

# Assessing the Competitiveness of Serbian Textile and Apparel Industry Exports Using RCA Index and TPI Indicators

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## Abstract

*Due to the paucity of relevant research, little is known about emerging patterns of competitiveness in the textile and apparel (T&A) industry in Balkan countries. Research focused on the Serbian T&A industry after 2006, when the country renewed its independence, is particularly sparse. The purpose of this research is to contribute to a greater understanding of emerging competitiveness and its main determinants in the Serbian T&A industry, in the time period between 2007 and 2019, and in the context of the EU-28 market. Balassa's Revealed Comparative Advantage index and the Trade Performance Index instruments were used to assess export competitiveness, while the key competitiveness determinants were explored drawing on Porter's (1990) theory of the Competitive Advantage of Nations. Findings confirmed that Serbia, a low-income country and not an EU member, retained a distinguished and strong T&A export potential, which confirms that the country is a competitive player in international trade.*

**Key words:** competitiveness, Serbia, TPI indicators, RCA index, textiles, apparel.

## ■ Introduction

National and international interest in the Serbian textile and apparel (T&A) industry arose when experts recognised that this industry sector had exhibited a consistent recovery track since 2007 after the country renewed its independence in 2006 [12] and successfully transitioned to a market economy and democratic form of government. However, due to the lack of sector-specific longitudinal trade data, little research on the emerging patterns of competitiveness in Balkan countries has been published so far [24, 39]. Moreover, research focused on the Serbian T&A industry is particularly sparse.

A handful of studies published in the English language have focused on topics

such as dominant business models in the Serbian textile industry [47], the competitive potential of small and medium firms [14], and indicators of the Serbian T&A industry's competitiveness in the period prior to Serbia's renewing its independence [12]. However, no research has assessed the emerging forms of competitiveness in the Serbian T&A industry after Serbia renewed its independence. It is important to fill this gap in order to understand whether the Serbian T&A industry has indeed achieved competitive growth following a long period of ethnic wars, political and economic sanctions (1991-2000), and a transition crisis (2001-2010). Furthermore, if competitive growth has been achieved, it is important to assess the key determinants that have enabled this to happen.

Accordingly, the main purpose of this research is to contribute to a greater understanding of emerging patterns of competitiveness and their main determinants in the case of the Serbian T&A industry, in the period from 2007 to 2019, in the context of the EU-28 market. The current study has two main objectives: The first is to assess the competitiveness of Serbian T&A exports in a defined time frame, using trade data and two widely accepted techniques for measuring a nation's competitiveness: Balassa's (1965) Revealed Comparative Advantage-RCA index and the selected Trade Performance Index-TPI instruments [45]. The second objective is to explain the key determinants that have contributed to the competitiveness of the Serbian T&A industry

sector, drawing on Porter's (1990) theory of the Competitive Advantage of Nations. In practice, this study's findings may be beneficial to retail companies evaluating potential T&A production sites in the Balkan region. At a national level, this study's outcomes may be beneficial through attracting foreign investment to further foster growth and maintain the competitiveness of Serbia's T&A sector.

## ■ Literature review

### Overview of the Serbian textile and apparel industry

Serbia is situated in the Balkan Peninsula within the geographic area of South-east Europe, at the crossroads of the Pan-European Corridors which divide the Central and Eastern European states, offering excellent connections between Western Europe and the Middle East [34]. Because of its unique geographic position and highly skilled textile labour force, Serbia has historically had a strong tradition of T&A manufacturing and exports [7, 11, 32]. A peak in T&A trade between Serbia and Western Europe was reached in 1980, when due to increased costs of T&A production in Western Europe, Western retailers increasingly outsourced production to lower-cost post-communist Eastern Europe [24], more specifically to the ex-Yugoslavia federation [12, 36, 39]. Among the countries in the Federation, Serbia was particularly specialised in the production of T&A, and since orders from Western buyers were increasing, the country ex-

perienced a sudden economic growth [4, 7, 12, 36]. The main strength of the Serbian T&A industry was the high vertical integration of its production processes [11]. The domestic supply chain in this industry sector was strategically created to be vertical so that it could deliver all of the components necessary for T&A production, beginning with raw materials and extending to a wide range of yarns and fabrics and a complete range of finished T&A products [11]. Further, the complementary branches of industry, such as T&A machinery, utensils, and spare parts production, which supported the textile industry were well-developed in Serbia [7]. A specialised educational system, which contributed to the human resources foundation of the textile industry, was also maintained in both the secondary and higher education systems [11]. Although it is difficult to find distinct trade data for each country within the Federation, previous research found that in 1989, Yugoslavia was the third largest apparel supplier to the European Union in the world after Hong Kong and Turkey, respectively [5, 20].

In the early 1990s, further development of the Serbian T&A industry was forcefully brought to a halt due to the collapse of the Yugoslav Federation, which was followed by periods of separate but related ethnic wars in the region of the former Yugoslavia. First, the national market was significantly reduced from a population of 25 million in the federation of six countries to slightly more than 7 million in independent Serbia [11]. Second, the long isolation of Serbia during the period of international political and economic sanctions (a series of sanctions imposed during the 8 years from 1992 to 2000) had an adverse impact on Serbian producers' capacity to compete on a more challenging international field [47]. Third, a unilateral customs duties reduction to a level lower than the European Union average, combined with a foreign currency depreciation, resulted in a competitive environment adverse to the further growth of the textile industry in Serbia [12]. Consequently, Serbia's T&A industry was left without a number of conditions that were necessary for it to maintain its competitiveness [33]. For example, branches of industry that supported the development of the T&A industry during the 1980s, such as machinery, utensils, and spare parts production, were made ineffective during the period of war and political and economic crisis. Similarly, licensed pro-

duction of textile mill equipment for foreign vendors was brought to an end [7]. Furthermore, the raw material segment of the T&A industry disappeared completely as a result of a failed privatisation process [47], resulting in further deficits in this sector [12]. Due to these changes, in the period beginning in the 2000s, the Serbian T&A industry was essentially reduced to processing and finishing services for West European apparel retailers [7, 11, 36, 43].

Following the period of long crisis, in a transition period from 2001-2010, impetus for a new wave of economic growth was created in Serbia [17]. Through the active role of government institutions in signing bilateral and multilateral agreements on free trade, conditions became right for a growth in Serbia's T&A product exports to countries with significantly higher market absorption potential [34]. Several important bilateral and multilateral free trade agreements were signed during the transition period from 2001 to 2010. First, ratification of the Free Trade Agreement with the Russian Federation provided duty-free access to a wide range of goods in the huge export market of the Serbian T&A industry to this region [34].

Second, multilateral liberalisation trends continued with the ratification of the Agreement on Trade in Textile Goods between the Republic of Serbia and the European Community (ras.gov.rs). With this first free trade agreement, the European Community clearly confirmed its interest in the location of T&A processing and finishing work in Serbia [12, 43]. Third, with the expiration of the adjustment period and the beginning of duty-free importing of T&A products from the European Union, the Agreement on the Amendment of and Accession to the Central European Free Trade Agreement – CEFTA 2006 (ras.gov.rs), signed a year before by non-EU countries, was adopted in July 2007. It was in effect within the area covered by Serbia, Bosnia and Herzegovina, Croatia, Montenegro, Macedonia, Albania and Moldova, and it provided for the cancellation of customs duties for T&A products as well, thus additionally expanding opportunities for exporting textile products among these mainly Central and South-Eastern European markets.

Finally, Serbian T&A industry growth was supported through the implementa-

tion of the Free Trade Agreement with Turkey, which took effect in September 2010 (ras.gov.rs). This agreement was related to duty-free importing and brought the advantages of the accumulation of goods from trade with Turkey, particularly raw and supporting materials, utensils and spare parts, as well as sewing and washing equipment to satisfy domestic deficits in these areas [11]. Research focused on the T&A industry during the transition phase in Serbia has revealed that bilateral and multilateral free trade agreements signed during the transition period (2001-2010) were important for sustaining growth in the years following the transition [17]. Furthermore, research studies and governmental reports published since the 2000s have shown that contracting/outward processing accounted for the growing volume of exports [7, 12], while the decline in the production of raw materials and fabrics was compensated for by imports of those items [12]. In 2016, the Clean Clothes Study, focusing on Serbia, found that there were 1.800 small and medium-sized textile and apparel factories registered in this sector, while the total number of formal and informal workers was estimated at 100.000 [43].

### **Assessing the trade competitiveness of the nation**

Despite the large volume of papers on this topic, there is no unified theoretical framework for competitiveness analysis and assessment. The competitiveness of a nation or the competitiveness of a particular industry within a nation has been examined from various research standpoints. [19] classified papers on competitiveness into three groups. The first includes papers based on the classical school of economic thought, primarily the contributions of Adam Smith and David Ricardo. Papers in the second group rely on the achievements of the neo-classical school, using the Heckscher – Ohlin (1933) model and the theoretical contribution of Walt Rostow to our understanding of development economics. The third group of authors reject the theoretical contribution of the classical and neo-classical schools while focusing on the endogenous theory of economic growth [25, 18], and new economic theory.

As there are different theoretical frameworks for assessing competitiveness, there are numerous approaches to its measurement. For instance, [37] di-

vides concepts for measuring competitiveness into macro and micro levels. According to a certain more recent paper [38], competitiveness is measured on different levels of economic analysis: mega- (global), macro- (nations, region), meso- (economic sectors of industry), and micro- (firms) levels. Furthermore, competitiveness measurements may differ depending on the number of factors included in the analysis. For example, *one-dimensional* analysis is focused on a single factor (e.g., [27]); *two-dimensional* analysis explores two factors (e.g., Real Effective Exchange Rate-Helleiner, 1991), while *multidimensional* analysis accounts for a variety of factors that may affect competitiveness (e.g., [33]).

In his book *The Competitive Advantages of Nations*, (1990) Michael Porter proposed a new multidimensional approach for assessing competitive advantages of a nation. He named this comprehensive conceptual model of national competitiveness *the competitiveness diamond*. Porter's competitiveness diamond has four interrelated determinants: (1) production factors (capital, labour, and land), (2) demand conditions, (3) related and supporting industries, and (4) company strategies, structures, and rivalries. Additionally, this model also accounts for exogenous factors: (5) the role of government and (6) opportunities. According to Porter, competitiveness will (probably) improve industry segments the most in nations where the diamond structure of various determinants is most favorable [33]. Porter's theory has been widely used to assess the competitive growth of T&A industries in various nations. For example, [51] investigated factors relevant to sustaining the competitive advantages of Thailand's apparel industry in the global market. [22] used the diamond approach to assess the competitiveness of Korea's apparel industry. [30] applied Porter's theoretical framework to assess the market conditions of the apparel markets in Japan and the United States. Although some aspects of socialistic market conditions were investigated in the ex-Yugoslavian region prior to the 1990s [48, 2], little is known about other determinants that have contributed to the growth of the Serbian T&A industry in more recent history. Thus, to understand which key factors have enabled competitive growth to happen, the following research question was posed:

*RQ 1: Which determinants have contributed to Serbian T&A industry trade competitiveness in the years following the transition period?*

#### **Measuring trade competitiveness using the RCA**

One of the methods most commonly used for assessing a nation's competitiveness in products, product groups, and individual industrial sectors is the "revealed comparative advantage index" or RCA index, developed by [3]. The RCA index compares the export share of a specific commodity with the export share of that commodity or sector in the world market [9], as presented in the following formula:

$$RCA_{ij} = (K_{sij}/K_{sit})/(K_{snj}/K_{snt})$$

Where,  $K_s$  is the export,  $i$  the country,  $j$  the commodity/sector,  $n$  the world or a group of countries, and  $t$  is all groups of products.

The RCA index aims to assess whether the goods selected are more important for the export market of a country than they are for other specific trading partners. According to the RCA formula, a country has a comparative advantage in goods when the index is higher than 1 ( $>1$ ). When the index is lower than 1 ( $<1$ ), a country has a comparative disadvantage. The popularity of the RCA measurement lies in its relative simplicity, its ability to use comparable clusters of data, such as SMTK-based trade data, for analysis, and its reliability as an indicator of real changes in comparative advantage [29]. Nevertheless, this method has been criticised because it takes into consideration only the question of exports and ignores that of imports [28]. Another objection is the fact that in the case of a country having a "comparative disadvantage," the index varies from zero to one, while if it has a "comparative advantage," the index ranges from one to indefinitely many advantages [49]. Although discussions for and against Balassa's index are still current in the literature, it has been used widely to assess the competitiveness of the textile and apparel industry in China [9], India [26], and Pakistan [23], as well as technical textiles in the USA [10]; and T&A industries in the Balkan region [41]. Assessing Serbian T&A exports between 2001 and 2011, [12] found that this part of the Serbian economy had shown dynamic growth during those ten years. While it is acknowledged that competitiveness assess-

ment using Porter's theory is limited to an economy's, and not quantifiable, nature [10], export competitiveness in the Serbian T&A industry has been further quantitatively assessed using the RCA index and trade data. In this context, the following research question is posed:

*RQ 2: Were Serbian T&A industry exports to the EU-28 market in the period analysed (2007-2019) revealed to have a comparative advantage according to the RCA index?*

#### **Measuring trade competitiveness using the Trade Performance Index (TPI)**

For the purpose of a complex analysis of phenomena related to the competitiveness of a nation's exports, the International Trade Centre (ITC) developed the *Trade Performance Index* (TPI) within the ITC's Market Analysis Section [45]. A detailed technical elaboration and application of the index were also provided within ITC and World Trade organisation reports [45]. As the TPI is a composite index, indicators are divided into three groups. For every country and every sector, the TPI provides indicators of a country's general profile and position-performance, as well as a decomposition of its share change in the global market. Overall, the TPI consists of 22 quantitative indicators of trade performance. For simplicity, these indicators are presented in absolute terms and are combined to make it possible to rank countries. All these pieces of information are grouped into three categories relating to the country's "general profile," the country's "current performance," and the "decomposition of share changes in trade performance" [45]. The application of selected TPI indicators can be found in the official reports of the most relevant international organisations (e.g. *OECD*, *UNCTAD*, *G7 World Bank*). In academic publications, the TPI index is widely used for establishing the competitiveness level of specific sectors of national or regional economies, with a detailed analysis of the competitiveness of export leaders. For example, [16] used TPI indicators to assess the competitiveness and export performance of Italy. [6] applied the TPI index to analyse the Export Diversification Process. [1] used the index to compare the export performance of the processing industries of Germany and Italy.

Previous research has shown that, as in the case of the RCA index, the measuring of competitiveness using the TPI is based

on international data on the exporting of specific goods and groups of goods, as well as on industrial branches or sectors. However, unlike the RCA index, not only does the TPI consider absolute trade values but also the size and specialisation of every country, as well as all disadvantages resulting from excessive concentration on the exporting of certain products or on designated markets [15, p. 7]. Thus, the TPI index is particularly useful in situations where the share of the sector in overall exports is overemphasised, which might result in high values for RCA. In such a case, the TPI index provides a more balanced insight into the competitiveness of a given sector. For example, previous research on the competitiveness of the textile trade in Albania and North Macedonia, Balkan countries in transition, showed high values for the RCA index due to the deformed economic structures and overemphasised share of the textile sector among overall exports in those countries [17]. As opposed to the results obtained when competitiveness was assessed using the TPI index, the results obtained using the RCA index provide a more balanced and, therefore, more realistic insight into the competitiveness of a given sector [17]. To validate the RCA index assessments [15] and gain a more balanced insight into the competitiveness of Serbian T&A industry exports, selected TPI indices were used and the following research question was posed:

*RQ 3: Did Serbian T&A industry exports achieve a growing market share in the EU-28 market according to the selected TPI indicators during the period of analysis (2007-2019)?*

## Method

### United Nations' Statistics Database, Comtrade- ITC trade map

In this study, the competitiveness of Serbia's T&A exports and industry products in the EU-28 market was analysed through calculating the RCA index and selected TPI indicators using data from the largest trade database in the world, *The United Nations' Statistics Database-Comtrade*. The data were accessed via the websites *UN Comtrade*, a database of information on countries and territories (intracen.org), and *Trade statistics for international business development-Trade map ITC Geneva* (trademap.org). The latter statistical database covers 184 countries, accounting for more than

95% of world trade, with 5.000 products registered at the 6-digit level of the Harmonized System (HS). The Harmonized Commodity Description and Coding System (HS) employs the nomenclature developed by the World Customs Organization (wcoomd.org). The HS encompasses groups of products defined at the 6-digit level, using 4-digit tariff headings, where the first two digits designate a chapter and the remaining two a heading within that chapter, whereas a tariff sub-heading is a 6-digit code in which the additional two digits designate the position of that tariff sub-heading within that tariff heading (wcoomd.org). The trade data obtained from the UN Comtrade database for Serbia refer to the period 2007-2019, which represents the defined time-frame in this study.

### Composition of the data: Division 13-textiles and Division 14-apparel

According to the latest International Standard Industrial Classification of all Economic Activities – ISIC Revision 4 [44], the export data for Division 13 – the Manufacture of Textiles included the following groups of products: silk; wool, fine or coarse animal hair, horsehair yarn and woven fabric; cotton; other vegetable textile fibres; man-made filaments and fibres; wadding, felt and nonwovens; special yarns, twine, cordage, ropes; lace, tapestries, trimmings, embroidery; knitted or crocheted fabrics; worn clothing and worn textiles. Data for Division 14, the Manufacture of Apparel; included the following group of products: apparel and clothing accessories, knitted or crocheted; apparel and clothing accessories, not knitted or crocheted; headgear.

### Approach

Based on the research scope of this paper, the authors opted to use two frequently used quantitative methodologies to assess Serbia's T&A industry's competitiveness: Balassa's Revealed Comparative Advantage Index and selected Trade Performance Index indicators developed by the ITC's (International Trade Center's) Market Analysis Section. In addition to these quantitative tools, [33] theory of The Competitive Advantage of Nations was used to assess the key determinants that have contributed to the competitiveness of Serbian T&A exports. For that purpose, the authors used public data published by the Serbian Government association for development (ras.gov.rs), and data provided by the Serbian Association of International Road Haulers

(public data translated from the Serbian language, pumedtrans.com/). The objective of this combined methodological approach is to identify the shortcomings in each individual result and to correct and complement them with the results of other measurements, in order to gain a more comprehensive insight into the competitiveness of Serbia's T&A industry.

### Instruments and procedures

Analysis of the competitiveness of Serbia's T&A industry in the EU-28 market was conducted using the [3] index of Revealed Comparative Advantage (RCA) through calculating the values of this index for selected years for the groups of products from Divisions 13 and 14 separately, and for all the groups of products from both divisions combined, i.e., for the entire T&A industry. Comparing the results obtained for all the years in the period analysed made possible the identification of a dominant trend.

The value of the RCA index for a specific year was calculated by dividing the sum of the value of the national exports of product groups from a specific division to the EU-28 market by the total national exports to the EU-28 market for that year, i.e.,  $\sum K_{sij}/K_{sit}$ , where  $K_s$  is the export,  $i$  the country – Serbia,  $j$  the product group, and  $t$  is all the product groups.

The quotient obtained was divided by the quotient of the total world exports of product groups from the same division to the EU-28 market and the total world exports to the EU-28 market, i.e.,  $(\sum K_{snj}/K_{snt})$ , where  $K_s$  is the export,  $j$  the product group,  $n$  the world,  $t$  all the product groups, and  $y$  is the year.

Thus, the complete formula was:

$$RCA_{ijy} = (\sum K_{sij}/K_{sit})/(\sum K_{snj}/K_{snt}),$$

where  $y$  is the year analysed.

The analysis of the competitiveness of Serbia's T&A industry in the EU-28 market using the TPI instruments selected was based on calculation of the market share of national exports for the year selected, both for the groups of products from Divisions 13 and 14 separately and for all the groups of products from both divisions combined, that is, for the entire T&A industry. The formula for calculating the market share of specific product group exports in the EU-28 market in a year was:

$$MS_{ijy} = (\sum K_{sij}/\sum K_{snj}),$$

where MS is the market share, Ks the export, i the country (Serbia), j the product group, n world exports to the EU-28 market, and t is the year.

The absolute change in the market share of the exports of a specific product group in the EU-28 market for a specific period was calculated by subtracting the value of the market share at the beginning of the period from that at the end based upon the following formula:

$$AcMS = MS_{ijy} + 12 - MS_{ijy1},$$

where y1 stands for 2007, and y+12 for 2019.

In the case of a positive result, the absolute growth of the market share and the competitiveness of the exports of the given product group to the EU-28 market were recorded [12]. Relative change in the market share of exports of specific product groups in the EU-28 market for a specific period was calculated by dividing the value of the market share at the beginning of the period from the value at the end. The following formula was used:

$$RcMS = MS_{ijy} + 12 / MS_{ijy1}.$$

A positive result represents growth of the market share and competitiveness of the exports of the given product group to the EU-28 market in terms of the percentage of total exports [12].

## ■ Results and discussion

*RQ 1: Which determinants have contributed to the Serbian T&A industry's trade competitiveness in the years following the transition period?*

Several determinants contributed to the Serbian T&A industry's competitiveness in the years following the transition. One of the main factors in Serbia's emerging competitiveness was skilled and well-trained labour. The most recent educational improvements have included stronger alignment between school curriculums and the needs of the textile and apparel industry, which has ensured a steady supply of qualified textile workers [7]. Another important determinant was relatively low labor costs. According to the latest data available, in 2017 (as of January 1) the legal minimum net monthly salary was €189 (the amount given here corresponds to a month with 176 hours worked) [43]. According to a USAID report from (2014), since that year, Ser-

bia, with labor costs of €0.5-0.7 per norm hour (n/h), has remained the country with the lowest labour cost in the region (equal to that of North Macedonia and Ukraine), and therefore that country is more competitive than Romania (€0.11-0.13 n/h), Bulgaria (€0.10 n/h), Croatia (€0.14 n/h), Slovakia and Hungary (€0.12 n/h), as well as Poland and the Baltic countries (€0.12 n/h). Higher labour rates were also registered in Morocco (€0.12 n/h), Tunisia (€0.10-0.11 n/h), and Turkey (€0.10-0.15 n/h). In the European Union countries, labour costs range from €0.19 n/h in Greece, to €0.28-0.38 in Italy and €0.60 in Germany [46, p. 60].

The geographical location has also provided Serbia's T&A industry with an inherent competitive advantage in transportation costs. In 2019, with an average transportation cost of €0.9-1.0 per kilometer in one direction, from Serbia to Italy, Serbia to Germany, and Serbia to France, in a 120 m<sup>3</sup> truck (Serbian Association of International Road Haulers – public data translated from the Serbian language, pumedtrans.com/), Serbia had lower transportation costs than Ukraine, North Macedonia and Romania, which were prospectively considered the most cost-efficient locations for finishing jobs in that area of Europe.

Furthermore, the government has played a significant role in enhancing foreign trade [39]. Competitive government subsidies have secured an inflow of foreign direct investments [34]. These have included favourable long-term leasing and free-of-charge land with a functional infrastructure, direct incentives for new jobs, and tax benefits in the first years of business operations [43]. Demand for T&A processing and finishing jobs have come primarily from Italian (37.4%), German (13%), and French fashion retailers [43]. Additionally, the highly sophisticated production of renowned European brands has also required the latest technology as a prerequisite for quality and high productivity in finishing jobs. In Serbia, the process of technological modernisation has been applied primarily in small and medium-sized enterprises [43], which have benefited from the advanced development of automation processes in the phases of design and in the technical preparation of production [11, 14, 47]. As a result of all of these multidimensional factors, the rapid growth of the T&A industry in Serbia has been made possible.

*RQ 2: Were Serbian T&A industry exports to the EU-28 market in the period analysed (2007-2019) revealed to have a comparative advantage according to the RCA index?*

The authors' calculation, based on International Trade Center data (accessed on the website www.intracen.org), indicated that between 2007-2019, the exports of Serbia's textile industry to the world rose from €398.1 million to €937.6 million, representing a cumulative increase of 135.5%. Serbia's textile industry exports to the EU-28 market rose from €327.4 million to €650.2 million, representing a cumulative increase of 98.7%. In the same period, global exports of textile products grew by 22%, and exports of these products from the entire world to the EU-28 market grew by 24%. Additionally, Serbia's exports in division 13 registered higher growth dynamics than those in division 14 in both the European and global market.

Regarding the regional export orientation, the dominant market for Serbia's T&A industry was the European Union, which accounted for 69.3% of the country's total T&A industry exports in 2019. Specifically, the EU-28 market accounted for 63.9% of division 13 exports and 72.3% of division 14 exports in the same year (authors' calculation). It is evident that the dynamic growth of Serbian exports to the EU-28 market in the country's initial transition period was followed by stabilisation of the regional structure of exports from the T&A industry, which achieved a share of more than 70% in this large market. Furthermore, a tendency toward diversification, leading to the faster growth of exports of a wide range of products from division 13, which was symbolically present in the transition period, was evident in the growth of exports. The trends in Serbia's T&A industry's exports described above were a result of the change in the structure of export jobs leading to the dynamic growth of finishing jobs in both division 13 and division 14, which were fully oriented toward export to the EU-28 countries. The competitiveness of the Serbian T&A industry measured by the RCA index indicates the existence of clear comparative advantages throughout the period analysed (*Table 1*).

In the period analysed, according to the authors' calculations, Serbia's total exports to the EU-28 market rose by 72.7%,

**Table 1.** RCA and TPI Indicators of the Competitiveness of Serbia's textile industry exports in the EU-28 market (cumulative score 2007-2019). Note: Authors' calculation based on statistical data at website www.intracen.org (Trade statistics-International Trade Center). Visited from 08/27-09/15/2020.

Indicators	Year												
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Market share(%), div. 13	0.05	0.05	0.06	0.07	0.09	0.10	0.11	0.15	0.17	0.18	0.20	0.23	0.25
Market share(%), div. 14	0.38	0.38	0.36	0.36	0.35	0.27	0.31	0.33	0.32	0.34	0.35	0.33	0.34
Market share(%), div. 13+14	0.22	0.23	0.23	0.23	0.24	0.21	0.23	0.25	0.26	0.27	0.30	0.30	0.31
Absolute change of the market share (%), div. 13													+0.20
Absolute change of the market share (%), div. 13													-0.04
Absolute change of the market share (%), div. 13+14													+0.09
Change in E-28 market share (%), div. 13													+400
Change in E-28 market share (%), div. 14													-10.5
Change in E-28 market share %, div. 13 + 14													+42.8
RCA index (%), div.13	0.50	0.48	0.61	0.58	0.77	0.88	0.75	0.94	1.04	1.00	1.05	1.15	1.17
RCA index (%), div.14	3.79	3.45	3.43	3.06	2.88	2.26	2.03	2.08	1.98	1.88	1.82	1.67	1.71
RCA index (%), div.13+14	2.20	2.07	2.19	1.94	1.95	1.70	1.47	1.60	1.59	1.50	1.51	1.47	1.49

or by twice more than the total exports of its textile industry. This conclusion is also confirmed by the fact that in the same period, the cumulative growth rate of exports of textile products from the whole world to the EU-28 market was 24.6%, significantly lower than that of Serbia's textile product exports.

An increase in RCA index values was continuously recorded by division 13. Although due to low initial values, this division began to demonstrate clear competitive advantages as late as 2015 (*Table 1*). A drop in RCA index values for division 14, in addition to a reduction in the relative share of exports of this textile product group in the total exports of Serbia to the EU-28 market, was also a consequence of the faster growth of exports of products in this division from the whole world to the European Union countries, cumulatively, at a rate of 45.01%.

*RQ 3: Did Serbian T&A industry exports achieve a growing market share in the EU-28 market according to the TPI indicators selected during the period analysed (2007-2019)?*

The positive dynamics of the growth of Serbia's T&A industry's exports to the European Union countries resulted in a continuous increase in its share of the EU-28 market. Although these are, in some cases, marginal values (e.g., as shown in *Table 1*, the market share for divisions 13 and 14 in 2019 was 0.31%), both TPI indicators point to a gain in competitiveness (*Table 1*). In the peri-

od analysed, the entire T&A industry in Serbia recorded an absolute market share rise of 0.09%, that is, a relative increase of 42,8% (*Table 1*). Additionally, a relative growth in the market share of division 13 products of 400% was recorded, while that of division 14 stagnated due to growing global competition in the apparel trade.

Prior to the global economic crisis in 2008, and due to relatively fast export growth, the share of Serbia's T&A industry also recorded continuous growth in its dominant market [12]. During and immediately after the crisis, there were no significant changes in this competitiveness indicator. In 2011-2012, a market share decrease was evident in division 14, corresponding to an absolute drop in exports for this group of products. This decrease was largely a consequence of a drop in absorption capacity in the EU-28 market during the crisis years, due to reduced economic activity in the countries in this economic group.

A brief insight into the competitiveness of the T&A region of the Western Balkans, to which Serbia belongs, in the EU-28 market, with a comparison of national results, may be of further interest. The volume of demand for T&A in the EU-28 market increased by 28.6%, from 185.3 to 238.2 billion, while the export of the Western Balkans region to the EU-28 market of these products in the stated period increased 54.9%, from 1.6 to 2.4 billion euros. This dynamic of changes in the T&A market is a clear

indicator of the growth in the competitiveness of exports of these products in the Western Balkans, which illustrates the growth in TPI indicators of the market share from 0.632 in 2007 to 0.766 in 2018. The very volume of the market share of this region, which is below 1%, shows its marginal impact on the trends of the T&A market in the EU-28. However, the very fact of the absolute and relative growth of the market share is an indicator of positive trends in this area in the entire period observed [13, p. 11].

The indicator of the market share of T&A exports of national economies in the region to the EU-28 market gives partially different results. All countries in the Western Balkan region recorded a relative and absolute decline in exports in 2009 and 2010 due to the effects of the global economic crisis. In the period 2011-2016, Albania recorded a continuous growth in its market share, as did Bosnia and Herzegovina. In both countries, the relative share of the growth in the market share of apparel production is significantly higher, in the case of Albania the indicating number is around 95% and 75% in Bosnia and Herzegovina. The only country in the region that saw a decline in the market share of T&A exports to the EU-28 market is North Macedonia, which also has the largest exports to the region. The market share of Serbia's T&A exports to the EU-28 market, as in the case of Albania and Bosnia and Herzegovina, after the fall in the years of crisis, continued to grow until 2016. As in the case of North Macedonia, the

contribution to the growth of the market share is increasing in textile exports [13].

In the case of the Western Balkans region, the RCA index shows values higher than 2 in the entire period observed, which is an indicator of the high specialisation of the region in the export of T&A products. However, given that this is a sector with a low technological level of products, among other indicators, it can be an indication of the inadequate industrial structure of the region. On the other hand, the declining value of the RCA index expresses the process of diversification of production for export in the region, as a source of growth of economic activity; then again it also expresses the declining competitiveness of the region at a global level. The RCA index shows extremely high values in the case of Albania and North Macedonia, which is an indicator of the high specialisation of these national economies in the direction of T&A production and exports. At the same time, the high national competitiveness of this sector indicates an inadequate structure of the manufacturing industry, subject to high risks for economic growth. The high but declining RCA index of these national economies similarly indicates positive tendencies of structural changes. The opposite tendencies are in Bosnia and Herzegovina, which continuously relies on this sector for economic growth, with a slight tendency of growth in the RCA index. Serbia records a positive but declining level of this index due to the pronounced diversification of exports to the EU-28 market [13].

## ■ Conclusions

Despite the adverse economic and political circumstances in the years before 2000 and during the transition period, the rise of the Serbian T&A industry has, since 2007, contributed to the economic strength of Serbia, a country which is not an EU member, but is still a very important player on the textile scene in Europe. The competitiveness of the Serbian T&A industry, measured by the RCA index and selected TPI indicators, confirms that this industry sector retained its strong and distinguished export potential in the time frame of interest (2007-2019). The export potential was particularly evident in the context of the EU-28 market. Other export activities from this sector in the time frame under investigation went primarily to the CEFTA countries, and these activities showed a mild increase,

due to the low absorption capacity of the markets of those countries as well as to intensified competition from Turkey and China's textile and apparel product offerings in the CEFTA market [39]. An exception was the regular T&A exports to the Russian Federation, which accounted for 9.7% of the total industry exports in 2016 [43]. Furthermore, this study, has revealed multiple determinants that have contributed to the Serbian T&A industry's competitiveness in the years following the transition. Some of the determinants are inherent in the Serbian market, including its close geographical proximity to all EU markets, which further reduces product shipping and transportation costs [35]. Another strength of the Serbian T&A industry is its labour force. On the one hand, there are numerous competent and experienced textile workers who were previously employed in state factories, but after these factories closed, the workers lost their jobs and were forced to actively look for work. On the other hand, there is a specialised and well-developed education system which continues to provide well-trained labour. Lastly, the role of government was critical in enhancing foreign trade, since free trade agreements and competitive government subsidies secured an inflow of foreign direct investments needed to counterbalance the problems of low domestic savings and a lack of investment capital.

## Theoretical implications and future research

This research confirms that Serbia, a low-income country in the Balkan region, continues to play an active role in the international textile and apparel trade. Nevertheless, this study has touched on some new topics that deserve further, closer, exploration. First, beside the fact that in the time frame investigated (2007-2019), Serbia's T&A industry was progressing, local economic policy makers overlooked the potential contributions of this sector to the overall development of the Serbian economy, perceiving it as a relic of the country's socialist past [32]. The economic policy in Serbia (unlike in other countries where the growth of the local T&A industry was stable and the economic policy supportive) was seen as not favorable to Serbian T&A industry development [12, 17]. Some experts believe that unilateral customs duty reduction to a level lower than the European Union average, combined with foreign currency depreciation, left the Serbi-

an domestic market without effective protection during the transition phase [12]. As a consequence, the Serbian T&A market quickly became oversaturated with raw materials from Turkey and China, which soon led to a deterioration in the local raw material production capacity and to the closures of many textile factories which had been built across the country during the socialist regime [7]. Thus, unlike in late 1980s, when 90% of Serbian T&A production inputs were produced locally, more recent circumstances enabled Serbia to import 90% of the production inputs for its apparel industry [43].

Further, an inevitable drop in the profitability of local textile and raw material producers reduced domestic investments in the textile enterprises to a minimum. Thus, what remained of the once powerful and vertically integrated T&A industry in Serbia has now been transformed into a sector highly dependent on EU buyers and manufacturers who have delegated logistical and contracting functions to Serbian affiliates, who now assume responsibility for finishing jobs, including assembly lines, pressing and packing, warehousing, and quick shipping to markets in EU countries [5, 40]. Because of political and economic reforms in Serbia in the last 30 years, its T&A industry is still witnessing significant changes. Therefore, the impact of economic policies on Serbia's T&A industry's restructuring must be separately assessed. Likewise, even though the current researchers are in agreement with those of previous studies [11, 12] in believing that the dynamic export growth of the Serbian textile industry since 2007 has been primarily due to the increase in outward processing and subcontracting jobs for Western retailers [see also 43], additional research is needed to examine the value that this type of trade achieves as part of the overall Serbian T&A industry exports.

## Practical implications

Some determinants identified in this study may have practical implications for EU-based retailers or manufacturers who are considering new sites for low-proximity sourcing. For them, established expertise and labour skills, combined with proximity, lower costs, and delivery in-time may be paramount for selecting Serbia as an affiliated production site. However, it is also worth mentioning that as small and medium-sized enterprises and

factories account for 99 percent of local T&A producers in Serbia, this also represents a practical obstacle to large-series production. Therefore, small-series production (or sudden changes in working orders, as well as additions to the large-series already delivered), with a short deadline of deliveries directly to retail customers, representing a new form of Serbian T&A industry specialisation, may be more profitable. Because small and medium-sized enterprises are important for further sector growth at a national level, this study's findings might be useful to attract investments in the private sector of Serbian T&A enterprises to reinforce technology transfer and production innovation as well as further reinforce its competitive advantage in the T&A field.



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52. Table 1. RCA and TPI Indicators of the Competitiveness of Serbia's textile industry exports in the EU-28 market (cumulative score 2007-2019).

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