,3	2,2	0,1	-0,3	2,7	0,2	-0,3	2,3	-0,3	-0,4	2,6	-0,3
20	Vegetable, fruits and other...	-0,2	0,5	-0,1	-0,2	0,7	-0,5	-0,01	2,0	-0,6	-0,2	-0,1	0,9	-0,4	-0,1	2,5	-0,4	-0,2	2,9	-0,1	-0,2	3,5	-0,3	-0,1	3,2	0
21	Food stuffs	-0,1	-0,7	0,3	-0,2	-0,2	-0,2	-0,2	-0,6	-0,4	-0,3	-0,2	-0,4	-0,7	-0,2	-0,1	-0,3	-0,2	-0,3	-0,2	-0,2	-0,1	-0,4	-0,2	0,3	-0,4
22	Alcohol and beverages	-0,4	-0,7	0	-0,6	-0,4	0	-0,6	-0,1	0	-9,5	-0,5	-0,2	0	-0,4	-0,1	0	-0,4	0,3	0	-0,3	0,2	0	-0,4	0,2	0
23	Residues and food residues	-0,6	-0,9	0	-0,5	-2,3	0	-0,7	-3,1	0	0	-0,8	-2,2	0	0	-4,5	0	0	-4,8	0	-0,5	-3,5	0	0	-3,8	0
24	Tobacco and replacements	-0,2	0	0	-0,1	0	0	-0,1	-3,4	0	-0,2	-0,6	0	0	-0,6	-12,9	0,1	-0,1	0	0,01	-0,2	-3,4	0,01	-0,7	0	0,02