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Role and Significance of Agriculture and Food Industry Exporting in the Development of Serbia

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Abstract

This paper analyzes agriculture and food industry as key sectors of export in Serbia. The goal of the research is to point to the role and the significance of export of agriculture and food industry in the development of Serbia. The results show that the development strategy of Serbia must be based on the increase of export of agricultural and food products (more intense production) and the change of production structure in accordance with demand (especially with the demand for environmentally safe foods), with a higher level of finalization, in order to increase competitiveness and add value. Published data of the Statistical Office of the Republic of Serbia was used in the paper, and the charts represent the derivatives the authors prepared based on these original data. Research period included 2000 to 2015. The goal of the research of role and significance of export of agriculture and food industry in the development of Serbia was achieved by application of descriptive and comparative analysis, using statistical and mathematical method – linear trend of export and import of economy and agricultural and food products.

Key words: commodities structure of export, regional distribution of export, competitiveness

Introduction

The Republic of Serbia is relatively rich in agricultural resources and agriculture represents one of the most significant economic activities. Namely, the results of the Census from 2011 show that the share of agricultural population in total population was 6.8%, where active farmers amounted to 9.1% of total active population in Serbia (Statistical Office of the Republic of Serbia, 2012).

There are 0.7 hectares of total agricultural, that is, 0.46 hectares of used land in Serbia per capita, which is twice the average of EU member countries (0.33 hectares of agricultural and 0.20 hectares of used or plowed land per capita) (Mitrović, 2016 b). In accordance with Census from 2012, there are 631.552 farms in Serbia, 99.5% of which are family owned farms, and only 0.5% company farms or entrepreneurs (Statistical Office of the Republic of Serbia, 2013). Farms up to 5 hectares in size dominate, amounting to 480.775 individual farms, which is 76% compared to the total number of farms, with the lowest number of farms from 50 to 100 hectares in size (0.7%) and over 100 hectares (0.2%). Regarding food industry, it comprises a large number of small and a small number of large companies. Available capacities are not used to the full extent.

Almost all large companies are privatized (sugar plants, dairy factories, confectionary, oil plants). Particular issue is that a small number of slaughter houses owns export licenses and modern capacities for fruit and vegetables storage and processing are lacking. It should be stated that the share of agriculture and food industry in the GDP has reduced since 2000, so, the share of agriculture dropped from 18.3% to 6.8% in 2015, while the share of food industry dropped from 6.7% to 4.2% (Mitrović, 2016 a). In spite of the reduction of share in GDP, agriculture is still "a significant contribution to other economic activities of Serbian economy that are directly dependent on the raw material from agriculture, followed by the industry of inputs for agriculture, as well as the accompanying service industry. If comparative analysis with other European counties in transition is to be performed, the share of agriculture in the total employment of Serbia is still relatively high" (Cvijanović et al., 2013). Namely, the share of agriculture in total employment in 2015 was 19.4% (Statistical Office of the Republic of Serbia, 2017). Agriculture and food industry provide a special contribution in the foreign trade of Serbia. Namely, in 2015 the agricultural and food products comprised 21.7% of the total value of export from Serbia, and the Serbian agricultural and food industries are among a small group of industries that operated with surplus in foreign trade (1190 million US$) and a high level of coverage of import with export (170%) (Statistical Office of the Republic of Serbia, 2017).

However, the results of the agricultural production are inadequate related to the current conditions, therefore, they are not completely in function of more dynamic and export-focused development of the agricultural production. Thus, in order for the Serbian agriculture to improve export, it must continuously improve its competitiveness related to price and quality.

Particularly, production structure should be altered focusing on the livestock breeding, development of production based on environmental principles and faster application of product quality standards in the food industry (ISO, HACCP and GLOBALGAP) and healthy food, i.e. the protection of health of consumers. In this context, we shall review the performances of commodity and regional structure of export of agricultural and food product of Serbia below.

Goal of the Paper and Methodology Used

The goal of this paper is to point out the significance and role of export of agriculture and food industry in the development of Serbia and seeking solutions for its improvement and increase, since the results adequate to current conditions and expectations are not achieved. Research results related to the contribution of export of agriculture and food industry in the development of Serbia are based on relevant data from processed area and taken from the electronic data base of the Statistical Office of the Republic of Serbia. The graphs are a derivative prepared by authors based on the original data of Statistical Office of the Republic of Serbia.

The goal of research of significance and role of export of agriculture and food industry in the development of Serbia was accomplished by the application of descriptive and comparative analysis, using statistical and mathematical method – linear trend of export and import of economy and agriculture and food industry.

Research Results

Performance of Commodities and Regional Structure of Agriculture and Food Industry Export of Serbia

The characteristic of Serbia is that, owing to its foreign trade, it receives significant income from export of agricultural and food products.

Namely, since 2005, Serbia is the net exporter of agricultural and food products. Actually, foreign trade balance of the Serbian agriculture is in surplus (which was not the case in the former SFRY) and for the last couple of years the export of agricultural and food products shows a moderate growing trend.

Having in mind that the agriculture is stated as the strategic economic sector in the overall official development strategies of Serbian economy, the imperative for the future must be the growth of export of agricultural and food products not only for the sake of agriculture, but for other industries as well. This is why the increase of export demands a complex approach to this issue.

Primarily, this includes the increase of efficiency of our agriculture, change of the production structure of agriculture (livestock breeding 33%, crops 67%) (Statistical Office of the Republic of Serbia, 2015), that would incline to the structure of EU member states (livestock 70%, crops 30%). This would significantly improve competitiveness conditions, productivity and added value of our agricultural and food products on the EU market, where the export of livestock breeding products is not satisfactory (Radojević, 2008).

These data present the urgency of resolving the issue of Serbian agriculture. Namely, the productivity of our agriculture is better only compared to Poland. Added value per employee in the Serbian agriculture is 30.6 times lower than the one in Slovenia and 4.3 times lower than EU average (Savić et al., 2016). Official statistics on the volume and structure of export of agricultural and food products are presented in the export of dominant raw material (grains and sugar), that is, the products of lower processing level (*Table 1*), which has a negative impact on the competitiveness of Serbian agricultural production, i.e., agriculture, and added value produced from this economic activity. It is clear that significant increase of share of the agricultural and food products in the total export was recognized after 2009, therefore, Serbia, in the foreign trade of agricultural and food products receives significant surplus, that was approximately one billion dollars in 2010, to reach over one billion USD in 2011. The largest export of agricultural and food products was accomplished in 2014 and amounted to 3,113 billion USD, which was 1,156 billion USD larger compared to 2009 (Statistical Office of the Republic of Serbia, 2017).

Graph 1 and Table 1 present that in 2015 a drop occurred related to the value of export of agricultural and food products to 2.9 billion USD (which is by 6.6% lower compared to 2014). When it comes to the structure of export in 2015, we can see that food had the largest share that is 71.8% of agricultural products export, followed by drinks and tobacco 15.1%, animal and plant oil and fat 6.7% and inedible raw material, except for fuel 6.4%. We have already seen that the agriculture has a share of 21.7% in the total export of Serbia, which points to the comparative advantages of agriculture and production of food in export and slow structural changes in the entire industry. The analysis also shows that the share of import of agricultural and food products in 2015 in the total import was 7.8%.

This means in practice that each fifth dollar in 2015 was made by exporting food, and that each 11th dollar of the total Serbian import is given to the import of agricultural and food products.

Tab. 1. Structure of export of agriculture and food industry of the Republic of Serbia, 2009–2015 (million US$)
Структура извоза пољопривредних и индустријских производа у Републици Србији, 2009-2015 (у мил.US $)

Year	2009	2010	2011	2012	2013	2014	2015
Food and livestock	1509	1768	2092	2095	2097	2367	2088
Livestock	57	67	74	59	47	39	59
Meat and meat products	65	60	59	64	71	147	97
Dairy products and bird eggs	64	69	91	86	83	108	89
Fish, shellfish, mollusks and products	5	4	4	4	5	7	6
Grains and grain based products	477	579	732	835	664	787	640
Fruit and vegetables	452	529	658	539	670	748	764
Sugar, sugar products and honey	159	216	187	195	208	161	114
Coffee, tea, cocoa and products	84	84	85	78	80	87	83
Animal feed (ex. for grained wheat)	62	74	102	132	127	136	110
Different food products	84	87	100	104	143	147	126
Drinks and tobacco	**249**	**232**	**274**	**286**	**320**	**398**	**441**
Drinks	193	177	215	213	214	223	189
Tobacco and tobacco products	56	55	59	73	106	176	251
Raw material, inedible	**64**	**99**	**137**	**129**	**197**	**157**	**186**
Leather and fur raw	14	28	37	39	53	44	35
Oil seed and oil products	23	42	61	58	102	66	118
Animal and plant raw material	27	29	39	33	42	47	33
Animal and plant oil, fat and wax	**135**	**160**	**222**	**215**	**214**	**191**	**195**
Animal oil and fat	2	2	3	3	4	6	2
Solid plant fat and oil processed	116	138	189	184	178	139	150
Animal and plant fat, oil	5	5	9	8	7	6	5
Other unmentioned agricultural and food products	13	16	21	19	25	40	38
Export of agriculture and food products (million US$)	**1957**	**2259**	**2724**	**2726**	**2829**	**3113**	**2909**
Export – total (million US$)	**8344**	**9794**	**11779**	**11228**	**14610**	**14845**	**13379**
Import of agriculture and food products (million US$)	**1079**	**1287**	**1513**	**1595**	**1748**	**1883**	**1711**
Balance of foreign trade agriculture and food industry	**878**	**972**	**1212**	**1131**	**1081**	**1230**	**1198**
Share of agriculture in export (%)	**23.5**	**23.1**	**23.1**	**24.3**	**19.4**	**21.0**	**21.7**

Source: Statistical Office of the Republic of Serbia, Belgrade, Electronic Database, February 2017

If we were to review regional distribution of export of agricultural and food industry (Table 2) we might see that the export into EU-28, CEFTA members and the Russian Federation in 2015 comprises approximately 89.3% of export of this sector (Statistical Office of the Republic of Serbia, 2017).

Tab. 2. Regional Distribution of Export of Agriculture and Food Industry RS 2015
Дистрибуција извоза пољопривредних и индустријских производа по регионима, РС 2015

	All countries (mil. US$)	European Union		CEFTA Countries**		Russian Federation	
		Mil. US$	% tot. export PPI*	Mil. US$	% total export PPI*	Million US$	% total export PPI*
Total export of agriculture and food industry	2909.5	1406.1	48.3	923.4	31.7	270.1	9.3
Food and livestock	**208.8**	**1081.0**	**51.8**	**649.7**	**31.1**	**259.3**	**12.4**
Livestock except for animals from section 03	58.6	0.4	0.6	57.2	97.5	0.0	0.0
Meat and meat products	97.1	4.4	4.5	59.2	60.9	29.4	30.3
Dairy products and bird eggs	89.5	12.2	13.6	51.8	57.9	25.0	27.9
Fish, shell fish, mollusks and products	5.8	2.0	34.6	3.7	63.6	0.0	0.0
Grains and grain based products	639.6	398.9	62.4	226.4	35.4	6.6	1.0
Fruit and vegetables	764.0	464.8	60.8	52.7	6.9	188.7	24.7
Sugar, sugar products and honey	114.2	80.5	70.5	31.0	27.2	0.3	0.3
Coffee, tea, cocoa and products	83.1	18.6	22.3	58.2	70.1	0.8	1.0
Animal feed (except for grained wheat)	109.9	48.5	44.2	51.1	46.5	4.2	3.8
Different food products	126.1	50.9	40.3	58.5	46.4	4.4	3.5
Drinks and tobacco	**440.6**	**86.5**	**19.6**	**160.3**	**36.4**	**6.1**	**1.4**
Drinks	189.1	45.2	23.9	133.0	70.4	4.8	2.6
Tobacco and tobacco products	251.5	41.3	16.4	27.3	10.8	1.3	0.5
Raw material, inedible	**186.1**	**110.3**	59.2	**49.1**	26.4	**4.5**	2.4
Leather and fur raw	35.3	28.2	79.8	6.2	17.6	0.0	0.0
Oil seed and oil products	118.0	64.8	54.9	34.8	29.5	1.0	0.9
Animal and plant raw material	32.9	17.3	52.5	8.1	24.6	3.5	10.6
Animal and plant oil, fat and wax	**195.0**	**128.4**	65.9	**64.3**	33.0	**0.1**	0.1
Animal oil and fat	2,1	1.1	52.3	0.8	38.4	0.1	6.8
Solid plant fat and oil processed	150.2	88.6	59.0	59.6	39.7	0.0	0.0
Animal and plant fat, oil	4.7	3.3	69.6	1.4	29.6	0.0	0.0
Other unmentioned agricultural and food products	37.9	35.4	93.4	2.4	6.4	0.0	0.0

**Agriculture and Food Industry, **Excluding UNMIK Kosovo. Source: Statistical Office of the Republic of Serbia, Electronic Data Base, February 2017*

We must note that Serbia has signed Free Trade Agreements (enabling Serbian producers to export to these countries custom and other duties free, and for some products – beef, sugar and vine, allowed amount is set – quota of import on annual level), with countries stated. Although Serbia signed Free Trade Agreements with EFTA countries, Turkey, Belarus and Kazakhstan, their share in the total export of agricultural and food products is insignificant.

It should be stated that in 2015 the most agricultural and food products were sold on the EU market (48.3%). The most represented agricultural products are fruits and vegetables 33% - raspberry and cherry, frozen (that is, 60% of the total export of fruits and vegetables of Serbia is on the EU market), followed by grains 29% - wheat and corn, mercantile, as well as sugar 5.7% - sugar beet, solid, refined and plant oil 6.3% - sunflower oil, crude and refined, soy oil, crude.

Export to CEFTA countries in 2015 comprised 31.7% of export of agricultural and food products. This is the second largest export market to which Serbia exports, primarily, wheat and wheat products 24.5% (that is, 34.5% of total export of wheat and wheat products is on the CEFTA market), drinks 14.4%, followed by export of processed animal and plant fat and oil 7%, processed meat 6.4%, fish and fish products, coffee, tea, cocoa and spices 6.3%, livestock (largest part) 6.2% and dairy products 5.6%.

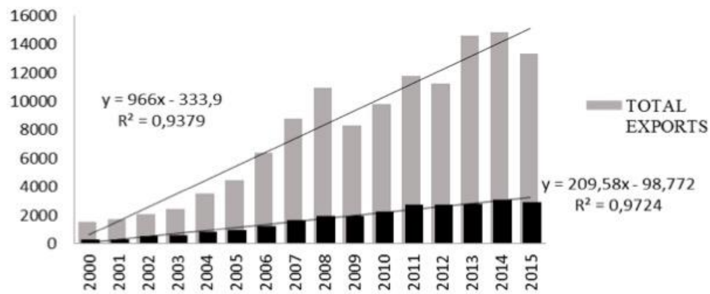
Export to the market of Russian Federation in 2015 amounted to approximately 9.3% of the total export of agricultural and food products. Fruits and vegetables were exported to Russia in the largest part, approximately 70% (that is, 24.7% of the total export of fruits and vegetables of Serbia is to the market of the Russian Federation), and, in smaller amounts, meat and meat products 10% and dairy products 9%.

Regarding fruit, Russia is the largest importer of Serbian apples, grapes, cherries, strawberries and regarding vegetables, fresh tomato, potatoes, cabbage, cucumbers and pickles. It is clear that Serbia has not used all the potential of the trade market with Russia by a long shot. This leads to the conclusion that the geographical distance and height of logistics costs plays a significant role in the foreign trade of Serbia, i.e. the Serbian export (Rapajić and Dabović, 2013). Still, export to the Russian market is expected to intensify. In order to secure the path to increasingly demanding Russian consumer it is necessary to own a quality product and secure sufficient quantities and continuity in delivery (Milenković and Tolvaišis, 2016).

Actually, “even though the quality of product and prices are not an issue for Serbian exporters, a number of issues arise in the domain of larger export of agricultural and food products from Serbia to Russia.

Some of the most significant issues include: 1) low capacity of production and low export offer of Serbia; 2) large number of sub-distributors and high margins (significantly increasing the price of products in retail); 3) administrative tardiness in resolving foreign trade issues; 4) variable and numerous requests Russia imposes on Serbian exporters”(Paraušić et al., 2013).

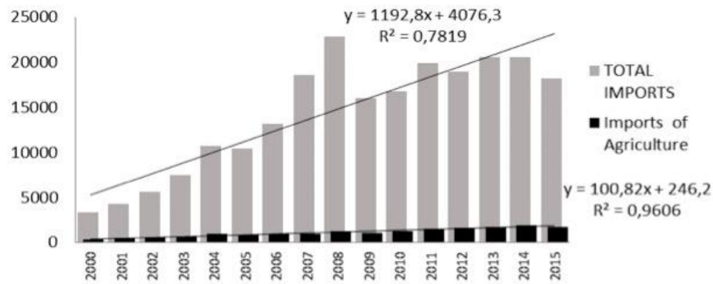
In this sense, it is necessary to comply with determined standards on safety and quality of products. Namely, “reaching standards of developed countries in the production of healthy and safe food – GLOBALGAP, HACCP, HALAL, KOSHER leads to the improvement of export performances of the Serbian agriculture and food industry. Serbia, compared to Europe and the world has low share in available capacities for agricultural production and the volume of production of agricultural and food products. This shows that the export orientation and recognition of Serbian agriculture and food products on the foreign market cannot be secured by quantity, but mostly quality i.e. health and safety and competitiveness in prices of such products” (Veljković and Ševarlić, 2010).



Graph 1. Linear Trend of Export
Линеарни тренд извоза

As Graph 1 shows, the trend given explains the majority of the variation, that is, it is well adjusted to the occurrence. Namely, the dynamics of movement of total export and import of agricultural and food products is given by linear trend. We notice the growing trends with total import and export of agricultural and food products, with a high determination coefficient. Thus, with total import it is R^2=0.9379, while with export of agricultural and food products the determination coefficient is larger and amounts to R^2=0.9724.
However, regarding the dynamic of trend movement of total import (Graph 2.), we can see that the linear trend shows lower part of variations, namely that linear trend is lower adapted to dynamic of future movement.

That is shown by the determination coefficient R^2=0.7819. However, the import of agricultural food product has trend that is well adapted to phenomenon because the determination coefficient is larger and it amounts R^2=0.9606.



Graph 2. Linear Trend of Import
Линеарни тренд увоза

Based on this data we can conclude that the import of agricultural and food products significantly affects the total export of the Republic of Serbia.

Conclusion

Since 2005 Serbia has had a constant surplus in the foreign trade of agricultural and food products. Share of agricultural and food products in the total export of Serbia is relatively high and stable (except for 2008 – 17.8%) and is stabilized at 22%, with import at approximately 8%. Research has also shown that each 5th dollar in 2015 was made by food export and that each 11th dollar from the total Serbian import was given for agricultural and food products. For the purpose of survival and significant development of the Serbian agriculture, level of food competitiveness must be improved. Actually, in this sense, it is necessary to comply with market demands regarding continuity and quality of food export.

Serbia has adopted significant international standards i.e. quality certificates (ISO, HACCP, GLOBALGAP) in order to acquire more favorable position on the international market. Today, focus on the international market is predominantly on the organic products. Considering the fact that the total demand for environmentally safe food will rapidly grow in the following period, it is an undisputed development chance and possibility to use available potential of Serbia.

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Улога и значај извоза пољопривреде и прехрамбене индустрије у развоју Србије

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Сажетак

У раду се анализирају пољопривреда и прехрамбена индустрија као кључни сектори извоза Србије. Циљ истраживања је да укаже на улогу и значај извоза пољопривреде и прехрамбене индустрије у развоју Србије. Резултати показују да стратегија развоја Србије мора да се заснива на повећању извоза пољопривредно–прехрамбених производа (интезивнијој производњи) и измјени производне структуре у складу са платежном тражњом (посебно са тражњом за еколошки здравом храном), чији би степен финализације био већи, како би се повећала конкурентност и додатна вриједност. У раду су коришћени публиковани подаци РЗС, а графикони представљају дериват који су аутори припремили на бази оригиналних података РЗС-а. Истраживачки период је од 2000. до 2015. године. Циљ истраживања улоге и значаја извоза пољопривреде и прехрамбене индустрије у развоју Србије реализован је примјеном дескриптивне и компаративне анализе, коришћењем статистичко–математичког метода: линеарни тренд извоза и увоза привреде и пољопривредно–прехрамбених производа.

Кључне ријечи: робна структура извоза, регионална дистрибуција извоза, компетитивност

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