

Original Scientific Paper

DOI: 10.7251/AGRENG1603060A

UDC 339:338.439.5:061.1 EU(437)(497)

**THE COMPETITIVE POSITIONS OF POLAND AND OF THE
COUNTRIES OF THE WESTERN BALKANS IN AGRI-FOOD TRADE
WITH THE EUROPEAN UNION**

Łukasz AMBROZIAK

The Institute of Agricultural and Food Economics, National Research Institute, Poland
Corresponding author: lukasz.ambroziak@ierigz.waw.pl

ABSTRACT

The aim of the paper is to compare the competitive positions of Poland and of six countries of the Western Balkans (Albania, Bosnia and Herzegovina, Croatia, Macedonia, Montenegro and Serbia) in their trade in agri-food products with the European Union (EU) in 2010–2015. To this end, the synthetic trade competitiveness index (CI) was created, being the arithmetic average of two normalised indices of the competitive position, i.e. the trade coverage index (TC) and the Balassa revealed comparative advantages index (RCA). The study is based on the trade data from the WITS – *World Integrated Trade Solution* database (Comtrade, HS – Harmonised System 2002), expressed in USD. Agri-food products are understood as products classified in chapters 01–24 of the Harmonised Commodity Description and Coding System (HS). The research results show that only in trade of 5 product groups no country from the Western Balkans competed with Poland in the EU market. In other product groups which were competitive in Polish exports Poland competed in the EU market with some of the Western Balkan countries.

Keywords: *Poland, Western Balkans, competitive position, agri-food products.*

INTRODUCTION

The term competitiveness has been widely used and discussed in the literature. In the literature there are a lot of definitions of the competitiveness (e.g. Krugman 1981; Aiginger et al. 2013; Peneder 2001; Farole et al. 2010). It results from the fact that individual authors pay attention to the different aspects of competitiveness and analyse it at different levels. According to the definition of the Organization for Economic Co-operation and Development (OECD 2016), ‘competitiveness is a measure of a country’s advantage or disadvantage in selling its products in international markets’. Similar definition was adopted by the Institute of Agricultural and Food Economics - National Research Institute (IAFE-NRI) for the purpose of the studies on international competitiveness of the Polish food sector. According IAFE-NRI, ‘food manufacturers’ competitiveness is the ability of domestic producers to place their products in foreign markets – both in the EU and

in third country markets – and the ability to developed effective exports’ (Szczepaniak 2014). Sometimes the term competitiveness is understood broader as a ‘competitiveness system’ (Szczepaniak 2014, p.17). It consists of four elements: competitive potential, competitive strategy, competitive instruments and the competitive position. Generally, it can be stated that the competitive potential held by a given company determines adopting a specific competitive strategy. This strategy creates a base for selecting specific instruments of competition, which in turn helps to achieve a specific competitive position (Szczepaniak 2014, p. 16). Thus, the competitive position can be considered as an indicator of competitiveness. According to Misala (2005, p. 300), the competitive position means condition and changes in shares of the given country in the widely understood international turnover, i.e. in international trade in goods and services, and in international movements of production factors as well as the evolution of the structure of these movements. To evaluate the competitive position, many indicators are used, which allow to evaluate the results of foreign trade in the past. Two of them, i.e. the trade coverage index (TC) and the Balassa revealed comparative advantages index (RCA) are used in this research study. Thus, the purpose of the paper is to compare the competitive position of Poland and those of the six studied countries of the WB in their trade in agri-food products with the EU (EU countries except for Poland and Croatia) in the period of 2010–2015.

MATERIALS AND METHODS

For the purpose of the paper, the synthetic trade competitiveness index (CI) of the competitive position of the New EU Member States in exports of agri-food products was created. It was step-by-step process.

1. In order to create the synthetic trade competitiveness index, two indicators of the competitive position in trade were employed, namely trade coverage index (TC) and Balassa’s revealed comparative advantages index (RCA). TC index was calculated according to the formula:

$$TC_{ij} = \frac{X_{ij}}{Y_{ij}},$$

where:

TC_{ij} – trade coverage index in trade in the i^{th} product group of the j^{th} country with the EU,

X_{ij} – exports of the i^{th} product group (here: agri-food products in total and by HS chapters) of the j^{th} country to the EU,

M_{ij} – imports of the i^{th} product group (here: agri-food products in total and by HS chapters) of the j^{th} country from the EU.

TC index determines the extent to which expenses on imported goods are covered by the revenue from their exports. The TC index is used to study the relationship between the exports and the imports at the level of entire trade, sector or product. The TC index greater than 1 means that the export value exceeds the

import value, thus the given country has the relative competitive advantage over partners.

Revealed comparative advantages indices were calculated according to the formula:

$$RCA_{ij} = \frac{X_{ij}}{\sum_{i=1}^N X_{ij}} : \frac{X_{iw}}{\sum_{i=1}^N X_{iw}}$$

where:

RCA_{ij} – revealed comparative advantage index in the j^{th} country exports of the i^{th} product group to the EU,

X_{ij} – the j^{th} country exports of the i^{th} product group (here: agri-food products in total and by HS chapters) to the EU,

X_{iw} – world exports of the i^{th} product group to the EU,

N – number of product groups (here: total exports).

The essence of the RCA index is to determine whether the share of a given commodity group in the exports of a given country is higher/lower than the share of this commodity group in the world exports to the specific market. When the index is greater than 1 (the share of the given commodity group in the exports of a country is higher than the respective share in the world export) – a given country has revealed comparative advantage in the exports to the specific market. Otherwise, when the index is lower than 1 (the share of the given commodity group in the exports of the country in question is lower than the share of this product group in the world exports) – the analysed country does not have revealed comparative advantages in the exports to the specific market.

2. The obtained indices were normalized using the following formulas:

$$nTC_{ij} = \frac{TC_{ij} - 1}{TC_{ij} + 1} \qquad nRCA_{ij} = \frac{RCA_{ij} - 1}{RCA_{ij} + 1}$$

The normalised indices (nTC_{ij} and $nRCA_{ij}$) take values between -1 and 1 with 0 as a reference point. In both cases the value between -1 and 0 means that a given country does not have competitive advantages in trade in a given product group. In turn, the value of each index between 0 and 1 indicates the competitive advantages of a given country in trade in a given product group.

3. The synthetic trade competitiveness index (CI) was created using the following formula:

$$CI = \frac{nTC_{ij} + nRCA_{ij}}{2}$$

The CI index takes value between -1 and 1 with 0 as a reference point. The value of the CI index between -1 and 0 means that a given country does not have competitive advantages in trade in products, while the CI index value between 0 and 1 indicates the competitive advantages of a country in trade in these products.

The CI indices were calculated for six countries of the Western Balkans and Poland in their trade in agri-food products in total and by HS chapters.

The study is based on the trade data from the World Integrated Trade Solution (WITS) database (Comtrade, HS – Harmonised System 2002), expressed in USD. Agri-food products are understood as products classified in chapters 01–24 of the Harmonised Commodity Description and Coding System (HS).

RESULTS AND DISCUSSION

In 2015, the value of agri-food exports of the six countries of the WB to the EU market amounted to USD 2.5 billion, whereas the value of Polish agri-food exports was 8 times larger, at USD 20.7 billion (table 1). The difference in agri-food imports was smaller. The Western Balkan countries imported from the EU agri-food products worth USD 4.2 billion, while the value of Polish agri-food imports amounted to USD 11.5 billion. Thus, the WB recorded a deficit in agri-food trade with the EU (USD 1.7 billion). In turn, Poland noted a surplus (USD 9.2 billion). Among the WB countries the largest exporters to the EU were Serbia and Croatia. However, only Serbia recorded a surplus in agri-food trade.

Table 1. Foreign trade in agri-food products of the Western Balkans and Poland in 2015

Country	Exports		Imports		Balance
	value in 2015 (US million)	changes 2015/2010; 2010=100	value in 2015 (US million)	changes 2015/2010; 2010=100	value in 2015 (US million)
Western Balkans	2,507.0	124.4	4,157.8	133.6	-1,650.9
<i>incl.</i> Albania	86.9	121.2	335.2	75.7	-248.3
Bosnia and Herzegovina	86.7	90.1	545.2	110.5	-458.5
Croatia	896.9	159.9	2,121.1	152.7	-1,224.2
Macedonia	206.0	92.7	299.1	115.0	-93.1
Montenegro	4.5	62.4	140.6	109.7	-136.1
Serbia	1,226.0	115.9	716.5	179.6	509.4
Poland	20,700.2	149.9	11,486.8	119.5	9,213.4

*Source: Own calculations based on Comtrade database.

The EU is the main market in agri-food exports of Poland and of the WB countries (Stojanovic *et al.* 2013; Radosavac and Rosandic 2015; European Commission 2013; Bezhani 2013). In 2015, the share of the EU in Polish exports of agri-food products amounted to over 80%, whereas in the WB it was lower, at nearly 44% (Comtrade 2016). The EU was the most significant in exports of Albania (61%), Croatia (52%), Serbia (43%) and Macedonia (39%), while it was the least important in exports of Montenegro (7%) as well as of Bosnia and Herzegovina (20%) (European Commission 2013). As regards to the competitive position, only two countries, Serbia and Poland, had competitiveness advantages in agri-food trade with the EU. Although trade competitiveness indices clearly decreased in the period in question (the CI declined by 0.17 pps), Serbia had the strongest

competitive position in 2015, followed by Poland (figure 1). In 2010–2015 Poland strengthened its competitiveness in agri-food trade with the EU by 0.09 pps. The strong competitive position of Poland in the EU market resulted from the domination of Polish agri-food exports by food industry products. In 2015 they accounted for 86% of Polish agri-food exports to the EU. The share of food industry products in exports was significantly higher than that in imports. An increase in the CI indices in Polish agri-food trade with the EU resulted from the growing surplus of trade in food industry products. In 2015, its value amounted to USD 9.2 billion. According to the previous studies, a high share of processed goods in agri-food exports of a country is beneficial for its economy and may confirm the thesis on the export-oriented nature of the national food industry (Ambroziak and Szczepaniak 2013). By exporting processed products, producers gain much higher value added benefits than by exporting only raw materials required for the manufacture of such products. Moreover, industrial food processing intended for export enables better use of resources, and thus allows to gain economies of scale. The export of processed (final) products is also conducive to promoting the food sector of a country in external markets, which is more difficult to pursue by exporting agricultural raw materials or industrial semi-finished products used in secondary food processing. In turn, the import of raw materials (most frequently from other climate zones), and then processing them in the country, is more beneficial than the import of finished products because it is conducive to improving the balance of foreign trade and also enables the generation of greater value added, better use of the economic potential and job creation (Szczepaniak, 2012).

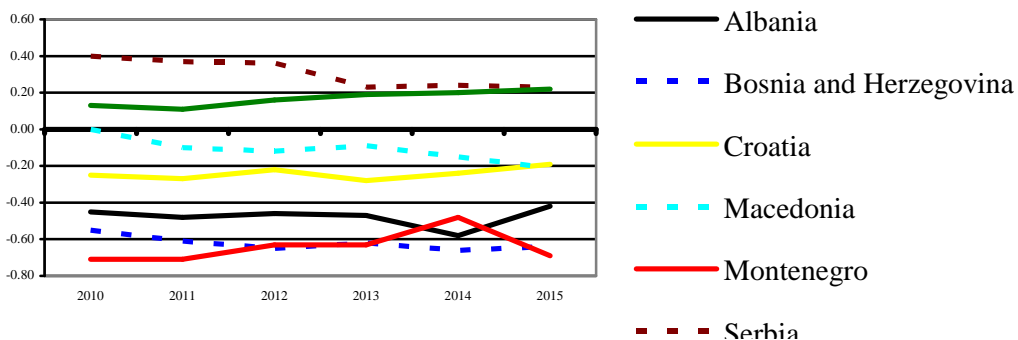


Figure 1. The synthetic trade competitiveness indices (CI) in agri-food trade of Western Balkans and Poland in 2010-2015

*Source: Own calculations based on Comtrade database.

Other Western Balkan countries did not have competitive advantages in agri-food trade with the EU. In 2010–2015 the CI indices grew only in Croatia and Albania, whereas the remaining Western Balkan countries deteriorated their competitiveness. In 2015 the worst performers were Bosnia and Herzegovina, Montenegro and Albania. The CI indices in their agri-food trade with the EU were below -0.40. In Croatia and Macedonia the CI indices amounted to about -0.20.

Similar findings follow from the competitiveness analysis by group of agri-food products (by HS chapter). In 2015, Poland had competitive advantages in the export of 15 (out of the 24) groups of agri-food products. The most competitive ones were tobacco and tobacco products (CI = 0.68), preparations of meat and fish (0.53), meat and edible meat offal (0.44), preparations of cereals and pastrycooks' products (0.32), miscellaneous edible preparations (0.27) and cereals (0.26) – table 2. In 2015, products of the above-mentioned six groups generated nearly 60% of revenue from Polish agri-food exports to the EU.

Table 2. The synthetic trade competitiveness indices (CI) in agri-food trade of Western Balkans and Poland by HS chapters in 2015

HS chapter		Albania	Bosnia and Herzegovina	Croatia	Macedonia	Montenegro	Serbia	Poland
01	Live animals	-0.78	-0.91	-0.19	-0.93	-	-0.96	-0.59
02	Meat and edible meat offal	-0.90	-	-0.50	-0.57	-0.94	-0.92	0.44
03	Fish and seafood	0.10	-0.06	0.20	-	-	-0.76	0.24
04	Dairy produce	-0.81	-	-0.60	-	-0.95	-0.67	0.20
05	Products of animal origin n.e.s.	0.09	-0.69	-0.08	-0.56	-	0.04	0.19
06	Live trees and other plants	-0.90	-0.70	-0.82	0.03	-	-0.78	-0.56
07	Vegetables	0.02	-0.22	-0.65	0.64	0.15	0.16	0.13
08	Fruit and nuts	-0.46	-0.08	-0.61	-0.03	-0.54	0.71	-0.10
09	Coffee, tea and spices	-0.99	-0.58	-0.61	-0.67	-0.47	-0.27	0.25
10	Cereals	-	-0.98	0.39	-0.90	-0.99	0.86	0.26
11	Products of the milling industry	-	-0.62	-0.04	-0.98	-	0.16	-0.19
12	Oil seeds and oleaginous fruits	0.63	-0.67	0.31	-0.54	-	0.37	0.16
13	Vegetables saps and extracts	-0.64	-	-0.57	-0.99	-	-0.70	-0.82
14	Vegetable products n.e.s.	0.62	-0.32	-0.09	0.44	-	0.63	-0.43
15	Animal or vegetable fats and oils	-	-0.44	-0.31	-0.87	-0.94	0.31	-0.04
16	Preparations of meat and fish	0.68	-0.99	0.04	-0.78	-0.97	-0.96	0.53
17	Sugars and sugar confectionery	-	0.08	0.49	-0.41	-0.99	0.55	0.12
18	Cocoa and cocoa preparations	-	-0.90	-0.33	-0.67	-0.99	-0.70	0.23
19	Preparations of cereals and pastrycooks' products	-0.54	-0.64	-0.09	0.08	-0.72	-0.30	0.32
20	Preparations of vegetables and fruits	-0.29	-0.60	-0.55	-0.01	-0.99	0.12	0.20
21	Miscellaneous edible preparations	-0.99	-0.88	-0.01	-0.61	-0.98	-0.11	0.27
22	Beverages and spirits	-0.88	-0.81	-0.34	-0.13	-0.42	-0.28	-0.16
23	Residues and prepared animal fodder	-	-0.73	-0.32	-0.99	-	-0.07	-0.06
24	Tobacco and tobacco products	-	-0.91	0.00	0.73	-	-0.05	0.68

Agri-food products	-0.42	-0.64	-0.19	-0.21	-0.69	0.23	0.22
--------------------	-------	-------	-------	-------	-------	------	------

**Source: Own calculations based on Comtrade database.*

During the membership of the EU, Poland has strengthened its competitive position in the EU market. The basis for building competitive advantages in the agri-food sector has been lower product prices. Simultaneously, non-price advantages have become increasingly important due to progressive convergence of prices among the individual Community members. After the EU accession, there was a significant increase in the importance of the differentiation strategy based on efficient competition with product quality in Polish agri-food exports. However, the price factor still remains a prominent determinant of the international competitiveness of the Polish agri-food sector. In Serbia 9 groups of agri-food products were competitive. The highest CI indices were recorded in trade in cereals (0.86), fruit and nuts (0.71), vegetable products n.e.s. (0.63), sugars and sugar confectionery (0.55) and oil seeds and oleaginous fruits (0.37). Thus, the most competitive items were mainly agricultural products. The share of food industry products in Serbian exports to the EU was lower than that in Polish exports and amounted to 60%. Serbia had especially strong competitive advantages in exports of frozen raspberries, blackberries and blackcurrants as well as maize.

Albania and Croatia enjoyed competitive advantages in 6 agri-food product groups. In Albanian trade with the EU competitive goods included preparations of meat and fish (0.68), oil seeds and oleaginous fruits (0.63), vegetable products n.e.s. (0.62), fish and seafood (0.10), products of animal origin n.e.s. (0.09) and vegetables (0.02). The strongest competitive position of Albania characterised exports of preserved anchovies cuttle fish and squid. In turn, Croatia had competitive advantages in the EU market in exports of sugars and sugar confectionery (0.49), cereals (0.39), oil seeds and oleaginous fruits (0.31), fish and seafood (0.20), preparations of meat and fish (0.04) and tobacco and tobacco products (0.00). 5 product groups were competitive in Macedonian trade with the EU. Those were tobacco and tobacco products (0.73), vegetables (0.64), vegetable products n.e.s. (0.44), preparations of cereals and pastrycooks' products (0.08) and live trees and other plants (0.03). Among vegetables, the strongest competitive position characterised frozen mixtures of vegetables, pepper, cucumbers and cabbages. Montenegro as well as Bosnia and Herzegovina had competitive advantages only in one product group each. Vegetables coming from Montenegro and sugars and sugar originating in Bosnia and Herzegovina were competitive in the EU market.

CONCLUSION

No country from the Western Balkans had competitive advantages in the EU market in the 5 groups of agri-food products which were strong and competitive in Polish trade with the EU. Those were meat and edible meat offal, dairy products, coffee, tea and spices, cocoa and cocoa preparations as well as miscellaneous edible preparations. In 2015 these product groups constituted about 40% of Polish agri-food exports to the EU market. As for preparations of meat and fish as well as

fish and seafood, Polish producers competed in the EU market with those from Albania and Croatia. Apart from Poland, Macedonia and Croatia were also competitive in trade in tobacco and tobacco products in the EU market. Poland competed with Serbia in trade in preparations of vegetables and fruits and with Macedonia in trade in preparations of cereals and pastrycooks' products. As for vegetables, besides Poland also Albania, Macedonia, Montenegro and Serbia enjoyed competitive advantages in the EU market. In trade in oil seeds and oleaginous fruits Albania, Croatia and Serbia competed with Poland. Similarly to Poland, Croatia and Serbia had strong competitive positions in the EU market in trade in cereals, whereas Serbia, Croatia as well as Bosnia and Herzegovina were competitive in trade in sugars and sugar confectionery.

REFERENCES

- Aiginger K., Bärenthaler-Sieber S., Vogel J. (2013). Competitiveness under New Perspectives, WWWforEurope Working Paper, no 44.
- Ambroziak Ł. (2015). The Competitive Position of the New Member States in Trade in Food Industry Products, in: Proceedings of the Competitiveness of Agro-Food and Environmental Economy (CAFEE'2015), Bucharest Academy of Economic Studies, Bucharest, http://www.cafee.ase.ro/?page_id=336.
- Ambroziak Ł., Szczepaniak I. (2013). Monitoring and evaluation of the competitiveness of Polish food producers (4). Competitive position, "Multiannual Programme 2011–2014", No 74, IAFE-NRI, Warsaw.
- Bezhani E. (2013) The Economic Impact of Agricultural Products in the Albanian Exports, Academic Journal of Interdisciplinary Studies, vol. 2, no 1.
- Comtrade database (2016). <https://wits.worldbank.org/WITS/WITS/Restricted/Login.aspx> [11.05.2016].
- European Commission (2013). Analysis of the impact of Croatia's accession to the EU on the agri-food sectors. A focus on trade and agricultural policies. JRC Scientific and Policy Report.
- Farole T., Reis J.G., Wagle S. (2010). Analyzing Trade Competitiveness – A Diagnostics Approach, The World Bank, Washington DC.
- Krugman P. (1981). Intra-industry Specialization and the Gains from Trade, Journal of Political Economy, no. 89.
- Misala J. (2005). Wymiana międzynarodowa i gospodarka światowa. Teoria i mechanizmy funkcjonowania (International trade and world economy. Theory and mechanisms of operation), SGH, Warsaw.
- OECD (2016), Glossary of Statistical Terms, <https://stats.oecd.org/glossary/detail.asp?ID=399> [9.09.2016].
- Peneder, M. (2001). Entrepreneurial Competition and Industrial Location, Edward Elgar, Cheltenham, UK.
- Radosavac A., Rosandic A. (2015). Foreign trade of food products in Bosnia and Herzegovina, Conference Book of Proceedings: Sixth International Scientific Agricultural Symposium "Agrosym 2015", Jahorina, October 15 - 18, 2015.

- Stojanovic Z., Mitrovic R.D., Petrovic I.P. (2013). Serbia's Food Trade Competitiveness and PTAS in the EU Integration Process. European Association of Agricultural Economists, 135th Seminar, August 28-30, 2013, Belgrade, Serbia.
- Szczepaniak I., ed. (2012). Monitoring and evaluation of the competitiveness of Polish food producers (2), "Multiannual Programme 2011–2014", No 40, IAFE-NRI, Warsaw.
- Szczepaniak I., ed. (2014) Assessment of the competitiveness of Polish food producers in the European, "Multi-Annual Programme 2011-2014", No 126.1, IAFE-NRI, Warsaw.