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## The Textile and Clothing Industry in the Danube Region Countries - Comparative Advantages

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**Abstract:** *The subject of this study is the analysis of comparative advantages of international export in the TC (textile and clothing) industry of the Danube region countries with a special focus on Serbia. The aim of this study is to analyze the comparative advantage and suggest possible economic and legal measures to strengthen export. This study observed export per capita and participation of TC industry export, and measured the comparative advantage and specialization of the Danube region countries in the period between 2005 and 2013. In the course of research, we used the Balassa (RCA) and Lafay (LFI) indexes of comparative advantage, and the GL index and RUV index of horizontal and vertical specialization in intra-industry exchange. The research has revealed positive comparative advantage in the export of the textile industry in the Czech Republic, Germany and Slovenia. In the clothing industry export, positive comparative advantage was revealed in the cases of: Bulgaria, Hungary, Moldova, Romania, Slovakia and Serbia. The research has shown a positive comparative advantage of the TC industry sector in Serbia. The results of our research into the TC industry reveal the existence of correlation between comparative advantage and intra-industry specialization in international trade.*

**Keywords:** *textile and clothing industry, structural analysis of export, comparative advantage and specialization of export, the Danube region countries*

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## **Tekstilna i odevna industrija zemalja Dunavske regije – komparativna prednost**

**Apstrakt:** Predmet istraživanja je analiza i komparativne prednosti izvoza TC industrije zemalja dunavske regije na međunarodnom tržištu, sa akcentom na Srbiju, sa ciljem da se prouče komparativne prednosti i predlože ekonomska i pravna rešenja za dinamiziranje izvoza. U radu je sagledan izvoz per capita, učešće izvoza TC industrije i izmerena je komparativna prednost i specijalizacija zemalja dunavske regije u periodu od 2005 - 2013.godine. U istraživanju je primenjen Balassa (RCA) i Lafay indeks(LFI) komparativne prednosti, GL indeks i RUV indeks horizontalne i vertikalne specijalizacije u intraindustrijskoj razmeni. Istraživanjem je ustanovljena pozitivna komparativna prednost u izvozu tekstilne industrije: Češke, Nemačke i Slovenije. U izvozu odevne industrije pozitivnu komparativnu prednost ostvarile su: Bugarska, Mađarska, Moldavija, Rumunija, Slovačka i Srbija. Istraživanjem je ustanovljena pozitivna komparativna prednost izvoza sektora TC industrije Srbije. Rezultati istraživanja TC industrije ukazuju na postojanje korelacije između komparativne prednosti i intraindustrijske specijalizacije u međunarodnoj trgovini.

**Gljučne reči:** tekstilna i odevna industrija, strukturalna analiza izvoza, komparativna prednost i specijalizacija izvoza, zemlje dunavske regije

### **1. Introduction**

The Danube region comprises countries at different levels of development and in different positions with respect to the EU. The differences are reflected in the different level and structure of industrial production, employment, involvement in international courses and especially in the level of the transition process achieved. The structure of the Danube region countries' export varies due to differences in production. In recent years, the countries in the Danube region have been making efforts to harmonize individual and collective interest. Numerous authors conducted researches on the economies of the SEE and CEFTA countries as well as the countries in the process of joining the EU. They researched macroeconomic competitiveness, comparative advantages in international trade, industrial production, fiscal, monetary and other issues.

Textile industry, being one of the process industries, requires a high percentage of work force and participates in generating country's GDP. Textile industry still represents "one of the main modes of capital accumulation, employment and economic growth" (Buturac, 2007: 112). Intensive development of textile industry triggers the need for "new design,

quality and knowledge transfer” and, according to Buturac (2007), this will inevitably lead to a change in comparative advantage and specialization in international trade.

The world demand for textile products is on the increase whereas the position of textile and clothing industry of the Danube region countries, and especially Serbia, is declining. Textile industry export has risen inconsiderably comparing to the world average. In the past period, textile industry was a significant part of the total economy of Serbia, achieving good results in export, despite low productivity and a relatively small participation in the creation of added value. Lack of investments is evident, coupled with increased competition from the neighboring countries, grey economy, a large number of unregistered companies, uncontrollable import from Turkey and China and high costs of introducing new quality standards and environmental regulations. Price competitiveness of textile and clothing industry have been mainly based on cheap workforce, while the lack of investments and improvements has led to a decrease in economic and technological growth, as well as the closing down of many companies.

In the paper was undertaken research of comparative advantage of the textile and clothing industry of the Danube region countries with the focus on the TC industry in Serbia, aiming to point out the significance of international trade and the necessity of regional cooperation. The Danube region countries were analysed in the research, with the aim to indicate the blend of diversities and as Ignjatijević, Ćirić & Carić (2013b) emphasize “by identifying the similarities and differences in trade structure of the Danube region countries, by using the appropriate indicators, it is possible to observe the characteristics and qualitative changes in product structure of these countries”.

## **2. Literature review**

Decreased production and export as well as negative balance of textile and clothing exchange during the transition result from “greater liberalization of domestic market, small-scale industrial production, relative productivity lagging behind competitors, labour cost increase tendencies and poor protection of domestic production” (Buturac, 2007: 112).

In their study, Balasubramanyam & Salisu (1993) analyzed the effects of demand, productivity and import penetration on the decrease of employment figures in textile and clothing industry. The mentioned authors suggest measures to stop this negative trend by promoting export, specialization and product diversification in these two industries. They also emphasize the need for sustainable R&D in order to improve the quality of these products.

Kasvio (1985: 275) points out the increasing trend of production internationalization growth in developing countries. He considers that process to be emphasized in traditionally "women - dominated textile, clothing" industries. New technologies affect competitiveness development, work process changes as well as the position of female work force with secondary education. The research of Finnish textile, clothing and electronic industry workers indicates the presence of comparative advantage in Western Europe cheap labour force, intensive trade with the Soviet Union and modernization of production.

Havrila & Gunawardana (2003) analyzed comparative advantage and specialization in international trade of the Australian textile and clothing (TC) industry using the Balassa and GL indexes. The mentioned authors dealt with comparative advantage of products classified by factor intensity and product groups - SITC. According to them, the emphasis should be put on the promotion of international export through product differentiation and improvement of quality and design.

The competitiveness of Bangladesh textile industry was researched by Yang & Mlachila (2007). They conducted research into the obstacles for the development of TC industry and pointed to the importance of "consistent quality and reliable, fast delivery" which are, according to them, "vital for export success" (p. 686). When analyzing obstacles for the influx of FDI (foreign direct investments) into the textile and clothing industry, they emphasize the presence of corruption, bureaucracy and complex customs procedures.

The research of productivity, employment in TC industry and participation of China in the international market was addressed by Seyoum (2010). The conclusion was that in the last decades, investments and trade have been targeted mainly at two things: development of clusters and development of Asian suppliers, led by China (2010: 173).

Cann (2011) studied the competitiveness of Chinese TC industry using Porter's strengths of competitiveness. Chen Chui Lee (2009: 513) believes that positive results in the development of developing countries can be achieved by "adopting various protective duties, pricing controls for raw materials, providing export duty refunds, and by the provision of investment tax exemption to encourage local investment in weaving and textile factories". Wijayasiri & Dissanayake (2008) pointed to a fact that in the developing countries there is a great dependence of textile industry on the import of fabrics and textile accessories.

Urošević, Cvijanović & Đorđević (2008) analyzed the role of knowledge and education of the expert personnel in the textile industry. They indicated that expert personnel should also possess knowledge of organizational business management, strategic and operative planning, marketing, quality

management, etc. in order to enable the personnel to solve both technical and management problems.

Urošević, Đorđević & Cvijanović (2009: 97) emphasise that Finishing works were and still are of great importance in these countries, because they have made possible and speeded up economy integration of these countries into the world economy. Authors emphasise that "for the CIE manufacturers, finishing works have meant safe sale and better access to the European market, as well as acquisition of the new management and technological knowledge, acquiring highly needed financial support and new jobs". Đorđević, Urošević & Cvijanović (2010) point to the need of connection between small and medium-sized enterprises in the field of textile industry clusters in order to improve market competitiveness.

Ignjatijević, Đorđević & Ćirić (2012) conducted research into the competitiveness and comparative advantages of Serbian textile industry and concluded that "there is a negative value of comparative advantage of the Serbian textile and clothing industry and the rise in specialization in intra-industry exchange at the level of industry, whereas there is a satisfactory level of comparative advantage of export and intra-industry exchange for specific groups of market goods"( Ignjatijević et al., 2012: 383)

Ignjatijević, Đokić, Ćirić & Kovačević (2013a) dealt with the structural analysis and comparative advantage of export in the Danube region countries. In their study, they pointed to the fact that "the export of yarn, fabrics and textiles sector represents the export of products in which unqualified labor prevails". Furthermore, the authors mentioned that "in the production of textile products there are various problems, such as lack of investments and financial inputs into the development of modern technology. Clothing industry products are dominant in the export of Moldova, Romania, Serbia and Croatia."

Ignjatijević, Milojević & Ivančević (2011b) dealt with comparative advantage of primary products export, in such a manner that they showed advantages in the export of Moldova, Ukraine and Serbia by using the Ballasa index. In the study, Ignjatijević et al. (2013b) dealt with comparative advantages of the Danube region countries export. The authors classified the products into primary products and industrial products and by using the Balassa and Lafay indexes indicated the increase in trade openness, but also the presence of differences in the structure of production and trade.

### **3. Research methodology**

The subject of the research is the analysis of textile and clothing industry of the Danube region countries, with a special focus on Serbia. The study

dynamically observes comparative advantages of export and specialization in international trade in the period 2005-2013 in order to measure comparative advantage of TC industry export. The data obtained from the ITC was used for the research. World Bank and the Statistical Office of Serbia for relevant years. In the course of the research into the comparative advantages of TC industry of the Danube region countries, the ITC classification was used, where TC products have been classified under two sectors: Textiles and Clothing. While researching comparative advantage of Serbian TC industry, sectors of processing industry: industry of textile yarn and fabrics, and clothing industry, industry of fur and fur products, were analyzed.

In the studies so far, authors have conducted research on comparative advantage of export for different industries or products and classified them according to different criteria. By having an insight into available literature we can conclude that Balassa and Lafay indexes are the most often used methods to measure comparative advantage in export. In accordance with the research done by Buturac (2008) and earlier researches by Ignjatijević et al. (2012, 2013a, 2013b) comparative advantage of the TC export was measured using the Balassa index. The mathematical formula used to calculate the needed comparative advantage (Balassa, 1965):

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

The logarithm form of this index is used in practice and in the given formula X represents the value of export, whereas M represents the value of import. The *i* index represents the industry sector of product group.

For the level of specialization in intra-industry exchange (export and import) the Grubel Lloyd's index has been used. GL is the value of Grubel Lloyd's index for a group of products *i*. X represents the export value, whereas M is the import value. The index ranges from 0 to 1. GL index is calculated using the following formula (Grubel & Lloyd, 1975):

$$GL_i^t = \left( \left( \sum_{i=1}^n (X_i^t + M_i^t) \right) - \sum_{i=1}^n |X_i^t - M_i^t| \right) / \sum_{i=1}^n (X_i^t + M_i^t) \quad (2)$$

In the given formula, the symbols represent the following: GL - index of intra-industry trade of the  $i$  sector in the year  $t$ ,  $X$  - export of product group  $i$  in the year  $t$  and  $M$  - import of product group  $i$  in the year  $t$ .

For the analysis of comparative advantage we also used the Lafay index (LFI) which takes into account the intra-industry trade flows. Lafay index is defined in the following way (Affortunato, Ciommi, Furia & Voccaro, 2010):

$$LFI^i_j = 100 \left( \frac{x^i_j - m^i_j}{x^i_j + m^i_j} - \frac{\sum_{j=1}^N (x^i_j - m^i_j)}{\sum_{j=1}^N (x^i_j + m^i_j)} \right) \frac{x^i_j + m^i_j}{\sum_{j=1}^N (x^i_j + m^i_j)} \quad (3)$$

where  $i$  is the export and import of product  $j$  for country  $i$ , to and from the rest of the world, and  $N$  is the number of products/items. Comparative advantage in the country  $i$  in the production of product  $j$  measures the deviation of product  $j$  from the total normalized trade balance. Positive values of the Lafay index indicate the existence of comparative advantage. Lafay index, as opposed to Balassa index, takes into account the difference between values of import and export. RCA shows whether we have the case of a sector with a comparative advantage or not, comparing the trade balance with the real trade balance, relative to GDP.

#### 4. Research results

In the Danube region countries there has been an improvement of macroeconomic stability, price stability and certain improvements in the public finance sector. Although positive results have been achieved on a macroeconomic level, unemployment and low product competitiveness in international markets present a growing challenge. In the recent years, there has been an increase in GDP, coupled with the integration into international production and financial flows and an influx of FDI.

An important indicator of the degree of development of textile and clothing industry is product export of these two industries per capita. An increase in export is the result of a successfully finished process of transition in a certain number of countries and a high percentage of FDI. In 2010 investments different in scope have been directed towards Austria - \$4 million, Bosnia and Herzegovina - \$4.7million, The Czech Republic - \$67.5 million, Croatia - \$57.8 million, Germany \$26.5 million, Romania - \$52.7 million and Slovakia

\$21.1 million (Source: ITC). Serbian TC industry is especially attractive to foreign investors, so the greatest number of Italian investments in Serbia were placed into textile industry and manufacturing of knitwear, laundry and socks. We are of the opinion that obstacles pointed out by Yang & Mlachila (2007) need to be removed and conditions provided for more intensive FDI attracting. Positive outcomes of FDI are certainly increases in production and employment, export as well as foreign-exchange and tax income. Obstacles for FDI influx increase and positive effects are, as Meyer & Pind (1999) put it, poor legal and institutional framework, that is to say, corruption and macroeconomic instability which is indicated by Asiedu (2006).

*Table 1 Export of textile and clothing per capita (US\$) and participation of sectors in the total export and import of the Danube region countries (% average 2005-2013)*

	Textile (US\$)					Clothing (US\$)				
	2005	2010	2013	In export (% average 05-13)	In import (% average 05-13)	2005	2010	2013	In export (% average 05-13)	In import (% average 05-13)
Austria	232.5	228.8	259.2	1.04	1.04	251.3	254.2	301.4	1.83	3.04
Bosnia and Herzegovina	4.6	12.8	12.6	1	2.75	21.7	44.8	53.4	3.21	1.33
Bulgaria	40.9	49.1	64.9	1.29	3.25	222.9	203.3	244.7	7.17	1.25
The Czech Republic	198	211.8	241.6	1.29	1.29	122.9	118.9	133.4	1.17	1.08
Croatia	24	26	31.2	0.5	2	128.4	110.2	105.9	4	2.38
Hungary	64.6	70.2	84.7	1	1.08	127.9	70.4	74.5	1.17	1
Moldova	6.0	10.7	22.1	3.17	5.04	45.5	65.4	73.2	12.54	1.02
Germany	165.3	162.2	176.8	1	1.18	150.8	207.9	232.2	1	2.5
Romania	31.1	46.8	59.7	1.29	4.42	213.9	140.8	161.6	6.38	1.13
Slovakia	114	125.9	166.6	0.87	1.29	150.3	206.6	213.4	1.25	1.08
Slovenia	249.3	265.4	304.9	2.04	1.29	176.5	138.3	121.7	1.14	1.5
Ukraine	5.1	4.2	5.4	0.6	1.21	14.6	12.4	12.9	1.33	0.75

*Source: ITC (ITC does not have the data for the export of Serbia and Montenegro)*

In the export and import of countries from the Danube region there is great structural inconsistency, which is in accordance with earlier conclusions drawn by Ignjatijević et al. (2012). The export of textile participates with a



small percentage in the structure of total export of all Danube region countries. Export of products from the “yarn, fabrics and textiles“sector, represents the export of products in which unqualified labor prevails.

In the export of developed transitional countries and those with developed trade, from the Danube region, there is a large percentage of technologically intensive products with a high added value, which contributes to an intensive economic development. Textile belongs to group 6 of resource-intensive products (SITC), where cheap and qualified workforce prevails and participates with a small percentage in the export of countries from the Danube region. However, a larger share of these products is evident in the export of Bulgaria, Slovenia, Moldova, the Czech Republic and Romania. A high participation of export in the clothing industry, which requires a high share of qualified work is evident in Serbia, Croatia, Bulgaria, Romania and Moldova.

*Table 2 RCA indicator of product export, according to the ITC methodology of the Danube region countries*

Sectors		Austria	Bosnia and Hercegpvina	Bulgaria	The Czech Republic	Croatia	Hungary	Moldova
Textiles	2005	-0.02	-0.82	-0.8	0.01	-0.68	-0.57	-0.89
	2013	-0.04	-0.91	-0.76	0.1	-0.73	-0.35	-0.65
$\Delta$ RCA		-0.02	-0.09	0.04	0.09	-0.05	0.22	0.24
Clothing	2005	-0.7	-0.24	0.85	-0.06	0.15	0.39	0.83
	2013	-0.89	-0.02	0.87	-0.38	-0.09	-0.08	0.44
$\Delta$ RCA		-0.19	0.22	0.02	-0.32	-0.24	-0.47	-0.39
		Germany	Romania	Slovakia	Slovenia	Serbia	Ukraine	
Textiles	2005	0.17	-1.09	-0.38	-0.12	-0.73	-1.26	
	2013	0.07	-0.83	-0.47	0.21	-0.63	-1.37	
$\Delta$ RCA		-0.1	0.26	-0.09	0.33	0.1	-0.11	
Clothing	2005	-0.88	1.28	0.61	-0.06	0.2	0.54	
	2013	-0.8	0.96	0	-0.67	0.31	-0.21	
$\Delta$ RCA		0.08	-0.32	-0.61	-0.61	0.11	-0.75	

*Source: ITC and authors' calculation*

Research shows that Austria has a negative comparative advantage in the export of textile and clothing. As Austria's export is dominated by chemical industry products, non-machinery industry products and transport equipment, the research results obtained are in accordance with earlier conclusions of Ignjatijević et al. (2013a). Bosnia and Herzegovina has an unfavorable production structure and high import dependence. In international trade with

textile and clothing, Bosnia and Herzegovina has an extremely negative comparative advantage. Negative comparative advantages of Bosnia and Herzegovina and Croatia result principally from the breakup of the single market of the Socialist Federal Republic of Yugoslavia and the dependence on fabric and equipment import. The very Wijayasiri & Dissanayake (2008) pointed out this import dependence of developing countries. The fall of former Yugoslavia and a global economic crisis led to a decrease in comparative advantage in the export of most sectors of the Croatian processing industry. "The growth of export was, at the same time, more significant only for one part of clothing products. With the opening of the EU market, transitional countries of Middle and East Europe, China, India and Taiwan became major and direct competitors to Croatian export. The conclusion is that Croatia did not take the opportunity of the EU market opening to increase its export of textile" (Buturac, 2007, p. 118). The results of research confirmed the position of Buturac (2007) about partial comparative advantage of clothing industry export. Since the research comprised the following period, we gained the confirmation of the author's finding on the negative trend of Croatian processing industry (Buturac, 2008). Conclusion is that it is necessary to take prompt action in order to decrease import and restrain the negative trend in employment in TC industry. As far back as 1993 Balasubramanyam & Salisu (1993) pointed out the significance of the export promotion, specialization, product diversification as well as quality and design improvement (Havrila & Gunawardana, 2003). Results of research into the export of the Czech Republic reveal that the textile sector improved its degree of comparative advantage after a successfully finished process of transition. Positive results were achieved in industrial products export, thus negative comparative advantage of clothing industry export is in accordance with the findings of Ignjatijević et al. (2013a) and Yilmaz & Ergun (2003). In the analyzed period, Hungary had the same structure of export as the Czech Republic, and results indicate that comparative advantage in the export of clothing was lost. Certain authors conducted research into Hungarian industrial production during various periods. Yilmaz & Ergun (2003) indicated comparative advantage of the export of raw – material intensive goods, whereas Ignjatijević et al. (2013a) pointed out the comparative advantage of the export of fresh food and process food products, as well as the change in the structure of production and export. Through the research it was established that industrial production in Hungary underwent certain changes with significant commitment of the state. Along those lines, Banse, Gorton, Hartel, Hughes, Köckler, Möllman, & Münch (1999) indicated the importance of state support to industrial production, that is to say, to economic development. In the export of Moldova, products with a small added value prevail, as well as resource- and labor-intensive products, such as: fresh food, processed food, clothing and leather products. In the export of Germany there is a prevalence of processed food, chemicals and basic manufacturing (Source: ITC). Results point to a

small comparative advantage in the export of textile. The results of the research show comparative advantage of the capital intensive products export and confirm earlier conclusions of Ignjatijević et al. (2013a). Searching for cheap, yet educated and qualified work force, German and Austrian producers of TC industry placed a part of their production capacities in Serbia and countries in the region. Through joint production, and partially through additional processing work, there was an increase in employment especially in underdeveloped municipalities. The transfer of technology should contribute to the improvement of the position of female work force with secondary education, modernization of production and increase in export, which was suggested by Kasvio (1985). Romania gains a positive comparative advantage in the export of clothing, but it is also evident that the textile sector is improving, where one can observe an increase in export and a decrease of a highly negative value of comparative advantage. Nowadays Romania is the leading country of the Danube region in TC industry production. During the period of the breakup and sanctions Serbia was disconnected from all investment influxes. In search for cheap production locations foreign capitals of Austria and Italy as well as Germany passed by Serbia and were invested in Romania and Bulgaria. Accessing the EU and opening their markets, Romania and Bulgaria faced uncontrollable import and fierce competition of Chinese and Indian products. In the initial phase, the solution was jobs, whereas today the focus is on R&D for product quality improvement and professional development of employees. Bulgaria has a positive comparative advantage in the export of resource-intensive products such as clothing, where goods produced by qualified labor are exported. The export is dominated by fresh food, basic manufactures, clothing and minerals; therefore, we confirmed earlier conclusions of Ignjatijević et al. (2013a) in the research. Based on the example of Romania and Bulgaria it can be seen how SDI contributed to opening new work positions, that is to say, how textile sector contributed to economic growth. Dynamic development of Bulgarian process industry followed and here food and clothing industry had the greatest comparative advantage. Initial production advantage was in cheap work force, which was then promoted using foreign capital. Industrial production restructuring was carried out so that producers keep competitive positions in the foreign market. Slovenia has more sectors with a positive comparative advantage, while in the export of clothing there is an evident negative value of comparative advantage. Slovakia achieves its positive comparative advantage in the export of clothing as well. Ukraine and Serbia have an unfavorable export structure in which food prevails, and in the case of Serbia positive comparative advantage is achieved in the export of clothing as well. Negative comparative advantage in the export of most sectors in Serbia is a result of low usage, overly big and outdated production capacities.

## **5. Comparative advantage of export of Serbian textile and clothing industry**

The development of textile and clothing industry in Serbia, at the end of 1980s and the beginning of 1990s, was greatly affected by the fall and breakdown of former Yugoslavia and the Soviet Union, as well as economic sanctions, transition and war developments in 1999. The breakdown of former Yugoslavia and the emergence of new countries led to a collapse of the previously united market and the breaking of vertical integration of the textile industry. Some primary capacities of the textile industry were thus destroyed, such as those used for the manufacturing of yarn and fabrics, which have been located in Serbia, as well as some big manufacturers of ready-made clothing garments. Soon after, the industries which produced spare machine parts, textile and clothing accessories and equipment, all began to slow down with production (Raičević & Ćorović, 2010a). Textile industry entered the process of privatization with a burden of problems from the previous period. The closing of huge state companies was followed by the emergence of small privately-owned firms in the clothing sector which put an end to a further decrease in the scope of production (Raičević & Ćorović, 2010 b).

In the analyzed years, the most important import products of the TC industry were: jackets and coats (male and female), clothing accessories made of textile and clothes. In the structure of export of the TC industry in 2013 export of the Textiles sectors is 163 \$m and net exports (in thousand US\$) is -336,65 \$; the Clothing sectors is 602.6 \$m and net exports (in thousand US\$) is 271,285 \$.

The Serbian TC industry offerings should be brought in line with fashion trends, short delivery dates and a satisfactory manufacturing quality level. Serbia's superficial approach to market research, discontinuity in promotional activities and insufficient engagement in research and development of new products resulted in a situation where carpets and floor coverings are the only Serbian products known and recognizable outside of former Yugoslav republics' markets (Raičević & Ćorović, 2010b). It is necessary to intensify all marketing activities, especially considering the fact that future prospects of the mentioned product group largely depend on the increase of world trade and demand in international markets.

Of all the analyzed textile and clothing industry sectors in 2013, the following sectors had positive values of comparative advantage: Manufacturing of other clothes, laundry, and finishing works in manufacturing and coloring fur, wool-like yarn etc. Sectors with extremely negative values of comparative advantage were: Manufacturing of linen yarn, silk yarn etc.

*Table 4 Values of the revealed comparative advantage (RCA) of the textile and clothing sectors of the Serbian processing industry for 2005 and 2013*

Textile and clothing sectors of the processing industry	2005	2013	2005	2013	2005	2013
	RCA	RCA	LFI	LFI	GL	GL
Leather clothing and products	-0.06	-0.59	0.01	0	0.93	0.53
Manufacturing of other clothing products	0.3	0.05	0.75	0.24	0.66	0.95
Man. of laundry	0.14	0.11	0.37	0.21	0.84	0.9
Man. of other clothing and accessories	-0.26	-0.7	0.02	-0.05	0.7	0.46
Finishing works in manufacturing and coloring fur items	-0.03	0.03	0	0	0.97	0.98
Man. of cotton and cotton-like yarn	-1.08	-1.25	-0.04	-0.03	0.15	0.21
Man. of wool and wool-like yarn	-0.01	0.09	0.02	0.01	0.98	0.92
Man. of linen yarn	-2	-3.18	-0.01	0	0.02	0.01
Man. of silk yarn	-0.39	0.62	0	0	0.57	0.52
Man. of other textile yarn	-0.87	-1.16	-0.26	-0.25	0.24	0.24
Man. of cotton-like fabrics	-0.91	-1.13	-0.09	-0.06	0.22	0.26
Man. of wool-like fabrics	-1.28	-1.51	-0.06	-0.01	0.1	0.14
Man. silk fabrics	-1.35	-2.33	0	-0.01	0.08	0.04
Man. of other textile fabrics	-1.34	-1.45	-0.22	-0.17	0.08	0.16
Finishing textiles	-0.88	-1.93	-0.02	-0.01	0.23	0.07
Man. of home textile	-0.4	-0.86	0	-0.02	0.56	0.38
Man. of heavy-duty clothes	0.63	0.85	0.05	0.06	0.37	0.38
Man. of blankets and other covers	-1.03	-1.32	0	-0.01	0.17	0.19
Man. of other finished textile products	-0.53	-0.77	0	0	0.45	0.42
Man. of carpets and other floor coverings	0.14	0.27	0.1	0.07	0.84	0.78
Man. of ropes, braids and nets	-1.29	-1.26	-0.04	-0.05	0.1	0.21
Man. of non-woven textile and products made from non-woven textile	-0.38	-0.94	0	-0.02	0.58	0.34
Man. of other textile objects	-1.05	-0.87	-0.15	-0.13	0.16	0.37
Man. of woven and knitted socks and stockings	0.34	0.68	0.46	0.74	0.63	0.48
Man. of woven and knitted sweaters, pullovers and vests	0.03	-0.38	0.05	-0.01	0.97	0.69

*Source: Authors' calculation based on data obtained from the Statistical office of international trade for 2005 and 2013, Statistical Office of the Republic of Serbia, Belgrade.*

Textile and clothing industry products with a positive value of comparative advantage have been differentiated and there is a great demand for them in international markets. The mentioned sectors with a comparative advantage in international trade bring a surplus and inter-industry specialization prevails.

There is also an evident correlation between a positive comparative advantage and intra-industry specialization in international trade.

Intra-industry exchange of products of textile and clothing industry is evident only in: Manufacturing of other clothes, laundry, finishing works in manufacturing and coloring of fur items, manufacturing of woven and knitted sweaters, pullovers and vests and manufacturing of carpets and floor coverings. The mentioned tendencies, i.e. the presence of inter-industry trade indicate that it is a model of unidirectional trade where import prevails. Events in the last two decades led to a decrease in the competitiveness of textile and clothing products, due to a rise in the prices of primary resources, costs of financing the purchase of raw materials and production delays. At the same time, liberalization of domestic market without the necessary protection of domestic production led to increased import and decrease of comparative advantage.

Unfavorable business conditions, especially in the domain of issuing licenses, tax payment and foreign trade additionally affected the textile and clothing industry in Serbia and led to a loss of competitive advantage. (Ignjatijević, Matijašević & Carić, 2011a: 682-683)

In the coming period, structural adjustments of textile industry should be targeted at the revival of manufacturing of yarn, fabrics and metal and plastic accessories. Advantages of preferential treatment of our export into the Russian market have not been sufficiently exploited and we have not seen any organized effort of domestic brands to analyze the market and promote Serbian products in this big country (Raičević & Ćorović, 2010b). Although textile and clothing industry has the potential for export into the CEFTA market, positive effects of international trade seem to lack.

In order to improve the competitiveness of TC industry, it is necessary to enable a faster transfer of new technologies and innovations, to organize the process of modernization, to link small and mid-sized businesses into clusters and introduce the essential quality standards. Measures which would, from a fiscal perspective, give results are: to increase the non-taxable amount of employees' payments in TC industry in accordance with the employment of women workforce and workforce with special needs (disabled persons), to introduce tax exemptions for investments made in underdeveloped regions and to make amendments to the customs law and regulations. It is necessary to provide more favorable terms and conditions for permanent working capital loans and give subsidies for the development of domestic brands. Furthermore, it is necessary to harmonize the anti-dumping regulations with the regulations of WTO, real exchange-rate policy and further work on the legislation related to the mandatory indication of the country of origin.

## **6. Conclusions**

This research into the comparative advantages of the Danube region countries shows great differences concerning the structures of production and export. The developed countries from the Danube region, in the export dominated by technologically intensive and qualified-labor-intensive products, have not neglected the development of textile and clothing industry. The dominant pattern in the organization of production are finishing works, where the aim is to import finished clothing products from countries with cheap workforce and then sell them under own product brand. On the other hand, other countries' export is characterized by a prevalence of products with a lower degree of finalization, small added value and mainly resource and labor intensive products. The global economic crisis has led to a decrease in comparative advantage of most Danube region countries.

The comparative analysis of export of TC industry showed that the positive value of comparative advantage index is a characteristic of products the export of which brings surplus to a country. Countries which achieved a positive comparative advantage in the export of textile industry are: the Czech Republic, Germany and Slovenia (in 2010). Countries which achieved a positive comparative advantage in the export of clothing are: Bulgaria, Hungary, Moldova, Romania, Slovakia and Serbia.

It has already been pointed out that the structure of export in countries from the region is unfavorable and based mainly on finishing works. For this reason, export cannot compete with the growing import. Lack of financial resources over a long period of time has put a limit to the technological development of textile and clothing industry, so the finishing works became the only solution for employment of workforce and survival of TC industry. Research into the export of Serbian TC industry in the analyzed period shows low competitiveness and a low level of integration into international market flows. In the export of Serbian textile and clothing products, it can be said that there is a strong focus. In other words, only four product groups participate with 74% in the total export of these two industries. Results of research into the export of Serbian processing industry indicate that there is a negative comparative advantage in all of the analyzed years. The following sectors of TC industry achieved a positive comparative advantage: Manufacturing of clothes, laundry, Finishing works in the manufacturing and coloring of fur products, manufacturing of fur, woolen and silk yarn, manufacturing of heavy-duty clothes, carpets and floor coverings and socks. At the same time, sectors with comparative advantage also have the intra-industry character of exchange. Unfavorable credit conditions, lack of favorable loan schemes to finance production targeted at export and financing the export per se, made a

situation even more difficult and triggered the loss of competitiveness for TC industry.

Wishing to achieve competitiveness on a micro-level Serbian TC industry, it is necessary to provide sustainable production growth, increase productivity and create more economical business operations. Furthermore, it is necessary to take advantage of comparative production conditions, cheap workforce and to provide quality raw materials under good financial conditions, to increase the degree of utilization and modernization of production capacities and equipment and to develop the assortment of exporting products. The improvement of macroeconomic stability and business conditions, especially in the domain of international business operations will provide the necessary conditions for attracting foreign investments into the building and renewal of existing production capacities.

The process of integration and promotion of cooperation among the Danube region countries as well as intensive involvement of less developed countries, especially Serbia, should contribute to integral development, overcoming developmental problems and competitiveness development. In the defined strategy of the Danube region development, the focus is placed on education, transport and the protection of the environment. Considering the internationalization of the production of TC industry, cooperation at the level of the region can provide the conditions for fulfilling the set developmental goals and contribute to more intensive economic growth.

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