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SIGNIFICANCE AND COMPARATIVE ADVANTAGES OF THE AGRARIAN SECTOR IN SERBIAN FOREIGN TRADE[1]

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Summary

The agrarian sector plays an important role for the overall economic development of Serbia as shown by the main macroeconomic indicators, including the contribution to equilibrium of payment and trade balance of the country. Serbia has a large trade deficit, therefore the agrarian sector, which is constantly (starting from 2005) achieving a positive trade balance, has an important role in overcoming the unfavourable condition of Serbian foreign trade. The share of this sector in Serbia's total exports is increasing and in recent years exceeds 20 percent.

The goal of this paper is to establish the importance of the agrarian sector in the total foreign trade of Serbia, as well as its comparative advantages on the markets of major trading partners (EU, CEFTA-2006 and some members, and countries in the neighbourhood) between 2004-2011. In the first part of the paper we analyse the importance and participation of the agrarian sector in the total foreign trade of the Serbian economy. The second part includes the basic flows, developing trends and the structure of foreign trade of the agrarian sector in Serbia by products and by most significant trading partners. Then, the revealed comparative advantage (RCA – Revealed Comparative Advantage) index, which was used for the analysis of the position and comparative advantages of the agricultural sector, is determined.

Key words: *agrarian sector, foreign exchange, revealed comparative advantage*

JEL classification: *Q17*

1. Introduction

Agricultural products are traditionally important in the Serbian foreign trade and contribute to its balance. Since 2005 Serbia has consistently positive trade balance

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of agricultural and food products, which makes this sector one of the few with positive trade balance. Certain changes happened in the structure and territorial orientation of foreign trade of agricultural and food products from Serbia. This applies to foreign trade regime, which is adjusted to the requirements of the World Trade Organization in anticipation of acquiring the status of member state and to the Stabilisation and Association Agreement between Serbia and the EU, and CEFTA agreement, whose members are the most important trade partners of the country. Serbia's membership in CEFTA (Central European Free Trade Agreement) in 2006, as well as the Stabilisation and Association Agreement, means major (full) market liberalization. Accessing to certain economic integration or trade liberalization, despite the positive can have adverse effects by increasing the competition and the rational use of resources, but it may cause the decrease of employment, increase of the deficit, and could pose a serious threat to some agricultural sector in our country.

Therefore, in terms of an increasingly competitive international environment, particular importance is to determine indicators of comparative advantage of the Serbian agrarian sector.

The aim of the paper is to establish the importance of the agrarian sector in the total foreign exchange of Serbia, as well as its comparative advantage in the global markets and the major trading partners (EU, CEFTA-2006 and its members) in the period 2004-2011. In the structure of work, after part with theoretical framework research, there is a part showing the working method and data sources, then (fourth) part where is analyzed the importance and participation of the agrarian sector in the total foreign trade of the Serbian economy. In the fifth and sixth part are analyzed the trends, development and the structure of foreign trade of the Serbian agrarian sector by product and major trading partners. In continuation, the revealed comparative advantage index was calculated and used for the analysis of the position and comparative advantages of the Serbian agrarian sector in the global (world) market and the markets of major trading partners for the period 2004-2011. The last part of the paper contains some concluding remarks.

2. The theoretical framework of the research

In terms of open and integrated world economy competitiveness is a particularly important element. Competitiveness is a key factor of success on national and international market and can be observed at the level of economy, sector (industry), company or individual products or groups of products.

The measurement of competitiveness and comparative advantages based on diferent theories (Rikardo, Hecksher-Ohlin) creates a number of difficulties that are primarily related to the coverage of a large number of factors of comparative advantage as well as the difficulty of measuring and comparing these factors across countries and sectors (*Utkulu, Seymen, 2004*). Balassa B. (1965), in an effort to overcome these difficulties of calculating the actual comparative advantages of individual sectors and their comparison between countries, started from the actual trade patterns (data on exports and imports) and based on that defined the concept of revealed comparative advantage (RCA) of the country. [4] In practice, this is a generally accepted method for the analysis of trade data called "Balassa index" which measures a country's comparative advantage. Index of revealed comparative advantage actually indicates that, if the share of exports of certain group of product of a country in total world exports is higher than the share of these products in total world exports, then the country has a comparative advantage in the export of these products.

Balassa index allows to determine whether a country (sector) has "revealed" comparative advantage, but it doesn't show the main sources of these advantages. In following decades the Balassa index or definition of RCA was often changed, and today there are a number of modified parameters (*Vollrath, 1991, Dimelis, Gatsios, 1995; Fertö, Hubbard, 2002; Utkulu, Seymen, 2004*).

The literature emphasizes the problem of implementation of various measures of RCA, which arise due to the impact of government intervention, such as import restrictions, export subsidies and other protectionist policy measures, which may affect the level of calculation and create a "distortion" of calculated RCA indicators. This also means that based on such calculated indicators one can make wrong conclusions about the level of open comparative advantage. Therefore, in some studies (*Fertö, Hubbard, 2002*) some derived indicators are used in order to minimise the effects of various protectionist policy measures on level of RCA (*Utkulu, Seymen, 2004*).

Due to the use of a large number of different indicators for the calculation of RCA given in the literature, inconsistent results about the level of comparative advantage for certain product groups (sectors) may appear. Therefore, policy makers need to be careful when interpret RCA indexes and draw conclusions about the (none)existence of competitive advantages.

For countries with low market potential, such as Serbia, the international market is an important element for the analysis of competitiveness and comparative advantages, but they have been analysed a relatively small number of studies. Similar researches conducted the *Jefferson Institute (2003)* and *Milanović, Stevanović (2012).*

[4] Before Balassa introduced index of revealed comparative advantage (RCA) in 1965, Liesner (1958) already gave his contribution to the empirical research of RCA.

3. Method of work and data sources

Standard mathematical and statistical indicators were used for the analysis of the main trends and characteristics of foreign trade of agricultural and food products and their importance in the total trade of Serbia in the period 2004-2011 (indices, the average growth rate, relative indicators of the structure).

In order to determine the position of the Serbian agricultural sector in relation to major trading partners (EU, CEFTA-2006 and individual members) the Revealed Comparative Advantage – RCA index was used. This index was first applied in 1958,[5] but it was popularized by Balassa B. (*1965*), and over time it has been modified and revised by number of authors. The methodological approach is known as the "Balassa index" and is used to discover the advantages (weaknesses) of sector of any country in exports. Original Balassa index, which is calculated by the formula (*Balassa, B., 1965*):

$$RCA_1 = (X_{ij} / X_{it}) / (X_{nj} / X_{nt}) = (X_{ij} / X_{nj}) / (X_{it} / X_{nt}); \qquad (1)$$

where: X – export; and i – country; j – product (sector); t – a set of products (sector); n – a group of countries.

This index measures a country's export of one product related to the total export of the country and on the proper performance of total export (all countries of the world-total). If the share of export of a product of a country in its total export exceeded the share of export of the product in all the (remaining) countries in total world exports (other than the product), that products has an open competitive advantage (RCA_1>1). Similarly, if the share of export of a product of a country in total world export of that product is higher than the share of total export of the country in total world export (RCA_1>1) then there is an open comparative advantage of that country in export of that product.

However, there are critics of this method of calculation of RCA index, since it does not involve the import (*Greenaway, Milner, 1993*). There are number of ways of calculating RCA index in the literature listed, all derived from the original Balassa index (*Vollrath, 1991; Bojnec, 2001; Fertö, Hubbard, 2002; Utkulu, Seymen, 2004*).

The calculation of RCA_2 includes the possibility of simultaneous exports and imports (only "own" trade – imports and exports) of product (sector) as follows:

$$RCA_2 = (X_{ij} – M_{ij}) / (X_{ij} + M_{ij}) \qquad (2)$$

where: X – export; M – import; i – country; j – product (sector).

[5] Liesner (1958) first proposed a simple method of calculating revealed comparative advantage according to the formula: RCA = X_{ij} / X_{nj} where X – export; i – country; j – product (or sector); n – groups of countries, e.g. EU (Utkulu, Seymen, 2004).

The index is calculated as the ratio of trade balance (of a product or sector) of a country and the total volume of trade (of product or sector) with the world.

In determining the RCA_2, value can range from -1 to 1. If the value of RCA_2 is from 0 to +1 there is an open comparative advantage of a product (sector). If the RCA_2 ranges from -1 to 0, product (sector) doesn't have a comparative advantage, but some restrictions. In particular, in this way of calculating RCA, one can highlight the problem of ambiguity if the index value is close to zero (*Greenaway, Milner, 1993*).

Besides the given formula, we can specify another version of RCA calculation or Balassa index, which is commonly used, and is calculated according to the following equation (*Balassa, 1965; Utkulu, Seymen, 2004*):

$$RCA_3 = (X_{ij} / X_{it}) / (M_{ij} / M_{it}) = (X_{ij} / M_{ij}) / (X_{it} / M_{it}) \quad (3)$$

X – export; M – import; i – country; j – product (sector); t – group of products (sectors).

In fact, RCA_3 index of open comparative advantage is the ratio of the relative share of the value of export of products (sector) in total export of the country in a particular market and the relative share of the value of import of product (sector) in the value of total import of a country from that particular market.

RCA_3 index was determined in this paper (according to the formula 3) for the agrarian sector in Serbia, for the markets of major trading partners and indicates the position and comparative advantage of the agrarian sector in relation to the overall economy of our country in these markets. RCA index is calculated for each group of agricultural and food products for total export and import of the agrarian sector in Serbia, and for individual countries, our most important trading partners. This gives an insight into the comparative advantages of certain groups (divisions) of agrarian products in relation to the total economy of Serbia and exchanges with all countries, but also in the markets of some major trading partners. If the value RCA_3 index is greater than 1 this indicates that the product (division, sector) has a comparative advantage in a given market relative to other sectors of the economy.

As the main source of data for analysis in this study were used the database, publications and documentation material of the Statistical Office of Republic of Serbia, particularly data on exports and imports-total and by major trading partners (EU, CEFTA and some of its members). SMTK rev.4 was used. According to this classification, the agrarian sector (agro-food products) include the following sectors 0-Food and live animals (commodity divisions: 01-09), 1-Bevereges and Tobacco (11, 12), 2-Crude materials, inedible, except fuels (21, 22, 29), 4-Animal and vegetable oils, fats and waxes (41, 42, 43). These data for global level (for world-total export and import, and by SITC division) were used from the UN COMTRADE Database.

4. The importance of agrarian sector in foreign trade in the overall Serbian economy

Foreign trade and the value of export, import and trade deficit of the overall Serbian economy grows by 2008 in which it recorded the largest trade deficit in the analyzed period of over $ 13 billion (Table 1). The negative impact of the overall global economic conditions caused a significant decline in total export in 2009 (about 24%) and import (about 35%) and, consequently, of the total trade deficit of Serbia (about 44%). In the coming years was experienced a rise in the value of foreign trade of Serbia. These data suggest that relatively available natural resources cannot be a sufficient precondition for the development of foreign trade of Serbia and dynamic growth of exports.

Table 1: Foreign trade, balance and the coverage of import by export in overall economy and Serbian agri-food products

	2004	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**
Export-total *(mil. US $)*	3,522.4	4,480.8	6,426.6	8,824.0	10,972.2	8,342.9	9,793.0	11,777.9
Import-total *(mil. US $)*	10,750.6	10,458.6	13,169.5	19,161.2	24,327.9	15,804.5	16,467.7	19,859.1
Balance-total *(mil. US $)*	-7.228.2	-5,977.8	-6,742.9	-10,337.2	-13,355.7	-7.461.5	-6,674.7	-8,081.2
Cov. of import by export (%)	32.8	42.8	48.8	46.0	45.1	52.8	59.5	59.3
Export-afp *(mil. US $)*	797.2	919.0	1.263.6	1.684.0	1,955.5	1.942.7	2,240.8	2,696.5
Import-afp *(mil. US $)*	853.4	770.1	903.3	827.6	1,113.0	997.7	1,199.3	1,404.5
Balance-afp *(mil. US $)*	-56.2	148.9	360.3	856.4	842.6	945.0	1,041.5	1,292.0
Cov. of import by export (%)	93.4	119.3	139.9	203.5	175.7	194.7	186.8	192.0

Source: Authors' calculations based on data from databases of the SORS, Belgrade

According to the World Economic Forum (WEF) Serbian economy is among the least competitive economies in Europe.[6] Among other things, this points to the outdated technology, leading to poor quality of production and the decline in export competitiveness, and growth in foreign trade deficit. A small number of products

[6] Recent reports by the World Economic Forum – WEF on competitiveness indicate a decline of already low competitiveness of Serbian economy starting from the financial and economic crisis. Thus, according to the report in 2011 Serbia was on 95th place (out of 142 countries); and only the economy of Bosnia and Herzegovina was ranked lower of the transition countries of Central and South-eastern Europe (on 100th place). According to the Report on competitiveness for 2012 Serbia is still at 95th place out of 144 countries (only Greece was ranked lower from countries in the region).

adapted to the new international standards, small scale of production, loss of previous export markets and others also contributes.

An important indicator of the competitiveness is the index of coverage of import by export. In Serbia, the index of coverage of import by export for overall economy was mainly increasing, and the highest level was recorded in 2010. Coverage of import by export of agricultural products was the lowest in 2004 and continues to increase up to 2007 when it reached the maximum, or when export revenues were more than twice the size of payments for import of agricultural products.

Agricultural and food products have an important role in foreign trade exchange. Their share in the total export of Serbia is relatively high and has settled in recent years, on about 23%, and in import on about 7% (Table 2).

Table 2: Share of agro-food products in the total foreign trade of the Serbian economy in the period 2004-2011 (%)

	2004	2005	2006	2007	2008	2009	2010	2011
Share of export of agri-food products in total export	22.6	20.5	19.7	19.1	17.8	23.3	22.9	22.9
Share of import of agri-food products in total import	7.9	7.4	6.9	4.3	4.6	6.3	7.3	7.1
Share of deficit of agri-food products in total deficit	10.8	-	-	-	-	-	-	-

Source: Authors' calculations based on data from databases of the SORS, Belgrade

In all years, except 2004, when the deficit of the agrarian sector accounted for about 10% of the total trade deficit, significant surplus in foreign trade of agri-food products from Serbia was created. Given the observed trends in the following years, it can be concluded that the agrarian sector is an important factor in balancing the foreign trade and macroeconomic stability.

5. Flows of foreign trade of agricultural and food products from Serbia

Exports of agricultural and food products from Serbia is predominantly focused on the EU and CEFTA-2006 (Table 3). The share of the EU countries in total Serbian agrarian export in the early years of the analysis was about 55%, but after the signing the CEFTA agreement in 2006 was significantly reduced at the expense of increased export of these products to countries in the region (which is 2008 exceeded 52%). However, after the entry into force of the Interim Agreement with the EU (from 2009 unilateral application by Serbia and from 2010 from the EU), the share of exports of the agrarian sector in these countries was increased and reached almost 50% in 2011, while its share in CEFTA countries has declined (to about 40% in 2011). In other countries of the world we export only 6-9% of the value of agri-food products (with the trend of the increase that can be explained, among other things, by signing trade agreements with some countries, such as the Russian Federation, Turkey, EFTA, etc).

Table 3: The territorial focus of foreign exchange of Serbian agrarian sector

		2004	2005	2006	2007	2008	2009	2010	2011
mil US$	**Export**	**797.2**	**919.0**	**1.263.6**	**1.684.0**	**1.955.5**	**1.942.7**	**2.240.8**	**2.696.5**
%	**EU-27**	**54.9**	**55.4**	**46.4**	**43.1**	**40.6**	**47.5**	**48.2**	**49.9**
	CEFTA-2006*	**39.5**	**38.0**	**47.0**	**50.2**	**52.3**	**46.1**	**43.0**	**40.9**
	B&H	64.6	65.9	42.2	40.3	40.7	41.9	43.7	42.0
	Montenegro	-	-	32.9	32.9	35.6	33.8	29.4	30.2
	Croatia	8.9	9.0	6.6	5.3	6.2	6.5	6.7	10.1
	Macedonia	22.7	21.4	15.0	17.9	15.8	15.8	17.4	15.8
	Ot countries	**5.6**	**6.6**	**6.6**	**6.8**	**7.1**	**6.4**	**8.8**	**9.3**
mil US$	**Import**	**853.4**	**770.1**	**903.3**	**827.6**	**1113.0**	**997.7**	**1199.3**	**1404.5**
%	**EU-27**	**46.8**	**47.3**	**42.6**	**40.0**	**40.0**	**39.9**	**43.7**	**45.2**
	CEFTA-2006*	**11.3**	**14.0**	**19.8**	**24.2**	**24.6**	**24.9**	**23.3**	**22.6**
	B&H	21.4	17.4	16.8	19.0	19.9	22.6	22.1	20.5
	Montenegro	-	-	14.7	13.8	10.5	9.0	7.3	6.4
	Croatia	31.1	33.4	30.4	27.5	29.8	30.4	30.0	32.5
	Macedonia	47.1	48.8	36.6	37.4	36.3	35.6	38.7	39.4
	Ot countries	**41.9**	**38.7**	**37.5**	**35.9**	**35.4**	**35.2**	**33.0**	**32.2**
mil US$	**Balance**	**-56.2**	**148.9**	**360.3**	**856.4**	**842.6**	**945.0**	**1.041.5**	**1.292.0**
	EU-27	**37.5**	**144.6**	**201.7**	**394.3**	**349.0**	**524.3**	**557.1**	**709.4**
	CEFTA-2006*	**218.9**	**241.3**	**414.6**	**644.7**	**748.7**	**646.7**	**683.8**	**784.5**
	B&H	182.9	211.4	220.4	302.7	361.3	318.7	358.9	398.2
	Montenegro	-	-	168.9	250.6	335.4	280.0	263.4	312.6
	Croatia	-1.9	-4.7	-15.0	-10.4	-18.6	-17.1	-18.8	7.5
	Macedonia	26.3	22.0	23.7	76.8	61.6	52.9	59.6	48.7
	Ot countries	**-312.6**	**-237.0**	**-255.9**	**-182.5**	**-255.1**	**-226.0**	**-199.4**	**-201.9**

** Because of the low value of foreign exchange, individual values for Albania and Moldova were not displayed, but are included in the totals for CEFTA*

Source: Authors' calculations based on data from databases of the SORS, Belgrade

The analysis of the territorial orientation of export of the Serbian agrarian sector in the neighbouring countries and our direct competitors, members of CEFTA-2006 in the global market, shows that the greatest part is realised in Bosnia and Herzegovina, but with noticeable decline of the share (from more that 60 to about 40%). Export of agrarian sector in Montenegro, recorded since 2006, accounted to about one third of the value of export to the CEFTA. According to the share in the regional structure of Serbian agrarian export on CEFTA market follows Macedonia and then Croatia.

EU-27 countries have the largest share in import of agri-food products in Serbia, which was at maximum of 47.3% in the 2005 but then was reduced to 39.9% in the

2009. Application of the Interim Trade Agreement has caused an increase of import from the EU, which in 2011 accounted for 45.2% of import of agri-food products. Share of CEFTA in 2004 amounted to only 11.3%, but in the subsequent of the analyzed period, especially after the signing of the Agreement, have been significantly increased and reached almost a quarter of agrarian import of Serbia. The share of other countries in imports of agri-food products in Serbia were constantly reducing, from over 40 to around 30%.

In the structure of import of agrarian products from CEFTA in Serbia, the most represented are the products from Macedonia, followed by Croatia, Bosnia and Herzegovina and Montenegro.

In the exchange of agri-food products with EU-27, Serbia has a positive balance, which is continuously increasing (from about 37 to more than 709 million U.S. $). With most of the CEFTA countries, the Serbian agrarian sector also achieved a positive trade balance, with the largest surpluses in trade with Bosnia and Herzegovina, and then with Montenegro. The exception is Croatia (though in 2011 there was a surplus with this country as well).

6. The structure of foreign trade of the Serbian agri-food sector

The particular importance for the analysis of foreign trade of Serbian agrarian sector has its structure. Determining the presence or participation of certain groups of products in export and import, can serve as an important indicator for taking specific measures in the field of foreign trade and agricultural policy.

According to the representation in the export of Serbian agrarian products, during analysed period, three divisions distinguish: 04-Cereals and cereal preparations; 05-Vegetables and fruits and 06-Sugar, sugar preparations and honey (Table 4). In the early years of analysis (2004-2008) the highest share of export of agricultural products had the division 05-Fruits and vegetables. The share of these products was constantly reducing, from about 30% to 25%, and starting from 2009 the primacy in the realized value of Serbian export took over division 04-Cereals and cereal preparations. Commodity group 06-Sugars, sugar preparations and honey, that took advantages of autonomous trade preferences with the EU has achieved a high level of export in the early 2000’s, while in the continuation of the analyzed period, it decreased to about 7%. The participation of other sectors in export commodity does not reach 10% in any year of the analysis (except sector 11-Beverages in 2008). The current structure of export of the agrarian sector can be described as unsatisfied, since the dominant role is played by the primary, unprocessed, and products at lower level of processing that achieve lower export prices. Therefore, it is important to use various measures of economic and agricultural policy, harmonized with WTO requirements, to encourage increased representation of products of higher processing stages, which provide a higher value of total exports. It is important to pay more attention to diversification of product range and improvement of quality products harmonized with the requirements of developed, modern markets.

Table 4: Structure of exports of Serbian agrarian sector in period 2004-2011 (%)

SITC divisions	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**
00-Live animals	0.3	0.3	0.2	1.0	3.0	2.9	3.0	2.7
01- Meat and prepar.	2.9	3.6	6.1	5.7	4.5	3.3	2.7	2.2
02- Dairy prod&eggs	1.1	1.3	3.4	3.2	3.6	3.3	3.1	3.4
03- Fish and prepar.	0.1	0.2	0.2	0.2	0.4	0.3	0.2	0.2
04- Cereals& prepar.	13.0	20.0	23.1	20.3	18.5	24.6	25.8	27.1
05- Vegetables&fruit	30.1	28.5	25.8	27.7	24.5	23.3	23.6	24.4
06- Sugars and honey	20.9	19.1	13.3	9.9	9.0	8.2	9.6	6.9
07- Coffee, tea, cocoa	4.9	4.8	4.6	4.4	4.4	4.3	3.8	3.1
08-Feeding stuff for an.	2.5	2.0	2.1	3.6	3.6	3.2	3.3	3.8
09-Miscell. edible pr.	4.6	4.6	5.5	4.5	4.5	4.3	3.9	3.7
11-Beverages	6.0	5.6	7.9	8.7	10.5	9.9	7.9	8.0
12-Tobbaco&manuf	1.0	0.4	1.1	1.7	2.3	2.9	2.5	2.2
21-Hides, skins,furskins	1.8	1.8	1.7	1.3	1.1	0.7	1.2	1.4
22-Oil-seeds&ol.fruits	1.1	1.3	1.1	0.8	1.2	1.2	1.9	2.3
29-Crude an&veg. mat	2.2	2.1	1.6	1.3	1.5	1.3	1.2	1.2
41-Animal oils & fats	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
42-Fixed veg fats&oils	7.0	4.1	2.0	5.3	7.0	6.0	6.2	7.0
43-An.or veg fats&oils, pr	0.3	0.2	0.2	0.3	0.4	0.2	0.2	0.3
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: Authors' calculations based on data from databases of the SORS, Belgrade

In the structure of the value of import of the agrarian sector, the most significant share during whole analysed period had division 05-Vegetables and fruit, about 20-26% (Table 5). According to the share in the total Serbian import follow 07-Coffee, tea, cocoa, spices, about 15% and then division 09-Miscellaneous edible products and preparations (about 10%).

There is no significant diversification of products in the structure of the agrarian exports from Serbia to the EU-27, dominant are primary products and products with lower levels of processing that are used as inputs in the food industry (fruits and vegetables, grains, sugar), while the export of more sophisticated products with higher added value is small. This can be explained with non-harmonized standards. In the structure of Serbian agrarian imports from the EU-27, in the early years of the analysis, the dominant position had miscellaneous edible products and preparations, but their share decreased and starting from 2007 vegetables and fruit takes precedence.

Table 5: Structure of import of Serbian agrarian sector in period 2004-2011 (%)

SITC divisions	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**
00-Live animals	0.5	1.1	0.6	1.0	0.8	1.4	0.7	1.2
01- Meat and prepar.	2.0	2.0	1.9	2.3	3.5	4.5	3.9	4.1
02-Dairy prod&eggs	2.1	1.6	1.3	2.4	2.7	2.1	4.0	4.1
03- Fish and prepar.	5.8	6.9	6.8	6.4	6.2	7.5	6.6	6.9
04- Cereals& prepar.	8.8	5.4	5.7	5.9	6.1	5.7	5.1	6.0
05-Vegetables&fruit	17.5	20.8	21.2	26.5	25.3	24.2	21.8	21.5
06-Sugars and honey	3.4	5.3	4.1	4.3	3.6	3.4	2.3	2.8
07-Coffee, tea, cocoa	14.3	15.6	14.5	15.5	15.9	14.2	15.3	15.2
08-Feeding stuff for an.	8.2	6.4	6.4	5.5	5.5	3.9	4.2	3.8
09-Miscell. edible pr.	10.6	11.6	9.3	8.5	8.0	8.0	9.1	9.5
11-Beverages	4.4	3.9	6.7	7.1	6.2	6.3	5.4	5.8
12-Tobbaco&manuf	14.5	11.1	11.0	3.8	3.5	5.4	8.8	8.3
21-Hides, skins,furskins	0.3	0.2	0.1	0.2	0.6	0.7	1.3	1.6
22-Oil-seeds&ol.fruits	2.0	1.8	2.4	2.9	3.6	4.8	4.6	2.9
29-Crude an&veg. m	3.7	3.9	3.6	4.3	4.2	3.5	3.5	3.1
41-Animal oils & fats	0.1	0.2	0.2	0.2	0.3	0.4	0.3	0.3
42-Fix veg fats&oils	1.3	1.7	3.5	2.8	3.4	3.5	2.7	2.6
43-An.or veg fats&oils	0.4	0.5	0.4	0.4	0.5	0.6	0.4	0.3
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: Authors' calculations based on data from databases of the SORS, Belgrade

The structure of the agrarian export from Serbia to CEFTAcountries is more significantly diversified than export to the EU-27, which can be explained by the higher degree of compliance with the standards and requirements of the consumers and market of CEFTA. In the structure of export throughout the period, most represented are cereals, followed by beverages, fixed vegetable fats and oils, crude, and vegetables and fruits. The most significant share in import of agri-food products in Serbia from CEFTA countries, had vegetables and fruit, then beverages, tobacco and tobacco products.

7. Comparative advantages of the Serbian agrarian sector

For the analysis of comparative advantage of sector or particular groups (divisions) of the Serbian agri-food products in the global (world) market and in the markets of key trading partners were used three indicators of RCA. These indicators can be useful to decision-makers, especially for certain segments of public policy, primarily agricultural. It is important to determine which sectors (divisions) of agricultural and food products contribute the most to export (and import), and improve the unfavourable trade deficit and have a comparative advantage in relation to the overall economy of the country, as well as what changes occur in the process of liberalization through integration processes.

7.1. Comparative advantages of Serbian agrarian sector on the global market

For consideration of comparative advantage or position of the Serbian agrarian sector and some divisions – specific groups of product on the world market, we have calculated “original Balassa index” that measures the export of one product of a country related to the total export of the country and the proper performance of the total global export.

Table 6: Indexes of revealed comparative advantage-RCA_1 of individual SITC division of the Serbian agrarian sector on the global market

SMTK divisions	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**
00-Live animals	0.64	0.42	0.28	1.60	4.52	4.66	5.44	5.36
01- Meat and pr	0.89	0.99	1.76	1.60	1.02	0.86	0.77	0.64
02-Dairy pr&eggs	0.50	0.57	1.58	1.21	1.29	1.51	1.43	1.57
03- Fish and pr.	0.02	0.07	0.07	0.06	0.11	0.09	0.06	0.06
04- Cereals& pr.	3.70	5.65	6.59	4.72	3.37	5.69	6.77	6.35
05-Veget.&fruit	5.95	5.16	4.69	4.96	3.89	4.03	4.39	4.74
06-Sugars&honey	20.70	16.44	10.31	10.99	7.49	6.52	7.14	5.14
07-Coffee,tea, coc	2.52	2.30	2.17	2.62	1.81	1.80	1.55	1.25
08-Feeding stuff	1.71	1.38	1.49	2.36	1.82	1.62	1.86	2.19
09-Misc. edible pr.	2.95	2.71	3.27	2.36	2.18	2.27	2.22	2.13
11-Beverages	2.25	2.01	2.85	2.74	3.26	3.66	3.19	3.34
12-Tobbaco&man	0.86	0.33	0.93	1.64	1.91	2.37	2.38	2.21
21-Hides, skins,fur	4.68	4.61	4.25	3.43	3.16	2.89	3.91	4.14
22-Oil-seeds&fruits	0.98	1.15	1.05	0.74	0.61	0.68	1.10	1.30
29-Crude an&veg.	1.75	1.59	1.26	0.97	1.06	1.01	1.01	1.01
41-An. oils & fats	0.61	0.55	0.86	0.63	0.43	0.55	0.51	0.76
42-Fixed veg fats	4.89	2.84	1.32	5.04	4.63	4.22	3.24	3.16
43-An.or veg fats	1.16	0.87	0.72	2.22	1.92	1.31	1.14	1.44

Source: Authors' calculations based on data from databases of the SORS, Belgrade and UN COMTRADE Database

RCA_1 values higher than one in all years of analysis and revealed comparative advantage in the global market for export of the Serbian agrarian sector has nine commodity divisions: 04-Cereals and cereal products; 05-Vegetables and fruits; 06-Sugars, sugar preparations and honey; 07-Coffee, tea, cocoa, spices, and manufactures; 08-Feeding stuff for animals; 09-Miscellaneous edible products and preparations; 11-Beverages, 21-Hides, skins and furskins, raw, and 42-Fixed vegetable fats and oils, crude, refined or fractionated (Table 6). The highest value of the RCA_1 in all but the last year, had the division 06-Sugars, sugar preparations and honey, and the primacy of the 2011 took over the division 04-Cereals and cereal preparations. Regarding the level of comparative advantage behind these two is division 05-Vegetables and fruits.

The lowest index value RCA_1, less than 1 in all years of analysis, which indicates that these Serbian divisions are uncompetitive on (global) world market are: 03-Fish and preparations and 41-Animal oils and fats.

7.2. Comparative advantages of Serbian agrarian sector on markets of most important trading partners

In order to perceive the comparative advantage of the agrarian sector, or particular groups of agri-food products from Serbia compared to the total economy exchange (all countries), as well as in the markets of the most significant trading partners, we determined indexes of revealed comparative advantage RCA_2 and RCA_3.

Measured by two indicators (RCA_2) and (RCA_3) revealed comparative advantage in trade with all trading partners (total agrarian export and import of Serbia), have six commodity divisions: 01-Meat and meat preparations; 04-Cereals and cereal preparations; 05-Vegetables and fruits; 06-Sugars, sugar preparations and honey; 11-Beverages and 21-Hides, skins and furskins, raw. In addition to these agricultural and food products, according to the values of calculated index RCA_3, comparative advantages in relation to the overall economy (but slightly below) has six more divisions: 02-Dairy products and birds' eggs; 09-Miscellaneous edible products and preparations; 22-Oil seeds and oleaginous fruits; 29-Crude animal and vegetable materials; 42-Fixed vegetable fats and oils, crude, and 43-Animal or vegetable fats and oils, processed (Table 7).

The highest level of comparative advantage (according to both indicators: RCA_2 and RCA_3) in the first year of the analysis had the division 06-Sugars, sugar preparations and honey, which used in best manner the privileges of the EU market, while in all other years the highest level of competitiveness achieves division 04-Cereals and cereal preparations.

The lowest RCA_2 value, less than 0 or RCA_3 less than 1 in all years of analysis, are characteristic for the divisions 03-Fish and preparations, indicating that there are no comparative advantage in trade of these products in relation to the overall economy of Serbia with all trading partners. Measured by the index RCA_2 this statement applies also to section 07-Coffee, tea, cocoa, spices, and manufactures.

RCA_3 index was used for the determination of revealed comparative advantages of the Serbian agri-food sector in trade with major trading partners, the EU-27 and CEFTA, as well as its members.

Table 7: Indexes of revealed comparative advantage – RCA_2 and RCA_3 for SITC division of the agrarian sector in Serbia trade with all trading partners

SITS division	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**
RCA_2								
00-Live animals	-0.23	-0.55	-0.44	0.35	0.75	0.60	0.77	0.64
01- Meat and pr	0.14	0.37	0.64	0.67	0.39	0.18	0.12	0.01
02-Dairy pr&eggs	-0.36	-0.03	0.57	0.46	0.41	0.51	0.18	0.22
03- Fish and pr.	-0.98	-0.92	-0.91	-0.88	-0.82	-0.86	-0.90	-0.91
04- Cereals& pr.	0.16	0.63	0.70	0.75	0.68	0.79	0.81	0.79
05-Veget.&fruit	0.23	0.24	0.26	0.36	0.26	0.30	0.34	0.37
06-Sugars&honey	0.70	0.62	0.64	0.65	0.63	0.65	0.77	0.65
07-Coffee,tea, coc	-0.52	-0.46	-0.38	-0.27	-0.35	-0.26	-0.37	-0.43
08-Feeding stuff	-0.55	-0.45	-0.36	0.14	0.07	0.23	0.19	0.32
09-Misc. edib pr.	-0.42	-0.35	-0.09	0.04	-0.01	0.03	-0.11	-0.15
11-Beverages	0.11	0.26	0.24	0.43	0.50	0.51	0.47	0.45
12-Tobbaco&man	-0.88	-0.92	-0.76	-0.04	0.08	0.02	-0.31	-0.33
21-Hides, skins,fur	0.72	0.79	0.89	0.84	0.51	0.31	0.28	0.23
22-Oil-seeds&fruits	-0.33	-0.08	-0.23	-0.26	-0.26	-0.35	-0.14	0.20
29-Crude an&veg.	-0.29	-0.22	-0.23	-0.24	-0.22	-0.15	-0.23	-0.14
41-An. oils & fats	-0.26	-0.41	-0.08	-0.06	-0.34	-0.41	-0.33	-0.16
42-Fixed veg fats	0.67	0.49	-0.11	0.59	0.57	0.53	0.63	0.68
43-An.or veg fats	-0.15	-0.29	-0.24	0.15	0.14	-0.11	-0.05	0.34
RCA_3								
00-Live animals	1.90	0.68	0.79	4.55	14.91	7.41	13.12	7.66
01- Meat and pr	4.03	5.05	9.24	10.85	5.01	2.74	2.16	1.74
02-Dairy pr&eggs	1.44	2.20	7.48	5.86	5.29	5.80	2.42	2.65
03- Fish and pr.	0.03	0.10	0.10	0.13	0.22	0.14	0.09	0.08
04- Cereals& pr.	4.23	10.32	11.64	15.15	11.80	16.02	15.78	14.65
05-Veget.&fruit	4.92	3.81	3.48	4.62	3.77	3.55	3.40	3.67
06-Sugars&honey	17.50	10.07	9.19	10.07	9.67	8.94	12.97	7.92
07-Coffee,tea, coc	0.97	0.86	0.92	1.24	1.07	1.12	0.77	0.67
08-Feeding stuff	0.88	0.88	0.96	2.89	2.55	3.02	2.46	3.24
09-Misc. edib pr.	1.25	1.12	1.70	2.34	2.19	2.00	1.35	1.26
11-Beverages	3.84	3.98	3.36	5.42	6.60	5.85	4.62	4.45
12-Tobbaco&man	0.20	0.10	0.28	2.00	2.58	1.98	0.88	0.85
21-Hides, skins, fur	18.54	19.89	34.39	24.55	7.29	3.56	2.99	2.69
22-Oil-seeds&fruits	1.55	1.99	1.29	1.29	1.30	0.92	1.27	2.55
29-Crude an&veg.	1.69	1.50	1.29	1.34	1.41	1.40	1.06	1.27
41-An. oils & fats	1.81	0.97	1.75	1.92	1.09	0.79	0.86	1.23
42-Fixed veg fats	15.26	6.84	1.63	8.52	7.99	6.24	7.29	8.80
43-An.or veg fats	2.24	1.29	1.26	2.93	2.94	1.51	1.53	3.40

Source: Authors' calculations based on data from databases of the SORS, Belgrade

Table 8: Indexes of revealed comparative advantages-RCA_3 of some SITC divisions of agrarian sector of Serbia in foreign trade with EU-27

SITC divisions	2004	2005	2006	2007	2008	2009	2010	2011
00-Live animals	1.46	0.48	0.10	0.04	0.09	0.05	0.05	0.06
01- Meat and pr	1.12	1.24	1.58	2.31	1.12	0.46	0.38	0.27
02-Dairy pr&eggs	0.01	0.00	0.06	0.00	0.00	0.05	0.03	0.03
03- Fish and pr.	0.01	0.01	0.02	0.00	0.00	0.01	0.02	0.01
04- Cereals& pr.	1.85	6.22	9.79	11.70	6.76	24.56	21.99	14.44
05-Veget.&fruit	10.30	8.78	7.74	10.44	8.41	8.02	6.33	6.44
06-Sugars&honey	24.51	11.96	12.31	21.69	24.46	16.42	14.80	10.98
07-Coffee,tea, coc	0.57	0.57	0.43	1.06	1.03	1.02	0.45	0.36
08-Feeding stuff	1.82	0.89	0.56	1.92	1.75	2.03	1.35	1.67
09-Misc. edib pr.	0.37	0.23	0.30	0.56	0.54	0.55	0.40	0.36
11-Beverages	0.57	0.50	0.32	0.80	1.02	1.48	0.98	1.19
12-Tobbaco&man	0.21	0.09	0.20	1.31	1.05	1.83	1.05	1.18
21-Hides,skins,fur	4.05	2.11	2.03	18.77	5.69	2.91	1.59	1.22
22-Oil-seeds&fruits	4.73	4.14	2.61	2.31	7.13	6.94	3.43	17.40
29-Crude an&veg.	0.90	0.59	0.58	0.49	0.38	0.50	0.43	0.56
41-An. oils & fats	0.97	0.52	0.39	0.96	0.48	0.16	0.37	0.83
42-Fixed veg fats	7.16	3.52	0.64	6.00	7.57	9.59	9.49	10.06
43-An.or veg fats	0.01	0.03	0.01	0.00	0.01	0.00	0.11	0.11

Source: Authors' calculations based on data from databases of the SORS, Belgrade

Values of this index for the EU market (in all years of analysis) are greater than 1 for five divisions: 04-Cereals and cereal preparations; 05-Vegetables and fruits; 06-Sugar, sugar preparation and honey; 21-Hides, skins and furskins, raw; and 22-Oil seeds and oleaginous fruits (Table 8). The highest values of RCA_3 had division 06-Sugar, sugar preparations and honey until 2009. In terms of competitive advantage follows division 04-Cereals and cereal preparations with increasing values of the index in the specified period. All these groups of agricultural and food products, under the conditions of liberalization, experienced the decrease or reducing the comparative advantages of Serbian agricultural and food products on the EU market (excluding sections 22-Oil seeds and oleaginous fruits).

Seven SITC division of agrarian products from Serbia that do not have a comparative advantage in EU market, throughout the period of analysis, are: 00-Live animals (except in 2004), 02-Dairy products and birds' eggs; 03-Fish and preparations; 09- Miscellaneous edible products and preparations; 29-Animal and vegetable raw materials; 41-Animal oils and fats, and 43-Animal or vegetable fats and oils, processed.

Table 9: Indexes of revealed comparative advantages-RCA_3 of SITC divisions of agrarian sector of Serbia in foreign trade with CEFTA-2006

SITC divisions	2004	2005	2006	2007	2008	2009	2010	2011
00-Live animals	2.03	118.75	11.24	89.14	24.21	5.79	11.82	7.31
01- Meat and pr	3.93	7.21	8.66	6.55	2.67	1.71	1.44	1.12
02-Dairy pr&eggs	1.54	3.10	8.90	5.38	5.48	3.30	1.89	2.51
03- Fish and pr.	0.03	0.15	0.15	0.19	0.44	0.21	0.17	0.17
04- Cereals& pr.	5.07	7.30	5.46	8.79	7.01	5.36	5.74	6.55
05-Veget.&fruit	0.84	0.71	0.73	0.69	0.45	0.46	0.46	0.53
06-Sugars&honey	1.23	0.90	0.78	0.52	0.64	1.34	7.13	2.12
07-Coffee,tea, coc	3.01	2.46	2.64	2.33	1.77	2.20	2.09	2.26
08-Feeding stuff	2.11	1.60	0.99	2.76	1.49	3.74	2.20	3.43
09-Misc. edib pr.	1.32	1.41	2.17	2.32	2.20	2.53	1.41	1.30
11-Beverages	1.84	2.58	1.40	1.83	2.23	2.22	2.23	2.18
12-Tobbaco&man	0.17	0.08	0.23	0.64	0.97	0.61	0.44	0.55
21-Hides,skins,fur	10.65	25.69	76.98	7.20	1.88	1.22	2.30	1.57
22-Oil-seeds&fruits	1.64	0.80	0.46	0.52	0.20	0.17	0.36	0.24
29-Crude an&veg.	4.56	5.56	3.12	3.66	4.19	6.14	4.93	3.75
41-An. oils & fats	1,871.68	97.77	45.89	9.68	2.86	5.76	3.42	3.22
42-Fixed veg fats	121.85	226.77	2.69	16.82	7.28	2.60	4.61	6.48
43-An.or veg fats	6.10	9.62	40.25	1,123.00	60.70	56.40	123.84	-

Source: Authors' calculations based on data from databases of the SORS, Belgrade

Serbian agricultural and food products have a significantly higher level of comparative advantage in relation to the overall economy (RCA_3) on CEFTA then on the EU market. This is understandable since most of the present members of CEFTA countries accounted for one economy, and that they all have the approximate level of economic development, achieved GDP per capita, similar spending habits and standards for agricultural products.

It may be noted that the relatively small number of agrarian divisions-products from Serbia have index RCA_3 less than one or the lack of comparative advantage in the CEFTA market during the whole period (Table 9). These are the divisions: 03-Fish and preparations; 05-Vegetables and fruits, 12-Tobacco and tobacco preparations, and 22-Oil seeds and oleaginous fruits. In addition to these, division 06-Sugar, sugar preparations and honey expressed a lack of competitiveness in the CEFTA market in period 2005-2008.

All other SITC divisions or groups of agricultural and food products have a significant level of comparative advantage in the CEFTA market and RCA_3 indexes higher than 1.

For consideration of revealed comparative advantages of certain groups of agricultural and food products from Serbia compared to the total economy in the markets in neighbouring countries (member of CEFTA-2006) and direct competitors to our agrarian products, we calculated RCA_3 indexes for these countries (except for Albania and Moldova for which the volume of trade with Serbia is very small).

In Bosnia and Herzegovina, which is the most important export destination for products of the Serbian agrarian sector within CEFTA members, the majority of the divisions of agrarian sector of Serbia (almost everyone) has a comparative advantage. RCA_3 index value less than 1, for the entire period of analysis, had only division 03-Fish, crustaceans, molluscs and preparations which indicates the lack of comparative advantages of these products.

On the Montenegro market most of the commodity divisions of agri-food products from Serbia have comparative advantages, while a small number of divisions that don't have comparative advantages through the entire period. They are: 03-Fish, crustaceans, molluscs and preparations fish products, 11-Beverages, and 21-Hides, skins and furskins, raw. Division 41-Animal oils and fats recorded in some years lack of comparative advantage, while division 05-Vegetables and fruits, in recent years has lost comparative advantage in the market of Montenegro.

In the Macedonian market there are a significant number of divisions of agri-food products from Serbia that have lost revealed comparative advantage in recent years, after more market liberalization. In addition to the divisions: 05-Vegetables and fruits, 11-Beverages, and 12-Tobacco and tobacco preparations, which did not have comparative advantages during the entire period, these are: 00-Live animals; 01-Meat and meat preparations; 06-Sugar, sugar preparations and honey, and 22-Oil seeds and oleaginous fruits. Other departments of the agricultural sector are characterized by a comparative advantage in the Macedonian market, but also with the deterioration of their position under the conditions of liberalization after the signing of CEFTA Agreement.

On the Croatian market, there is generally much lower number of divisions of the agrarian sector in Serbia with revealed comparative advantage, where the values of the calculated index are relatively low, and after signing of the Agreement they are decreasing in significant number of products, which indicates a deterioration of the position of the sector. Only four divisions of the Serbian agrarian sector have revealed comparative advantage during the entire period of analysis ($RCA_3>1$): 04-Cereals and cereal preparations; 05-Vegetables and fruits: then 29-Crude animal and vegetable materials, and 42-Fixed vegetable fats and oils, crude, refined or fractionated. There are four division of the agrarian sector of Serbia that didn't have a comparative advantage in the Croatian market during the entire period of analysis, and they are: 03-Fish and preparation, 09-Miscellaneous edible products and preparations; 12-Tobacco and tobacco preparations, and 22-Oil seeds and oleaginous fruits. It can be noted that the majority of these products are of higher stage of processing which indicates the achieved level of development and the lack of competitiveness of agro-industry. Hence, it is important to focus efforts to increase the competitiveness of the products of the agrarian sector with higher level of processing, or on products with higher value-added.

8. Conclusion

Agrarian sector plays an important role as a balancing factor of the trade balance, since the share of this sector in Serbia's total exports is growing and exceeding 20% in recent years. The liberalization of the market, which takes place in the integration process that include Serbia (the membership in the WTO and the EU), led to a certain change in the regime, scope and structure of export and import, the main trading partners and positions, and the comparative advantage of the agrarian sector. According to the representation in the structure of export of agrarian products from Serbia, during the analysed period, three divisions stand out: cereals and cereal preparations, vegetables and fruit, and sugar, sugar preparations and honey. Most of the value of agrarian export (about 50%) is focused on the EU market and 40% in the CEFTA-2006; while about 45% of the value of agricultural import comes from the EU, and about one-fourth from CEFTA members. The structure of the agrarian export from Serbia into CEFTA countries is significantly more diversified than export to the EU, which can be explained by the higher degree of compliance with the requirements of the consumers, and the applicable standards of the countries of the region.

Revealed comparative advantage in the global market in export of agrarian products from Serbia and RCA_1 index higher than 1 in all years of the analysis had nine divisions. The highest value of the index RCA_1 had a division sugar, sugar preparations and honey, and the primacy in 2011 took over the division cereals and cereal preparations; followed by vegetables and fruits.

The lowest value of RCA_1 index less than 1, in all the years of observation, which indicate that these Serbian divisions are uncompetitive in the (global) world market, had the divisions: fish, crustaceans, molluscs and preparations, and animal oils and fats.

These findings are mostly confirmed by the other two calculated indexes of revealed comparative advantage (RCA_2 and RCA_3) for some SITC divisions of Serbian agrarian sector in trade with all trading partners.

The value of RCA_3 index calculated for some individual divisions of the Serbian agrarian sector in the markets of the EU, CEFTA and its members, indicate that Serbian agrarian sector has a comparative advantage in the markets of Montenegro, Bosnia and Herzegovina, and Macedonia, while show no significant comparative advantage in most group / divisions of agri-food products in the markets of Croatia and the EU. A large number of commodity divisions of agricultural and food products have, under the conditions of liberalization, experienced decrease of the comparative advantage (relative to the entire economy) in the EU and individual member states of CEFTA.

References

1. Balassa B. (1965): Trade Liberalisation and "Revealed" Comparative Advantage. The Manchester School of Economic and Social Studies, vol. 33, no. 2, pp. 99-123.
2. Bojnec Š. (2001): Trade and Revealed Comparative Advantage Measures-Regional and Central and East European Agricultural Trade. Eastern European Economics, vol. 39. no. 1, pp. 72-98.
3. Bojnec Š., Fertö I. (2007): Comparative Advantages in Agro-Food Trade of Hungary, Croatia and Slovenia with the European Union. Discussion Paper No. 106, IAMO, Halle, Germany.
4. Fertö I., Hubbard J. L. (2002): Revealed Comparative Advantage and Competitiveness in Hungarian Agri-Food Sectors. Institute of Economics Hungarian Academy of Sciences Discussion Papers, 2002/8, Budapest.
5. Greenaway D. and C. Milner (1993): Trade and Industrial Policy in Developing Countries: A Manual of Policy Analysis. The Macmillan Press, esp. Part IV Evaluating Comparative Advantage, pp. 181-208.
6. Jefferson Institute (2003): Konkurentnost privrede Srbije, Beograd.
7. Milanović M., Stevanović S. (2012): Comparative advantages of Serbia's agrarian export in Ex-Yu and other neighboring markets. Sustainable agriculture and rural development in terms of the Republic of Serbia strategic goals realization witin the Danube region, Institute of Agricultural Economics, Belgrade, pp. 1341-1358.
8. Utkulu U., Seymen, D. (2004): Revealed Comparative Advantage and Competitiveness: Evidence for Turkey vis-avis the EU 15. The European Trade Study Group-ETSG 6th Annual Conference, Nottingham.
9. Vollrath T. L. (1991): A Theoretical Evaluation of Alternative Trade Intensity Measures of Revealed Comparative Advantage. Weltwirt-schaftliches Archiv, Vol. 127, pp. 265-280.
10. Dimelis S., Gatsios K. (1995): Trade with Central and Eastern Europe: The Case of Greece. In: Fainiand R., Portes R. (eds.), EU Trade with Eastern Europe: Adjustment and Opportunities, London, CEPR.