Competitiveness of tobacco and tobacco products: the case of Serbia

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Stanislav Zekić
PhD in Agricultural Economics
Institution: University of Novi Sad, Faculty of Economics in Subotica
Address: Segedinski put 9-11, Subotica, Serbia
E-mail: **zekics@ef.uns.ac.rs**

Bojan Matkovski
MSc in Agricultural Economics
Institution: University of Novi Sad, Faculty of Economics in Subotica
Address: Segedinski put 9-11, Subotica, Serbia
E-mail: **bojan.matkovski@ef.uns.ac.rs**

Danilo Đokić
MSc in Agricultural Economics
Institution: University of Novi Sad, Faculty of Economics in Subotica
Address: Segedinski put 9-11, Subotica, Serbia
E-mail: **danilo.djokic@ef.uns.ac.rs**

Žana Kleut
MSc in Agricultural Economics
Institution: University of Novi Sad, Faculty of Economics in Subotica
Address: Segedinski put 9-11, Subotica, Serbia
E-mail: **zana.kleut@ef.uns.ac.rs**

Abstract

The objective of this paper is to find the level of international competitiveness of tobacco and tobacco products of Serbia on the international market, as well as on the markets of the EU (European Union) and the CEFTA (Central European Free Trade Association Agreement) countries. In that context, a development in production and trade performances of tobacco and tobacco products is analyzed. According to the main objective of this paper, a methodological framework is based on the usage of relevant indicators which measure comparative advantages of tobacco and tobacco products and, through correlation analysis, the existence of correlation between obtained indices is identified. A level of specialization with the main trade partners, as well as with the international market, is determined by the level of intra-industry trade. Results of this research show that Serbia has achieved permanent growth of the level of comparative advantages in the analyzed period and that tobacco and tobacco products of Serbia have been well integrated with analyzed markets.

Keywords: Tobacco. Competitiveness. Serbia.

1. Introduction

Despite the fact that tobacco is the main raw material for the production of cigarettes, a product which has side effects on people's health, overall world production of tobacco is permanently increasing. According to the FAO (Food and Agricultural Organization), the world production of tobacco increased by average annual growth rate of 2.88% in the analyzed period 2006-2013, from 6,598,513 tons to 7,435,068 tons. The world largest producer of tobacco is China, where 42.34% of total world production was produced, and it is followed by Brazil and India which produced 12.49% and 9.66% of total world production, respectively. Serbia is on the 46th place of tobacco producers in the world, with average annual production of 8,487 tons and negative average annual rate of -2.46% in the same period (Statistical Office of the Republic of Serbia (SORS), 2016). According to the Law on Tobacco of the Republic of Serbia, the following types of tobacco are produced in Serbia: Virginia, Burley, Oriental, and Semi-Oriental. In 2013, in the structure of tobacco production of Serbia the largest share had Virginia (85.33%), while Burley and Oriental participated with 11.73% and 2.94%, respectively (www.duvan.gov.rs).

As far as tobacco products are concerned, the world cigarette market is becoming more concentrated by company, three largest companies sell close to two-thirds of the world's total and in individual countries the degree of concentration can be much higher (Gijsbert V.L., 2002). On the international market manufacturing of tobacco products is represented by dominance of six companies: China National Tobacco Corporation, Japan Tobacco International, British American Tobacco, Philip Morris International, Altria Group Inc and Imperial Tobacco Group. Three of these largest world companies for manufacturing tobacco products are present in Serbia: Japan Tobacco International (Senta), British American Tobacco (Vranje), Philip Morris International (Niš). Vuković, Mijić and Spahić (2015) analyzed market concentration of manufacturer of tobacco products in Serbia in the period 2010-2013 and results of their research, based on operating revenue as the most referential variable, indicated that the market of manufacturers of tobacco products was highly concentrated and that it was an oligopoly: leading companies dominated in the terms of the value of realized net earnings, equity and number of employees, but in the analyzed period these companies had worse operating results in terms of effectiveness, structure of assets and financial performance. Despite this, according to Gajić and Zekić (2013) the level of capacity

utilization of tobacco manufacturing in transitional period is around or above 50%, which is still significantly below the pre-recession and pre-transition period, but only this part of agri-food sector had tendency of increase of labor productivity. According to these authors, tobacco production and processing is, together with oil and derivatives sector, the segment of the economy that is exposed to the black market to the highest degree, which has the significant impact on its production performance, and on the "filling" of the budget and the settlement of general social needs.

According to Gijsbert V.L. (2002), government in every country faces a dilemma: they have an economic and a social interest in tobacco production because it provides jobs, tax revenue and in some countries earnings from foreign exchange, but government also have a duty to protect their population's health. Treating people for smoking-related illnesses can be costly and because of that government cope with these conflicting pressures by discouraging demand in different ways. Despite this, tobacco production is the subject of subsidizing in many countries, as it was the case in Serbia. Until 2012 tobacco production in Serbia was supported in different ways: premium per kilogram and premium per hectare.

According to Tobacco control scale 2013 in Europe, which analyzed tobacco control activity in 34 European countries using tobacco control scale which quantifies the implementation of tobacco control policies at country level, Serbia was ranked on the 23rd place (Serbia was included in the study for the first time). Tobacco control scale in this research included: price increases through higher taxes on cigarettes and other tobacco products, bans/restrictions on smoking in public and work places, better consumer information, comprehensive bans on the advertising and promoting all tobacco products, direct health warning labels on cigarette boxes and other tobacco products and treatment to help addicted smokers stop, including increased access to medications and general conclusion was that Serbia has high cigarette prices taking into account its affordability and the fact that the biggest priority should be to introduce smoke free legislation in bars and restaurants.

According to data of the Tobacco Atlas (2015), consumption of cigarettes in Serbia is on high level and Serbia is classified in group of 1,500-1,999 cigarettes smoked per person annually. This fact is cause for concern for people’s health, while on the other hand signalizes high demand for tobacco products. The number of factors determines demand for cigarettes in individual countries: price, real income, macroeconomic developments, government efforts to discourage consumption, as well as a range of structural and cultural factors (Gijsbert V.L., 2002).

Bearing in the mind high consumption of tobacco products in Serbia, structural changes during transitional period in sector which manufacture tobacco products, as well as additional liberalization of market as a consequence of trade agreements, in this paper production performances of tobacco and tobacco products, as well as foreign trade performances of this products are analyzed. In this regard, a level of comparative advantages is analyzed using different indices, as well as a level of intra-industry specialization.

2. Theoretical Bckground

Using an index of Revealed Comparative Advantages (RCA), as well as modifications of this index, the number of authors analyzed in their researches the level of comparative advantages for different sectors, divisions and products. In Serbia there are numerous of researches of a level of comparative advantages of agri-food sector, which also analyze tobacco and tobacco products.

Božić and Nikolić (2013b) analyzed the importance of the agricultural sector in the total international trade of Serbia, as well as its comparative advantages on the markets of major trading partners in the period 2004-2011 and results of their research showed that tobacco and tobacco products had low values of comparative advantages, but with permanent increase in the analyzed period. Their research showed that tobacco and tobacco products had higher comparative advantages on market of the EU countries than on market of the CEFTA countries.

Ignjatijević, Čavlin and Đorđević (2014) analyzed the comparative advantages of export of processed food sector in Serbia in order to find the position of Serbian food sector in comparison to the Danube region and to highlight the products that were and will be the main exporting food products of Serbia. Research of these authors included tobacco processed sector and results showed that this sector had not comparative advantages to the markets of Danube region countries.

Birovljev, Matkovski and Ćetković (2015) analyzed effects of agreement of free trade between Serbia and the CEFTA countries on dynamic of comparative advantages of agri-food products in the regional countries, as well as the level of intra-industry trade with these countries. Their analysis included tobacco and tobacco products and results of their research showed that in the analyzed period 2004-2013, Serbia had strong comparative advantages on the market of Montenegro, satisfactory comparative advantages on the market of Bosnia and

Herzegovina, while on markets of Macedonia and Croatia a comparative disadvantage of tobacco and tobacco products was present. According to the CEFTA Agreement, trade of tobacco and tobacco products with Croatia is not duty free, and there were established customs quotas with preferential customs duty rate within the quota on import from Croatia, while on export from Serbia there were not privileges, and exporters of tobacco and tobacco products from Serbia paid high tariffs on export. Analyzing the index of intra-industry trade these authors concluded that for trade of tobacco and tobacco products with Montenegro and Croatia inter-industry trade and a low level of specialization was present, while with markets of Bosnia and Herzegovina and Macedonia values of index of intra-industry trade were higher, so Serbian tobacco and tobacco products market was well integrated with these countries.

3. Materials and Methods

In this paper, the competitiveness of tobacco and tobacco products of Serbia on the international market, as well as on the markets of the EU and the CEFTA countries is analyzed by indicators based on comparative advantages and index of intra-industry trade, traditionally used in economic literature to measure product specialization and competitiveness on the international market.

The original index of Revealed Comparative Advantage (RCA) is set by Balassa (1965):

$$RCA = \frac{\frac{X_{ij}}{X_{it}}}{\frac{X_{nj}}{X_{nt}}}$$

where X represents export, i is a country, j is a commodity, t is a set of commodities and n is a group of exporting countries.

When value RCA>1 the comparative advantages are revealed. The greater value of RCA shows the stronger comparative advantages. A number of modifications of concept of RCA have set since it was first formulated. Vollrath (1991) offered new specification of revealed comparative advantages in the form of Relative Trade Advantage (RTA) which is calculated as a difference between Relative Advantages of Export (RXA) and Relative Advantages of Import (RMA):

$$RTA = RXA - RMA$$

where:

$$RXA = RCA$$

and

$$RMA = \frac{\frac{M_{ij}}{M_{it}}}{\frac{M_{nj}}{M_{nt}}}$$

where M represents import, i is a country, j is a commodity, t is a set of commodities and n is a group of importing countries.

Vollrath, as another two measures of comparative advantages, suggests a logarithm value of RXA (ln RXA) and a Revealed Competitiveness (RC):

$$RC = \ln RXA - \ln RMA$$

When value RC>0, that products have comparative advantages. According to Vollrath, RC is preferable index because of the demand and supply balance included in the index, so it can provide a better picture of the comparative advantages of some products in the analyzed country. In literature, modified indices are preferred to the index proposed by Ballasa because they take into consideration the import and export, which eliminate double counting of country and product and that doubled counting can have influence on falsifies in calculations. These indices have been widely used in literature in great number of empirical studies which analyze the competitiveness of specific sectors or products (Ferto and Hubbard, 2002; Utkulu and Seymen, 2004; Tuna, Georgiev and Nacka, 2013; Božić and Nikolić 2013b; Crescimanno, Galati and Bal, 2014; Ignjatijević, Matijašević and Milojević, 2014).

Following the example of Balance et al. (1987), some statistical tests for examining the extent to which various RCA indices are consistent in their identification of comparative advantages are performed and these tests should examine the extent to which the indices are related to identification of comparative advantages.

Lafay Index (LFI) is used as another measure of comparative advantages (Lafay, 1992):

$$LFI_j^i = 100\left(\frac{x_j^i - m_j^i}{x_j^i + m_j^i} - \frac{\sum_{j=1}^{N}\left(x_j^i - m_j^i\right)}{\sum_{j=1}^{N}\left(x_j^i + m_j^i\right)}\right)\frac{x_j^i + m_j^i}{\sum_{j=1}^{N}\left(x_j^i + m_j^i\right)}$$

where x represents an export, m is an import, i is a country, j is a commodity and N is the number of analyzed items. LFI>0 indicates an existence of comparative advantages and the higher index value indicate the higher level of specialization of the given country in trade in given commodity. A number of authors used LFI for measuring comparative advantages of sector or commodity (Bielik et al., 2013; Smutka et al. 2016; Ignjatijević and Milojević, 2012; Ignjatijević, Čavlin and Đorđević, 2014). The advantage of this index compared to the RCA is better picture of foreign trade performances of the analyzed products or sectors because it considers not only export but also import of the specified products or product groups. The LFI provides the identification of re-export, as well as macro-economic distortions that may affect comparative advantages. It also provides the analysis of the intersectoral trade, although this is not of great importance for this research because the subjects are tobacco and tobacco products only. Consequently, the LFI method fully demonstrates its advantages compared to other methods, since it provides a more complete analysis of the specific positions of individual products within the foreign trade structure of the country.

Grubel-Lloyd index of intra-industry trade (GLIIT) is used for analyzing the significance of intra-industry trade of particular commodity in total trade, between two countries (regions). This index is set by Grubel and Lloyd (1975):

$$GLIIT_j = \left[1 - \frac{\sum_j |X_{ij} - M_{ij}|}{\sum_j |X_{ij} + M_{ij}|}\right] * 100$$

where X represents an export, M is an import, i is a country, j is a commodity.

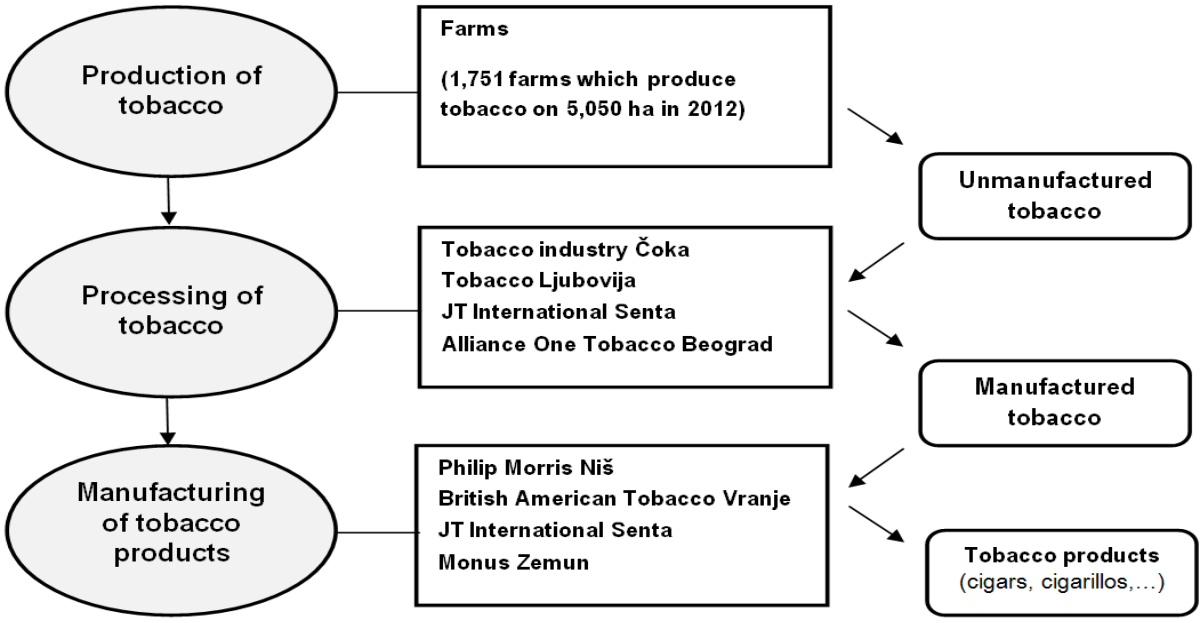
GLIIT analyses the level of integration of some commodity with the particular market, as well as competitiveness of that commodity. If value of GLIIT is close to 100% it means that commodity is well integrated with analyzed market, which indicates opportunities for adaptation to that market with lower costs. GLIIT>15% indicates intra-industry character of trade, which implies that commodity is significantly integrated with particular market. (Bojnec, Majkovič and Turk, 2005; Božić and Nikolić, 2013a).

Using all these indices in this paper, different modification of indices' comparative advantages, as well as level of specialization for tobacco and tobacco products are analyzed. In this paper, a data from SORS and FAO is used. The analysis refers to the period 2006-2013, and verifies the change in the competitive position of tobacco and tobacco products on the global market, as well as on the EU and the CEFTA markets.

4. Results and Discussion

4.1. Production performances of tobacco and tobacco products of Serbia

If markets of raw tobacco and tobacco products are perceived as one market, the key entities can be identified: producers, consumers and government. The role of government is divided on between economic and social interest in tobacco production and protection of population's health. Government can support production and also can establish tax on consumption, which have influence on prices of tobacco and tobacco products. Consumers buy tobacco products and demand for these products are inelastic because tobacco products are a form of addiction and consumers cannot easily withdraw from this habit. Production of tobacco and tobacco products can be divided on three stages: production of tobacco, processing of tobacco, manufacturing of tobacco products (Picture 1).



Picture 1: Production of tobacco and tobacco products in Serbia
Source: Đokić et al., 2015.

Tobacco producers are farms which produce in cooperation with tobacco processors. In the analyzed period the average growth rate of the tobacco production in Serbia was -2.46% (Figure 1). The highest areas under tobacco were sown in 2009 (6,539 ha) when 10,536 tons of tobacco were produced. In the last analyzed year it was produced 7,977 tons of tobacco on 4,939 ha. Average annually growth rate of tobacco production (-2.46%) is a

consequence of the negative contribution of the harvested area (an average annually growth rate -2.77%). In the same period yield had annually growth rate of 0.37% and the highest average yield of tobacco were achieved in 2010 (1.8 t/ha). The largest percentage of tobacco production is located in Vojvodina (64% of the total production in the analyzed period).

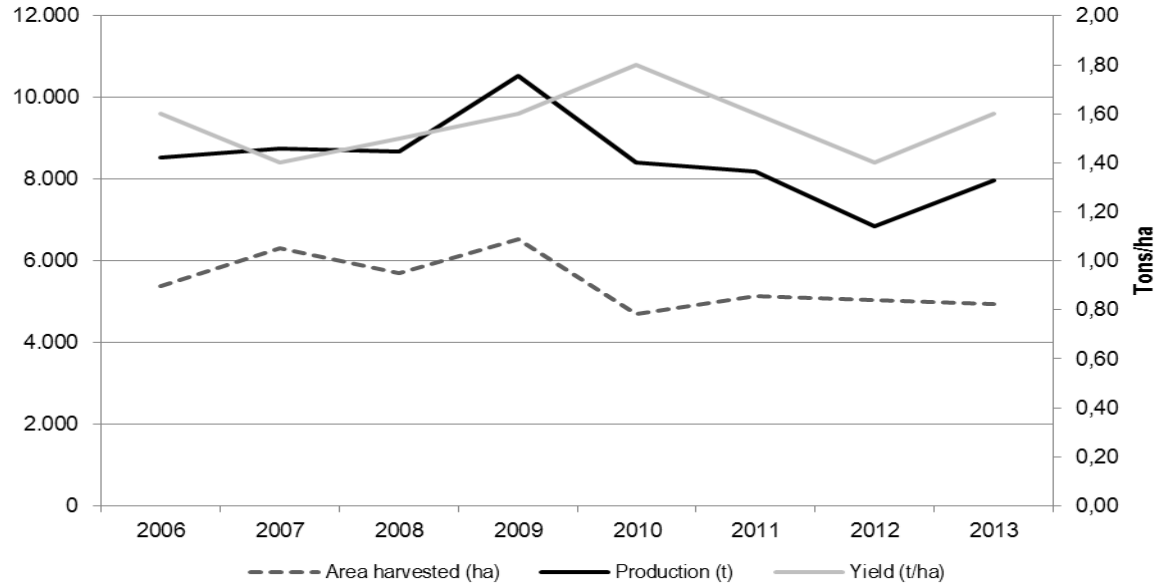


Figure 1: Dynamics of: production, yield and harvested area of tobacco in Serbia in the period 2006-2013.
Source: The authors` calculation on the basis of SORS, 2016.

According to the Census of Agriculture 2012, the production of tobacco is done on 1,751 farms, of which 1,749 are family farms and 2 are legal entities (legal entities have only 40 ha of total 5,050 ha under tobacco). There is almost the same number of farms located in both regions of Serbia. The majority of about 66.31% of tobacco producers are farms smaller than 20 ha (1,595 farms). Number of farms which are specialized only for tobacco production is 585. According to Matkovski and Đokić (2014), from 2006 to 2012 the number of farms decreased drastically, but average size by hectare, as well as production by farm, increased. One of the factors that had influenced on this trend was abolishment of support for tobacco production, which has led to that that farms which recon on support for tobacco production leaved production.

In the last decade agricultural policy supported tobacco production with different measures: premium per kilogram and premium per hectare. According to Matkovski and Đokić (2014), although there were only two ways of supporting tobacco production, their proper systematization is not simple because of different conditions of the realization of right

to the premium, different amounts and different terminology. These authors concluded that goals of support for tobacco production were not sufficiently transparently determined; the National program for agricultural development from 2009 stated that the support for tobacco production until 2009 had only social character and as the main objective is considered increase of the competitiveness of tobacco and harmonization with EU policies. From 2012, there is no special support only for tobacco production in Serbia, but in the last few years producers of tobacco can use input subsidies, as well as subsidies for crops production. From 2015 subsides can use only farms up to 20 ha and in case of tobacco production it is 66.31% of total farms which produce tobacco in Serbia.

According to the Law on Tobacco of the Republic of Serbia, **tobacco processor** is a business entity, which processes tobacco, and which is entered into the Register of tobacco processors. Tobacco processing implies arranging, fermentation, as well as other activities included in the technological procedure of tobacco processing and packaging. The main condition for production of tobacco is that farm has signed a cooperation agreement with a tobacco producer entered into the Register of tobacco producers, and/or a tobacco processor entered both into the Register of tobacco processors and in the Register of tobacco producers, respectively. Additionally, the tobacco processor is required to provide skilled management of the procedure of tobacco production and processing. In Serbia, all tobacco processors also organize tobacco production on farms. The main tobacco processors in Serbia are: Tobacco industry Čoka, Tobacco Ljubovija (a main supplier for Monus Zemun) and Japan Tobacco International Senta (which also manufactures tobacco products). On Serbian market, there are subjects which are not tobacco processors, but they organize tobacco production. Alliance One Tobacco Belgrade has organized production for Philip Morris Niš.

Manufacturer of tobacco products is a business entity which manufactures cigars, cigarillos, cigarettes, smoking tobacco, and other tobacco products. The main manufacturers of tobacco products in Serbia are the world largest multinational companies: Philip Morris, British American Tobacco and Japan Tobacco International. Philip Morris privatized Tobacco industry Niš and that was the most successful privatization in tobacco industry in Eastern Europe, while British American Tobacco privatized Tobacco industry Vranje. Japan Tobacco International purchased Tobacco industry Senta. Among these three companies, manufacturer of tobacco products is also a company Monus from Zemun.

4.2. Foreign trade performances of tobacco and tobacco products of Serbia

In the last decade in Serbia occurred numerous changes in foreign trade flows of tobacco and tobacco products, primary because of integration with the international market influenced by the Preferential Trade Agreements with the EU and the CEFTA countries. According to the Autonomous Trade Measures from 2000, export on the EU market for tobacco and tobacco products is duty-free, while according to the Interim Trade Agreement there was tariff on the import from the EU before 2014 of 10% for unmanufactured and manufactured tobacco and 15% for tobacco products, respectively. According to the Stabilization and Association Agreement, after 2014 tariff quotas for import of tobacco and tobacco products have been established. The CEFTA Agreement established a free trade zone, so trade with these countries is duty-free (Bosnia and Herzegovina, Macedonia, Montenegro, Moldova, Albania, UNMIK), except Croatia. Tariff on import for third countries, with which Serbia does not have free trade agreements, is 10% for unmanufactured and manufactured tobacco and 15% for manufactured tobacco products.

The average share of export of tobacco and tobacco products in total export of agri-food products in the analyzed period was 2.39% and value of the export permanently increased, from 14 thousands in 2006 to 106 million USD in 2013, nominally (Figure 2). The share of the export of manufactured tobacco and tobacco products was larger than unmanufactured tobacco, except in 2006. The most significant markets for export of unmanufactured tobacco were the EU countries (Belgium, Greece, Italy, Netherlands, Germany) and Russia, while the largest share of manufactured tobacco and tobacco products was exported to Montenegro, Hong Kong, Bosnia and Herzegovina, Macedonia and Singapore. In the analyzed period the most significant export destination for tobacco and tobacco products was Montenegro where Serbia exported 20% of total export of tobacco and tobacco products, while in Belgium was exported 16%, in Bosnia and Herzegovina 10%, in Hong Kong 10% and in Macedonia 7%.

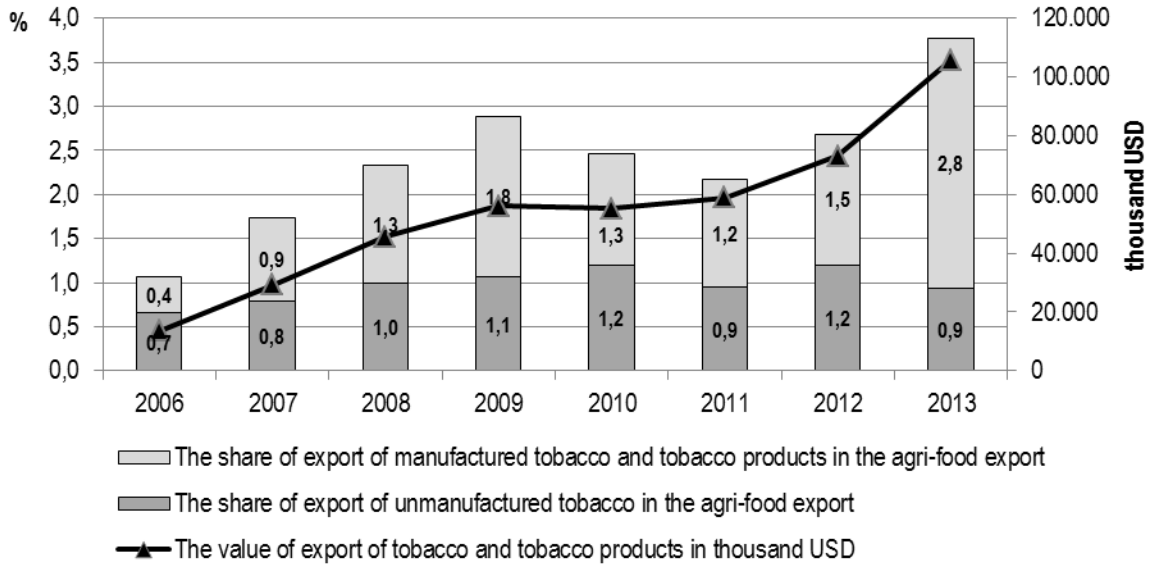


Figure 2: Trends in the export of tobacco and tobacco products of Serbia
Source: The authors` calculation on the basis of SORS, 2016.

In the analyzed period the share of import of tobacco and tobacco products in the total import of agri-food products amounted about 6.94% (Figure 3). There was notable decrease of import of tobacco and tobacco products after 2006, and after 2007 the value of import permanently increased. Import of unmanufactured tobacco significantly increased in 2010, as a consequence of abolishing premium per kilogram as a support to tobacco producers. This change had an effect on increase of prices which resulted in decisions of many manufacturers of tobacco products to import tobacco. Analyzing the regional structure of import of unmanufactured tobacco, it is noticed that largest percentage of these products was imported from the EU countries (Belgium, Germany, Italy, and Greece) and Brazil, while the largest share of manufactured tobacco and tobacco products was imported from Russia, Croatia, Germany, Macedonia and Greece. In the analyzed period, 20% of imported tobacco and tobacco products came from Russia, 17% from Germany, 12% from Croatia, 11% from Belgium and 8% from Macedonia.

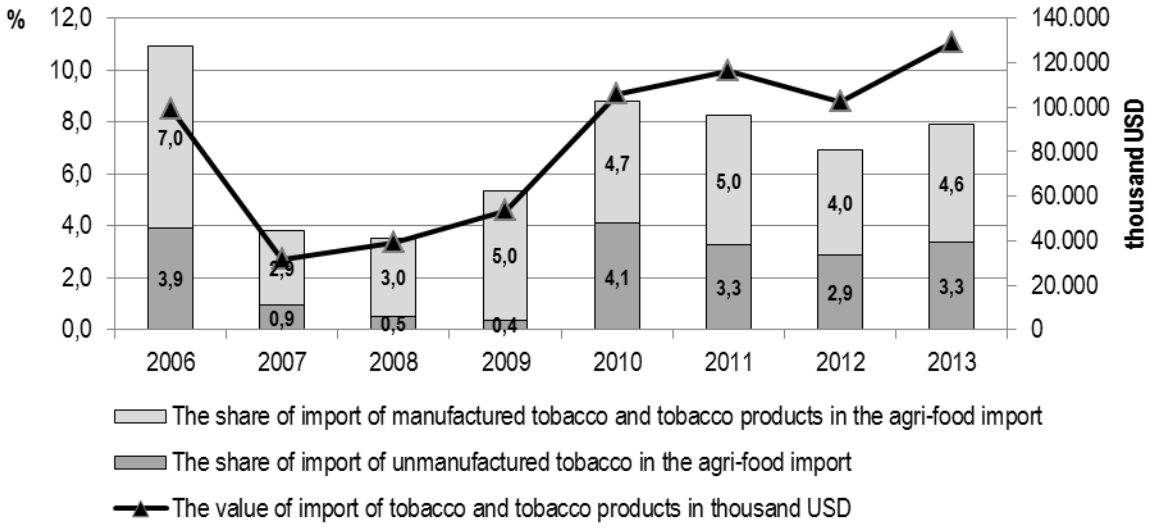


Figure 3: Trends in the import of tobacco and tobacco products of Serbia
Source: The authors` calculation on the basis of SORS, 2016.

A negative foreign trade exchange balance of tobacco and tobacco products was realized in most of the analyzed years (Figure 4), except in 2008 and 2009 when it was positive, primary because of the positive net-export of unmanufactured tobacco. The main problem of such tendencies is that Serbia in the analyzed period imported manufactured tobacco and tobacco products, while exported unmanufactured tobacco. It is obvious that processing and manufacturing tobacco in Serbia, instead of export of unmanufactured tobacco, would have influence on increase of value of production of tobacco and tobacco products.

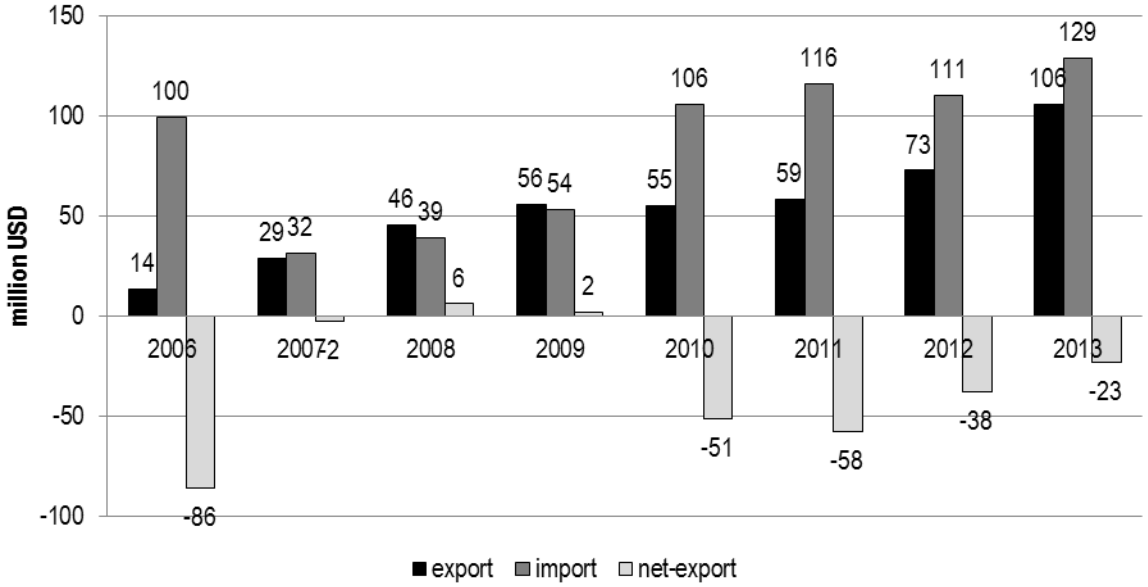


Figure 4: Trends in the net-export of tobacco and tobacco products of Serbia
Source: The authors` calculation on the basis of SORS, 2016.

4.3. Revealed comparative advantage and intra-industry trade of tobacco and tobacco products

In order to determine the comparative advantage of tobacco and tobacco products of Serbia in comparison to the total international trade (world), as well as the markets of the EU and the CEFTA counties, firstly the index of revealed comparative advantages was analyzed with traditional Balassa index. The Serbian RCA on the international market for tobacco and tobacco products was bellow 1 only in 2006, and after that year RCA was permanently increasing (Figure 5). The RCA index had been increasing in the analyzed period on all analyzed markets. Analyzing the differences in RCA by groups of countries, it can be concluded that Serbia had comparative advantages on international market, as well as on the EU market, while on market of the CEFTA countries, comparative disadvantage was present. The RCA index is lowest for the CEFTA countries, but in the analyzed period it was permanently increasing, although in all analyzed years it was bellow 1.

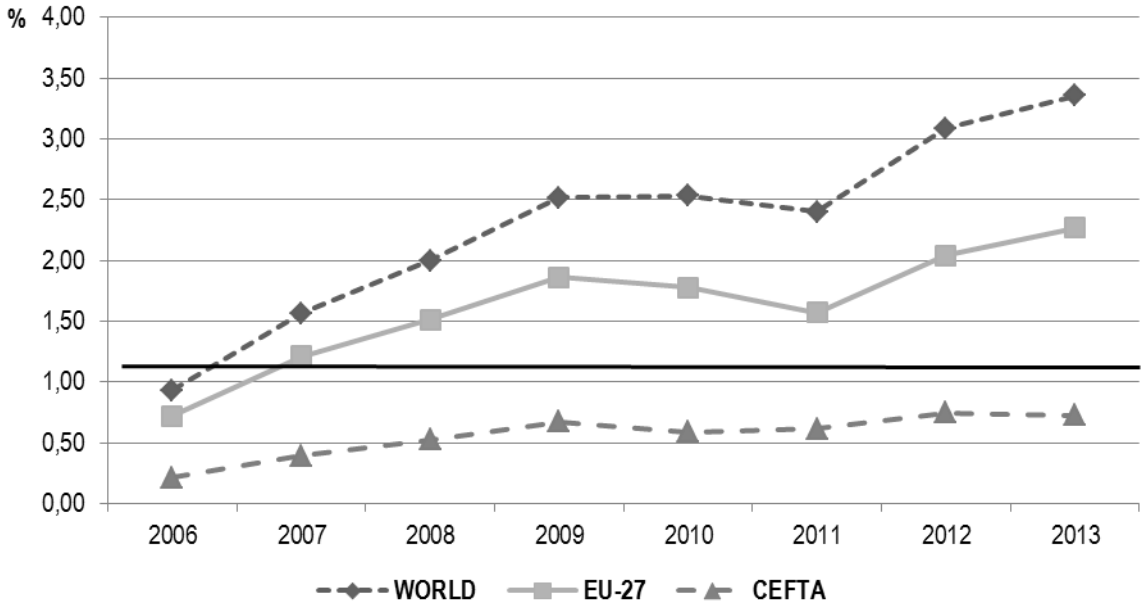


Figure 5: Index of revealed comparative advantages of tobacco and tobacco products of Serbia
Source: The authors` calculation on the basis of SORS and FAOstat, 2016.

Using modifications of RCA index (Table 1) it can be concluded that according to all indices, Serbia had comparative advantages on the international market, and dominantly on market of the EU countries, especially in the last period, while on market of the CEFTA countries, comparative disadvantage was present. General conclusion is that comparative advantages for tobacco and tobacco products had been increasing on all analyzed markets.

Table 1: Indices of revealed comparative advantages of tobacco and tobacco products of Serbia

RCA if:	WORLD				EU-27				CEFTA			
	RXA	RTA	ln RXA	RC	RXA	RTA	ln RXA	RC	RXA	RTA	ln RXA	RC
	>1	>0	>0	>0	>1	>0	>0	>0	>1	>0	>0	>0
2006	0.93	-	-0.07	-	0.72	-	-0.33	-	0.21	-	-1.54	-
2007	1.57	-	0.45	-	1.21	-	0.19	-	0.39	-	-0.94	-
2008	2.00	0.27	0.69	0.14	1.52	0.08	0.42	0.06	0.52	-	-0.65	-
2009	2.51	1.32	0.92	0.74	1.86	0.89	0.62	0.65	0.67	0.08	-0.40	0.12
2010	2.53	1.00	0.93	0.50	1.78	0.59	0.58	0.40	0.59	-	-0.53	-
2011	2.40	-	0.88	-	1.57	-	0.45	-	0.62	-	-0.48	-
2012	3.09	0.86	1.13	0.33	2.04	0.30	0.71	0.16	0.75	-	-0.29	-
2013	3.36	0.70	1.21	0.23	2.27	0.14	0.82	0.07	0.73	-	-0.32	-
Mean	2.30	0.21	0.77	0.07	1.62	-	0.43	-	0.56	-	-0.64	-

Source: The authors` calculation on the basis of SORS and FAOstat, 2016.

Ballance et al. (1987) suggested simple statistical tests for analyzing of correlation of different indices and that tests should determine the extent to which those different indices are related to the identification of comparative advantages. Those tests can examine empirical consistency among alternative indices of comparative advantages. In this paper those indices identify a comparative advantage for tobacco and tobacco products of Serbia. By using Pearson`s ($r_p$) and Spearman`s (r_s) tests (Table 2), correlation coefficient between four indices is calculated. According to Lord et al. (2010), correlation above 70% is regarded as a sufficient condition for accepting the fact that two indices have consistent results. Using the Pearson`s correlation index, it is concluded that all 6 pairs are significantly correlated, same as using the Spearman`s index. Correlation index showed that alternative formulations of indices of comparative advantages in case of tobacco and tobacco products of Serbia are highly consistent.

Table 2: The correlation index of the comparative advantages of tobacco and tobacco products of Serbia

	r_p				r_s			
	RXA	RTA	ln RXA	RC	RXA	RTA	ln RXA	RC
RXA	1.000000	0.829126	0.980285	0.773128	1.000000	0.738090	1.000000	0.738090
RTA	0.829126	1.000000	0.901470	0.993929	0.738090	1.000000	0.738090	1.000000
ln RXA	0.980285	0.901470	1.000000	0.861764	1.000000	0.738090	1.000000	0.738090
RC	0.773128	0.993929	0.861764	1.000000	0.738090	1.000000	0.738090	1.000000

r_p – Pearson correlation index; r_s - Spearman correlation index

The LFI method has showed that Serbia achieved the comparative advantages in case of the CEFTA countries, and partly on the world market, while on the EU-27 market,

comparative advantages did not exist (Figure 6). It is obvious that different methods provide different results of comparative advantages. Hence, RXA, RTA, ln RTA and RC indices show the existence of comparative advantages on the world market and mainly in the EU-27, while tobacco and tobacco products from Serbia do not have comparative advantages on the CEFTA market (Table 1). This result is a consequence of significant differences between the LFI and other methods. LFI involves not only export but also import of products, on way which is greatly different from the previous methods. In case of tobacco and tobacco products, Serbia had a negative foreign trade exchange balance with the EU-27 and therefore comparative disadvantages occurred according to the LFI. On the other hand, Serbia had comparative advantages on the market of CEFTA countries, at least their legal part, because those countries represent export market for tobacco and tobacco products made in Serbia (SORS, 2016).

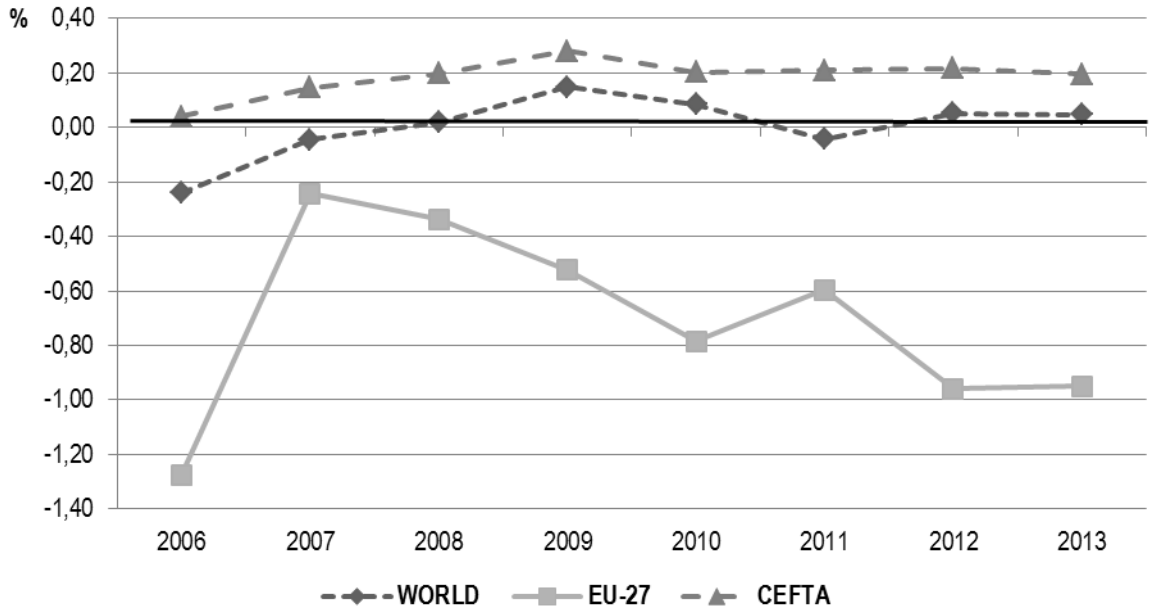


Figure 6: LFI of tobacco and tobacco products of Serbia
Source: The authors` calculation on the basis of SORS, 2015.

The values of GLIIT for tobacco and tobacco products of Serbia in the analyzed period were higher than threshold level of 15% which indicates intra-industry character of trade, so tobacco and tobacco products are well integrated with the international market, as well as with the markets of the EU and the CEFTA countries (Figure 7). It is notable that after 2006 the values of GLIIT were increasing, primary because of reduced barriers on trade with the CEFTA countries, as well as the EU countries. High values of GLIIT for tobacco and tobacco indicate good integration and specialization with analyzed markets.

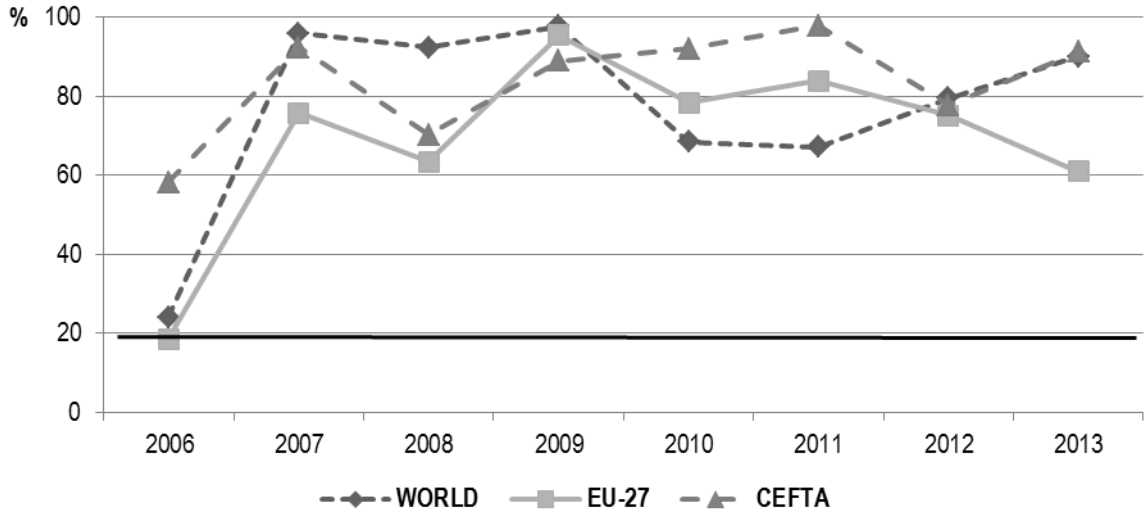


Figure 7: Index of intra-industry trade of tobacco and tobacco products of Serbia
Source: The authors` calculation on the basis of SORS, 2015.

5. Conclusion

This paper has examined competitiveness of tobacco and tobacco products of Serbia on the international market, as well as on the market of the EU and the CEFTA countries and the ways in which it changed in face of actual tendencies on markets, using different factors that determine competitiveness. The analysis of production performances carried out showed that production of tobacco on farms decreased and yield stagnated in the analyzed period. As far as manufacturing of tobacco products is concerned, three largest multinational companies are present in Serbia and market of manufacturers of tobacco products is highly concentrated and it is an oligopoly.

Under the influence of the liberalization with the international market, influenced by agreements with the EU and the CEFTA countries, numerous changes in foreign trade of tobacco and tobacco products of Serbia have occurred. Export of tobacco and tobacco products from Serbia has permanently increased, while flows of import have changed from year to year. In most analyzed years a negative foreign trade exchange was realized and the problem is export of unmanufactured tobacco, despite possibility of manufacturing in Serbia's capacities and additional export of tobacco products.

The general conclusion about competitiveness of tobacco and tobacco products of Serbia is an obvious increase of indices' value in the analyzed period. Results relating to

individual markets may vary depending on the applied methodology. In this context, it seems more appropriate to accept the results of the LFI method, as more complete method. According to this method, Serbia achieved comparative advantages for tobacco and tobacco products in case of the CEFTA countries, while in case of the EU-27 countries these advantages did not exist. The reason is a better foreign trade balance of tobacco and tobacco products that Serbia has had with the CEFTA countries compared to the EU-27 countries.

The results of the GLIIT for tobacco and tobacco products indicated intra-industry character of trade, so these products are well integrated with the international market. Because of dilemma which every country is faced: an economic and a social interest in tobacco production or protection of people`s health, future results in the competitiveness of tobacco and tobacco products of Serbia will depend on the ability of this sector to respond on the future challenges in this field.

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