STRUCTURAL CHANGES IN FOREIGN TRADE AS A FACTOR OF COMPETITIVENESS OF THE REPUBLIC OF SERBIA

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Abstract: The paper aims to analyse structural changes in foreign trade based on systematic statistical data as a factor of competitiveness of the Republic of Serbia. First, contemporary tendencies in international trade are analysed, where the value and volume of world trade are monitored, as well as key changes in the structure of world exports and imports in the observed period. By assessing the position of the Republic of Serbia in international trade, it is necessary to consider the extent to which the foreign trade of the Republic of Serbia adapts to the structural changes in world trade. Then, the structure of the merchandise exchange of the Republic of Serbia according to the purpose of the product is examined as well as the structure of the merchandise exchange according to sectors and commodity groups. Later in the paper, the achieved development of the industry is questioned, where the focus of the analysis is put on the quality of exports and the international competitiveness of the manufacturing industry, which in the Republic of Serbia produces most of the exchangeable goods. The last part of the paper deals with the analysis of the technological structure and factor intensity of Serbian goods exports. In this way, the research question is answered that there is a need for structural changes in production and foreign trade in the Republic of Serbia in order to improve its competitiveness.

1. Introduction

The functioning of a country's economy cannot be imagined without the involvement of foreign trade. As the world market becomes more demanding, it is necessary to make structural changes in industrial production to improve the export competitiveness of the domestic economy. The structure of world exports and imports indicates that industrial products have the largest share in trade. Additionally, Araujo et al. (2017) argue, when analysing Brazilian economic growth and structural changes that countries should shift from exporting primary products to goods with greater elasticity of demand because it is less under the pressure of changes in foreign markets and by doing this they would have higher growth rates.

According to most indicators, the Republic of Serbia increased its share of higher value-added products in its exports after 2006, indicating a slight improvement in the structure of domestic exports and adjusting to the import demand of developed countries. However, the participation of the Republic of Serbia in the world trade in goods is still negligible, which indicates an unfavourable export structure concerning some countries in the region. On the other hand, the structure of exports according to economic purpose over a longer period is deprived since the most represented are products for reproduction, followed by consumer goods, and the least equipment. When considering the commodity structure of imports, the dominant share still has raw materials and machinery and equipment have the least of all, which cannot be evaluated in a positive context, especially not for the economy that requires importing capital assets and new technologies. The technological structure and specialization of the export industry are dominated by low-tech intensive products, where the smallest shares have high-tech intensive products with an average of about 4%. When it comes to changes in factor intensity, it can be seen that since 2012, the factor intensity of commodity exports has improved, but these changes have not significantly enhanced the structure of domestic exports and created conditions for its long-term growth and greater competitiveness of the economy. The quality of Serbian exports is still far behind the quality of exports in European Union (EU) countries, and to a lesser extent to the quality of exports in the surrounding countries.

This paper attempts to address the issue of structural changes in the foreign trade of the Republic of Serbia. Therefore, the paper is organised as follows: after the introduction, the theoretical overview of the advantages of structural changes in foreign trade is given firstly. Section 3 analyses contemporary tendencies in international trade, while Section 4 presents the position of the Republic of Serbia in international trade. Given the above-mentioned research goal, the following section points out the structure of the merchandize exchange of the Republic of Serbia and the last section represents structural changes in the industry as a factor

of increasing export competitiveness. At the end of the paper, concluding remarks, implications for the practice and limitations of the study are presented.

2. Theoretical reference to structural changes in foreign trade as a factor of increasing the competitiveness

Qualifying the structure as favourable or unfavourable stems from empirical data showing that most developed countries have an export and import structure predominantly based on the products in a high stage of finalization (which generate significantly higher revenues per unit). The structure of the exchange is an indirect indicator of the achieved development. It has been confirmed that countries, whose primary products dominate in exports, at a certain level of development have to diversify their export offer towards more sophisticated products or there will be a slowdown in economic growth and reduction of competitiveness (Nikolić, 2010, p. 75). In the study, Worz (2004) argues that competitiveness of industries with lower technology, and even in resource-intensive and primary-intensive industries can be also built on, but based on low labour costs as a major element of competitiveness. The same study deals with the testing of the Linder hypothesis, which indicates that countries with similar levels of development are more likely to trade in the same or similar products (potential trade intensity generally increases with GDP *per capita* in the observed countries, and vice versa).

   Many studies analysed countries' (Viszt & Borsi, 2001; Huang et al., 2017; Rekiso, 2020) or sectors' (Svobodová, 2014; Sirgments et al., 2019) foreign trade balances and effects of structural changes in production. Rekiso (2020) states that, by analysing Ethiopian trade balance over one century, it was found that trade deficits are not influenced by a transition of a country, rather by the unfavourable structure of exports and majorly by economic reliance on low skill and backwards-technology. The trend of exporting low-value-added and technologically backward goods and importing goods that are high skill and technologically advanced has led to a trade deficit of the country (Rekiso, 2020). On the other hand, China has transformed its economy from product-based to largely manufacturing-based since opening to the world trade in the 1980s. Additionally, this country is conducting structural changes in recent years (after the Global Financial Crisis) to become a high-technology industry (Huang et al., 2017). The results of a study conducted by Leve and Van den Berg (Lewer & Van den Berg, 2003) are also indicative of where they tested Mazumdar's hypothesis (Mazumdar, 1996) on 28 OECD and developing countries. The results of this study have shown that trade structure is a major driver of economic growth. Namely, countries that import rather capital goods and export consumer goods are growing faster than countries that export capital goods.

A study conducted by Damijan, Rojec, and Ferjančić (2011) shows that significant growth in exports of countries in transition was one of the most prominent features of the transition and EU integration process. Access to the EU market is of great importance for export performance, but it does not fully explain the differences between countries. The differences were mainly caused by internal factors and availability of capacity, where stable institutions, structural reforms, and targeted investments were at the forefront. Another study is very indicative for the Republic of Serbia, which shows that trade could have a significant impact on growth, and therefore on an increase of competitiveness in countries with poor institutions, as it would encourage reform and lead to a higher stage of specialization (Bolaky & Freund, 2004).

According to previously presented literature overview of structural changes in foreign trade in many countries whose effects could be a driver of countries' competitiveness, the authors are proposing following research question: Is there a need for structural changes in the foreign trade of the Republic of Serbia? Using data for world's and countries' level production structure and foreign trade, the paper will try to answer how the Republic of Serbia could make structural changes in the economy from mainly low-technologically to high-technologically intensive producer and exporter.

3. Contemporary tendencies in international trade

Among the key elements that have marked contemporary trends in the world market, the growth in volume and value of international trade flows holds a special place. In the second half of the 20th and at the beginning of 21st century, there was a more intense growth of world trade relative to world production, so that industrial export was the dominant growing element of international trade. At the beginning of the 21st century, there was a more intense growth of world trade relative to world production, so that industrial export was the dominant growing element of international trade.

The volume of world merchandise trade increased by 4.6% in 2017 which represents the highest growth in recent years. The same year also saw the highest growth in the value of world merchandise trade (10.9%) compared to the observed period (Graph 1). In the next, 2018 year the growth of world commodity exchange was at a lower level than in 2017 and amounted to 3.0% (WTO, 2019).

Graph 1. World merchandise trade volume and real GDP at market exchange rates, 2008-2018 (Indices, 2008=100)
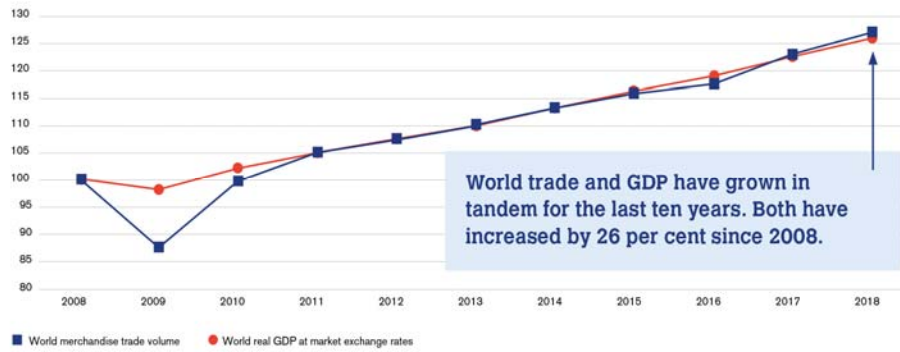
Source: WTO (2019). *World Trade Statistical Review 2019*. Geneva: World Trade Organization, p. 10.

In the total world export of goods from 2010 to 2018, the highest share was recorded in the growth of agricultural products (3.9%), followed by processed products (3.4%), and the lowest share was noted by fuels and mining products (1.3%). In line with preliminary data for 2018, the growth of agricultural products export was higher than all observed parameters. After 2008, the share of world export between 2010 and 2018 had faster growth than world production by an average of 0.3 percentage points (Table 1).

Table 1. Growth in world merchandise exports and production, 2008-2018 (in %)

	2008	2010-2018	2016	2017	2018*
World merchandise exports	**1.7**	**3.0**	**1.6**	**4.5**	**2.8**
Agricultural products	**2.5**	3.9	2.0	8.7	6.1
Fuels and mining products	**0.7**	1.3	1.8	-2.7	3.7
Manufactures	**2.2**	3.4	0.3	4.7	3.3
World production	**-0,4**	**2.7**	**2.3**	**3.0**	**3.2**

Note: *Preliminary data

Source: WTO (2019). *World Trade Statistical Review 2019*. Geneva: World Trade Organization, p. 96.

To compare the structural characteristics of the foreign trade of the Republic of Serbia with the world tendencies in international trade, it is necessary to point out the structure of world merchandise exports and imports. The structure of world exports during the 1990s changed in the direction of an increased share of industrial products from 74.7% in 1995 to 75.3% in 2000. Products from the group (0+1+22+4) showed a declining portion of world trade from 8.9% in 1995 to 6.7% in 2000. The group of products related to the export of raw materials with

agricultural origin decreased its share in world exports, primarily due to the long-standing tendency of decline in their export prices. As in the case of agri-food products, there is a declining tendency of the participation of primary products (including iron and steel). Group 3, which represents mineral fuels, lubricants, and similar substances, saw an increase in exports by more than 3% in world exports (Table 2).

Table 2. Structure of world merchandise exports and imports by SMTK sectors, 1995-2014 (in %)

	Product group: 0+1+22+4	Product group: 2-(22+27+28)	Product group: 3	Product group: 27+28+68+667+971	Product group: 5+6+7+8-(667+68)
EXPORTS					
1995	8.9	2.8	7.5	3.3	74.7
2000	6.7	1.8	10.6	1.8	75.3
2005	6.4	1.6	13.3	3.3	71.7
2010	7.5	1.6	15.4	6.4	66.2
2014	7.9	1.5	16.7	6.3	64.8
IMPORTS					
1995	9.1	2.9	7.5	3.7	74.0
2000	6.9	2.0	10.4	3.2	74.4
2005	6.6	1.7	13.6	3.6	71.3
2010	7.6	1.6	15.4	6.4	66.8
2014	7.9	1.5	16.2	6.5	**65.5**

Note: Sectors are given according to SMTK and include the following product groups: the group (0+1+22+4) covers the export of all food products including beverages, tobacco, edible oils and seeds; group 2-(22+27+28) covers the export of raw materials of agricultural origin; the group (27+28) includes unprocessed fertilizers, crude minerals, ferrous ores, and old iron; group (3) represents the export of mineral fuels, lubricants, and similar substances; the group (68+667+971) consists of exports of non-ferrous metals, precious stones, and non-monetary gold; group 5 to 8-(667+68) covers exports of industrial products; group (5) covers exports of chemical products; group (7) covers the export of machinery and transport equipment.

Source: United Nations (2006-2007, 2011, 2015). *Unctad Handbook of Statistics*. New York and Geneva: United Nations Publication.

The trend of an increase in the share of industrial products was discontinued after 2000. Owing to the rise in oil prices, there was an increase in the share of mineral fuels from 10.6% in 2000 to 16.7% of world exports in 2014. The beverage product group, tobacco, and edible oils grew from 6.7% in 2000 to 7.9% in 2014. The growth in prices of minerals, ferrous and non-ferrous metals led to an increase in exports of these commodity groups from 1.8% in 2000 to 6.3% in 2014. On the other hand, the share of industrial products in world exports decreased from 75.3% in 2000 to 65.5% in 2014, as well as the raw materials of agricultural origin, whose share decreased from 1.8% to 1.5% in the observed period.

When looking at the structure of world commodity imports, it can be seen that during the 1990s, the share of industrial products and fuels also increased, while the share of other product groups decreased. After 2000, the share of industrial products and raw materials of agricultural origin in world imports was declined. Imports of fuels and non-ferrous metals tended to grow from 2000 to 2014, while the food sector had a shifting trend in world imports over the observed period.

Graph 2 represents the structure of world exports of products for the period 2008 to 2018. The largest share was recorded by agricultural products, then industrial products and finally fuel and mining products. After 2016, exports of all three product groups increased.

Graph 2. Merchandise world exports, by major product groups, 2008-2018
(Index 2008 = 100)
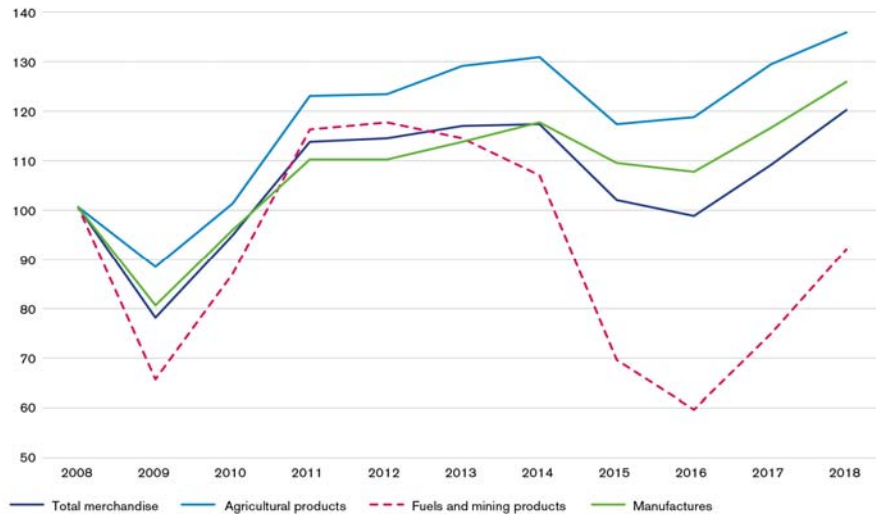
Source: WTO (2019). *World Trade Statistical Review 2019*. Geneva: World Trade Organization, p. 30.

Consistent with the technological content of industries for 2017, the largest number of products is from the group of medium-high-tech industries (other machinery and transport equipment, cars, chemical products 75%), office and telecommunication equipment belongs to industrial production of high technological intensity 15%, iron and steel belongs to the medium-low-tech industry of 3%, and clothing and textiles with a share of 6% belong to the low-tech content industry (WTO, 2018).

4. The position of the Republic of Serbia in international trade

The Republic of Serbia is still in the process of economic transition and belongs to the group of middle developed countries. In 2017, the foreign trade ratio, as a ratio of foreign trade to GDP, amounted to 54.2%, which indicates a significant degree of openness of the Serbian economy to foreign trade.

The participation of the Republic of Serbia in world trade is very negligible. According to the 2018 data and World Trade Organization (WTO) ranking, the Republic of Serbia has a share of only 0.10% in world commodity exports and it is ranked on the 52nd place in the ranking of the world's most important commodity exporters. In terms of imports, its share is approximately at the same level, accounting for 0.13% of world merchandise imports and ranking 45th in the list of the world's most important importers of goods in 2018. In terms of trade in services, the Republic of Serbia ranks 48th in the world ranking of service exporters and 53rd in the ranking of the world's most important importers of services (Table 3).

Table 3. The rank of the Republic of Serbia in world trade of goods and services in 2018

Rank	World exports	World imports
Merchandise	52	45
Service	48	53

Source: WTO (2019). *Trade Profiles 2019*. Geneva: World Trade Organization, p. 318.

If we analyse the EU member states individually rather than as a single entity of international trade representing a single customs territory and having a common foreign trade policy, the ranking of the Republic of Serbia would be even lower, as it would rank 73rd in the list of exporters and 67th in the ranking of importers of goods. Similarly, it would rank 74th and 76th in the list of service exporters and importers, respectively (WTO, 2019, p. 318).

The Republic of Serbia still has poorly developed foreign trade relative to the observed group of selected countries. A former country in transition, the Czech Republic, which is similar in size and population to the Republic of Serbia, has foreign trade of 15,600 USD *per capita*, which is 4.6 times more than the Republic of Serbia. Countries in the Balkan region, such as Montenegro and North Macedonia, which are much smaller than the Republic of Serbia, have more significant foreign trade than the Republic of Serbia as measured by trade flows *per capita* (Graph 3).

Graph 3. Trade *per capita*, 2016-2018 (in USD)
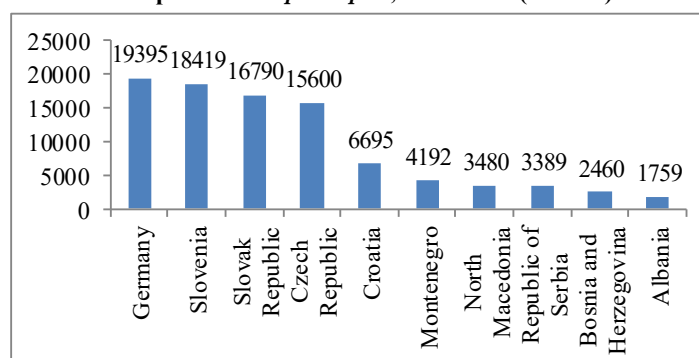
Source: WTO (2019). *Trade Profiles 2019*. Geneva: World Trade Organization.

Serbian exports of goods from 2012 to 2018 had a constant growth rate, which in the year 2013 compared to 2012 was over 20%. Exports of goods in 2018 compared to 2012 had a growth rate of 53.7%, while the average export growth rate in the period from 2012 to 2018 was about 9% (Table 4).

The trade balance in the observed period was marked by a constant deficit. An increase in the trade deficit also led to an increase in the current account deficit, which in 2012 was over 10% of GDP.

In foreign trade, the Republic of Serbia incurs continuous deficits because its imports are higher than exports. In 2018, the foreign trade deficit reached 5.6 billion EUR. The total foreign trade in goods in 2018 amounted to around 38.2 billion EUR (Table 4).

**Table 4. GDP and foreign trade of the Republic of Serbia with the world, 2012-2018
(in million EUR and %)**

Indicator	2012	2013	2014	2015	2016	2017	2018
Export of goods	8,739	10,996	11,158	12,039	13,432	15,051	16,271
Export of goods (growth rate in %)	3.5	20.5	1.5	7.3	11.4	10.8	7.5
Import od goods	14,712	15,468	15,490	16,087	17,068	19,396	21,918
Import od goods (growth rate in %)	3.2	4.9	0.2	3.7	6.0	12.0	11.5
Trade balance	-5,973	-4,472	-4,332	-4,048	-3,636	-4,345	-5,647
GDP	33,679	36,427	35,467	35,716	36,723	39,183	42,780
Export of goods/GDP (in %)	25.9	30.2	31.5	33.7	36.6	38.4	38.0
Current account balance / GDP (in %)	-10.9	-5.8	-5.6	-3.5	-2.9	-5.2	-5.2
Cover of import by export	59.4	71.1	72.0	74.8	78.7	77.6	74.2

Source: Ministry of Finance (2019). *Bulletin Public Finances 12/2018, number 172*. Belgrade: Ministry of Finance – The Republic of Serbia, p. 15-16; additional authors' calculations.

The importance of exports to the economy of the Republic of Serbia should also be observed from its share in GDP. The share of Serbian commodity exports in GDP in 2018 amounted to 38%, which is an increase of 12 percentage points compared to 2012, but still insufficient compared to the countries that export more than 50% of theirs GDP. Such exports indicate the low export potential for domestic production. The coverage of imports by exports continued to grow steadily from 2013 to 2016, with a slight decline in 2017 and 2018. The average coverage of imports by exports in the period from 2012 to 2018 was 72.5%.

5. The structure of the merchandise exchange of the Republic of Serbia

The insufficient export of the Republic of Serbia is a consequence of the inherited structure of production, greater orientation to trade with other republics of the former SFRY, as well as interrupted trade flows due to sanctions by the international community and NATO bombing. During the sanctions, there was a large decline in Serbian exports, and competitors of Serbian exporting companies from other countries took their place in the world market, especially where previously of Serbian companies were present (Kovačević, 2012, p. 381). After lifting the sanctions, weakened domestic companies were unable to compete with other exporters, primarily on the EU market.

5.1. Structure of merchandise exchange by the purpose of the products

The export of the Republic of Serbia has been significantly marginalised during sanctions. The investment came down to domestic accumulation, which was not enough to make structural changes in the economy. As a result, there was a fall in exports of the Republic of Serbia in the 1990s, which was accompanied by deterioration in the industrial content of exports. This tendency was also transposed to the period after 2000 so that the share of machinery and auto parts in exports declined and the share of agricultural food products increased. The raw materials accounted for over 60% of exports between 2005 and 2010, primarily due to exports of steel and rubber, which was related to the privatization of domestic companies. In contrast to this category, final industrial products (consumables and equipment) accounted for a relatively smaller portion of total exports by 2010 (Kovačević, 2017, p. 403). In the period from 2012 to 2018, the largest share in the export structure was represented by reproductive products, whose average exports in this period amounted to 54.5%, followed by exports of consumables with 35.6%, which since 2015, tended to decline in total exports and 2018 showed significant recovery. The average export of equipment was 9.7% and in the last couple of years, it has tended to increase its share with a significant drop in 2018 from 1.6

percentage points in comparison with the year before. The decrease in the share of raw materials in total merchandise exports is observed in 2016, where it amounted to 51.9%, while the export of equipment increased to 11.1% (Table 5).

Table 5. Structure of exports and imports by the purpose of products, 2012-2018 (in %)

	2012	2013	2014	2015	2016	2017	2018	Average
				EXPORTS				
Intermediate goods	57.8	52.7	52.4	52.8	51.9	55.5	58.4	54.5
Consumer goods	32.6	39.5	39.9	38.1	37.0	33.4	30.4	35.8
Capital goods	9.6	7.8	7.7	9.1	11.1	11.1	11.3	9.7
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
				IMPORTS				
Intermediate goods	61.7	62.8	60.3	58.8	55.9	57.2	57.0	59.1
Consumer goods	19.5	18.8	18.5	20.2	20.4	18.6	18.6	19.2
Capital goods	12.3	11.0	10.4	12.8	12.9	12.4	12.7	12.1
Unclassified by BEC destination	6.5	7.4	10.8	8.2	10.9	11.9	11.6	9.6
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: Statistical Office of the Republic of Serbia (2019). *Statistical Yearbook of the Republic of Serbia, 2019.2018.2017.2016.2015.2014.* Belgrade: Statistical Office of the Republic of Serbia; additional authors' calculations.

The structure of imports is also dominated by raw materials with an average share of about 59.1% in 2012-2018. The high share of raw materials in imports is due to the import dependence of the economy. The imports of consumer goods in the observed period amounted to 19.2%, while the lowest average share related to equipment was only 12.1%. What is noticeable from the previous table is the share of products not classified by purpose in the structure of imports, with an average of 9.6%.

5.2. Structure of merchandise exchange by sectors and commodity groups

The structure of the commodity exchange of the Republic of Serbia can be viewed according to the data of the standard international trade classification (SITC).

According to the data (Table 6), it is observed that the largest share of exports of the Republic of Serbia in 2017 and 2018 consisted of products classified in the following four sectors of SITC: Machinery and transport equipment, Manufactured products classified by material, Food and live animals and Miscellaneous manufactured articles. These four sectors accounted for an average of 78.2% of commodity exports in 2017 and 2018.

Table 6. Exports and imports of the Republic of Serbia by SITC sectors, revision 4 (in %)

	Share in total exports		Share in total imports	
	2017	2018	2017	2018
Total	100.00	100.00	100.00	100.00
0 Food and live animals	13.5	12.6	5.8	5.7
1 Beverages and tobacco	2.9	2.8	1.4	1.3
2 Crude materials, inedible, except fuels	3.5	3.5	4.9	4.2
3 Mineral fuels, lubricants, and related products	2.6	3.0	10.5	11.6
4 Animal and vegetable oils, fat and waxes	1.1	0.9	0.3	0.2
5 Chemicals and related products	9.2	9.7	14.2	13.6
6 Manufactured products classified by material	23.6	24.8	18.8	18.5
7 Machinery and transport equipment	28.0	27.8	25.6	25.9
8 Miscellaneous manufactured articles	13.3	12.8	7.4	7.3
9 Products and transactions not mentioned in SITC	2.2	2.2	11.1	11.7

Source: Statistical Office of the Republic of Serbia (2019). *Statistical Pocketbook of the Republic of Serbia, 2019.* Belgrade: Statistical Office of the Republic of Serbia, p. 67; additional authors' calculations.

The review of exports and imports of the Republic of Serbia by sectors in 2017 and 2018 indicates the key role of sector 7 (Machines and transport equipment). The increase in exports of road vehicles in 2013 to 1.4 billion EUR indicates a high share of this sector in the total exports of the Republic of Serbia (27.8% in 2018). Any decrease in the dynamics of this sector significantly affects the dynamics of total merchandise exports of the Republic of Serbia. The slowdown in exports of road vehicles since the second half of 2014 had a significant impact on the dynamics and structure of total exports. The largest share in the structure of imports according to the SITC has sector 7, which recorded growth in the observed period. Also, imports of energy and raw materials from sector 3 (petroleum, petroleum products, and natural gas) and chemical products from sector 5 (medical and pharmaceutical products) are very high.

Insights into leading merchandise groups in Serbian exports indicate the structural problems faced by the Serbian economy. In addition to the improvements in previous years, food and agrarian products, along with base metals (steel, aluminium, copper), non-metals, yarns and fabrics, rubbers, still, have a large share in the structure of exports.

Leading commodity groups at the double-digit HS classification (Table 7) of the main export database of the International Trade Centre (Harmonized Commodity Description and Coding Systems) are electrical and electronic equipment and vehicles for a specified period. Exports of electrical and electronic equipment increased from 2013 to 2018 from 9.4% to 13.5%, or for 4.1 percentage

points. In the same period, exports of machinery and mechanical appliances increased by 0.7 percentage points, while vehicle exports have been steadily declining since 2013, down by 8.2 percentage points in 2018 compared to 2013

Table 7. Top 10 merchandise groups (HS digit II) in exports of the Republic of Serbia, 2013-2018 (in %)

	2013	2014	2015	2016	2017	2018
Electrical and electronic equipment	9.4	9.4	9.7	12.0	12.6	13.5
Machinery and mechanical devices	6.3	6.6	6.9	6.7	6.7	7.0
Vehicles (except rail and tram)	15.0	13.9	11.8	10.3	8.3	6.6
Iron and steel	3.3	3.6	3.7	3.2	4.4	5.4
Plastics and articles thereof	5.4	4.9	4.9	5.0	5.0	5.0
Rubber and articles thereof	3.4	3.4	3.7	3.8	4.7	4.8
Copper and articles thereof	3.1	2.7	2.8	2.8	3.4	3.4
Furniture and parts	2.1	2.3	2.8	3.0	3.1	3.2
Edible fruits and nuts	3.3	3.7	4.4	4.1	3.9	3.0
Mineral fuels, mineral oils, and products thereof	4.8	3.7	2.8	2.6	2.5	3.0

Source: Trade map (2019). *List of products imported by the Republic of Serbia.* Retrieved from: www.trademap.org/Product_SelCountry_TS.aspx. Accessed on: 21 November 2019

6. Structural changes in the industry as a factor of increasing export competitiveness

To achieve qualitative improvements in exports, it is necessary to increase the competitiveness of Serbian industry exchangeable part and intensifying structural changes in it. Macro competitiveness of the industry, especially the international competitiveness of the manufacturing industry, which produces most of the exchangeable goods, is considered one of the basic determinants of the long-term sustainable growth and development of a national economy.

6.1. The level of development and ranking of the processing industry of the Republic of Serbia

To improve the competitiveness of its economy and increase its commodity exports, the Republic of Serbia must improve its unfavourable industrial structure, which accounts for about 90% of domestic exports. According to the criteria of the United Nations Industrial Development Organization (UNIDO), the achieved level of industrial development of the Republic of Serbia at the beginning of the second decade of the 21st century is classified into a group of industrialised economies, that is, a subset of developing industrial economies. An indicator that can analyse the international competitiveness of a country's industry is the UNIDO CIP index

(Competitive Industrial Performance Index). It is a composite index that measures an industry's ability to produce and export competitive products. The CIP index consists of eight indicators grouped into three dimensions of industrial competitiveness (UNIDO, 2013, p. 36-44).

The first dimension is the production capacity and export of the manufacturing industry. There are two indicators: 1) GDP of the manufacturing industry *per capita* (MVApc) and 2) exports of the manufacturing industry *per capita* (MXpc).

The second dimension covers the level of technological development in the manufacturing industry. The auxiliary composite subindicators of this dimension are 1) intensity of industrialization (MHVAsh + MVAsh/2) related to qualitative, and 2) export quality (MHXsh + MXsh/2) related to quantitative changes in industry structure.

The third dimension of competitiveness involves the impact of a country's manufacturing industry on the world manufacturing industry; both in terms of its share in gross value added (ImWMVA) and its participation in trade (ImWMT) (Savić et al., 2015, p. 394-395).

Table 8. Rank and value of the CIP index of the Republic of Serbia and some countries in 2010, 2016, and 2018

Country	2010			2016			2018		
	WR	*RR*	*CIP index*	*WR*	*RR*	*CIP index*	*WR*	*RR*	*CIP index*
Germany	2	1	0.52	1	1	0.55	1	1	0.52
Czech Republic	20	13	0.19	18	11	0.21	17	11	0.21
Slovenia	32	19	0.12	34	21	0.11	31	18	0.11
Slovakia	27	16	0.16	26	16	0.15	24	15	0.16
Poland	25	15	0.17	23	14	0.17	23	14	0.17
Hungary	29	17	0.14	27	17	0.15	26	16	0.15
Croatia	50	27	0.06	56	30	0.05	53	28	0.06
Bulgaria	59	30	0.05	55	29	0.06	54	29	0.05
Republic of Serbia	**76**	**34**	**0.03**	**69**	**34**	**0.04**	**62**	**31**	**0.04**
Bosnia and Herzegovina	83	35	0.02	85	37	0.02	81	36	0.03
North Macedonia	84	36	0.02	81	36	0.03	78	35	0.03

Note: WR – World rank; RR – Regional rank of European countries

Source: UNIDO (2013). *Competitive Industrial Performance Report 2012/2013: The Industrial Competitiveness of Nations - Looking back, forges ahead,* Vienna: UNIDO, p. 47-50; UNIDO (2017). *Competitive Industrial Performance Report 2016: CIP Index, edition 2016.* Vienna: UNIDO, p. 91-92; UNIDO (2019). *Competitive Industrial Performance Report 2018: CIP Index, edition 2018.* Vienna: UNIDO, p. 105.

The low competitiveness of the Republic of Serbia is best evidenced by the fact that out of 38 European manufacturing industries it was ranked 38th, domestic manufacturing was ranked 34th, and ranked 76th out of 133 industries in the world

rankings for 2010. In 2016, the Republic of Serbia maintained 34th place in the ranking of European manufacturing industries (out of 41), while in the world ranking it improved its ranking by 7 places and took 69th place (out of 144). Table 8 shows that the Republic of Serbia was better ranked in the world for 2018 (62nd out of 150 countries). Regional ranks changed to the 31st place (UNIDO, 2019, p. 43).

Bosnia and Herzegovina and North Macedonia have lower competitiveness in the manufacturing industry in Europe than in the Republic of Serbia (Table 8). However, measured by the CIP index, the competitiveness of the manufacturing industry in the Republic of Serbia is low.

The comparative analysis shows that the production capacity and export of the manufacturing industry were very low in 2015 compared to the observed countries (Table 9). GDP of the manufacturing industry *per capita* (MVApc) of 644 USD is one of the lowest in Europe, where the Republic of Serbia is only ahead of Bosnia and Herzegovina and North Macedonia. A similar situation is with the export of the manufacturing industry *per capita* (MXpc) which is 1,258 USD, while only Bosnia and Herzegovina have a lower value of export *per capita* than the selected countries.

Table 9. Indicators of the CIP index of manufacturing industry competitiveness of the Republic of Serbia and some transitional countries in 2015

Country	MVApc in USD	MXpc in USD	MHVAsh %	MVAsh %	MHXsh %	MXsh %	ImWMVA %	ImWMT %
Czech Republic	5.049	13.930	50.51	23.97	68,96	93.43	0.44	1.22
Slovenia	4.367	11.632	48.65	18.41	62.84	90.46	0.08	0.20
Slovakia	3.866	13.105	48.19	20.90	70.66	94.75	0.17	0.59
Poland	2.481	4.445	35.45	17.27	56.10	88.26	0.80	1.43
Romania	1.909	2.697	37.85	19.66	58.20	86.83	0.31	0.44
Croatia	1.636	2.594	29.94	11.89	45.31	85.63	0.06	0.09
Bulgaria	980	2.589	29.97	13.02	42.20	71.82	0.06	0.15
North Macedonia	629	2.002	15.35	12.36	58.88	92.65	0.01	0.03
Republic of Serbia	**644**	**1.258**	**23.91**	**14.18**	**46.54**	**83.23**	**0.05**	**0.09**
Bosnia and Herzegovina	527	1.076	17.55	10.94	24.87	80.39	0.02	0.03

Source: UNIDO (2018). Industrial Development Report 2018: Demand for Manufacturing: Driving Inclusive and Sustainable Industrial Development. Vienna: UNIDO, p. 205-209.

In terms of the intensity of industrialization (MHVAsh), the Republic of Serbia is better ranked than Bosnia and Herzegovina and North Macedonia, but still, more advanced transition countries like the Czech Republic, Poland, Slovakia, and Slovenia have many times greater effect and participation of the manufacturing sector on the creation of GDP and trade in the world. When considering the GDP

manufacturing industry in GDP (MVAsh), the Republic of Serbia stands out with 14.2%, which is better not only from Bosnia and Herzegovina and North Macedonia but also from some EU countries such as Bulgaria and Croatia. The impact on the world production and export of our manufacturing industry is negligible. From 2010 to 2015, growth of participation in the world's GDP (ImWMVA) remained unchanged at 0.05% and in trade (ImWMT) there was a modest growth of 0.02% (UNIDO, 2018, p. 208).

When we perform a comparative analysis of export quality (MHXsh + MXsh), which refers to quantitative changes in the structure of the industry in 2010 and 2015, we notice that the Republic of Serbia has made some progress in this indicator. In the export structure, the share of medium and high technology-intensive products (MHXsh) increased by 13.7 percentage points, while the share of manufacturing industry exports in total exports (MXsh) increased by 5 percentage points. Compared to the selected countries according to (MHXsh), only North Macedonia had a larger share change of 27.5 percentage points, while according to (MXsh) Bosnia and Herzegovina had higher growth than the Republic of Serbia (Table 10).

Table 10. The Export quality of the Republic of Serbia and selected transition countries (in %)

Country	MXsh		Change	MHXsh		Change
	2010	2015	2010-2015	2010	2015	2010-2015
Czech Republic	90.99	93.43	+2.4	67.94	68.96	+1.0
Slovenia	90.83	90.46	−0.4	62.96	62.84	−0.1
Slovakia	93.80	94.75	+0.9	66.26	70.66	+4.4
Poland	87.83	88.26	+0.4	58.14	56.10	−2.0
Romania	90.36	86.83	−3.5	54.69	58.20	+3.5
Croatia	90.42	85.63	−4.8	49.46	45.31	-4.1
Bulgaria	70.99	71.82	+0.8	35.40	42.20	+6.8
North Macedonia	89.28	92.65	+3.4	31.42	58.88	+27.5
Republic of Serbia	**78.21**	**83.23**	**+5.0**	**32.82**	**46.54**	**+13.7**
Bosnia and Herzegovina	72.69	80.39	+7.7	23.00	24.87	+1.9

Source: UNIDO (2018). Industrial Development Report 2018: Demand for Manufacturing: Driving Inclusive and Sustainable Industrial Development. Vienna: UNIDO, p. 205-209; additional authors' calculations.

6.2. *Technological structure and specialization of the export industry*

The structure of industry exports by technology intensity is dominated by low technology-intensive products. This group refers to products intensive with natural resources and labour, which are produced based on the use of ores and raw

materials and the use of low skilled and inexpensive labour. They are represented with over 40% of total industry exports. The share of about 24% refers to the group of medium-low technology-intensive products, while the medium-high technology-intensive products are represented by about 32%. High tech-intensive products accounted for about 4%, as well as a drop in exports. The negative tendency is that the group of medium-high-tech intensive products recorded a decrease in the share of exports, while the medium-low-tech-intensive products recorded an increase in exports in the observed period (Table 11).

Table 11. Technological structure of total exports of the Republic of Serbia, (in %)

| Category	2013	2014	2015	2016	2017	2018	2013-2018*	2018-2013**
Low technology-intensive products	36.7	47.4	47.9	39.1	36.8	35.0	**40.5**	**-1.7**
Medium-low technology-intensive products	23.9	21.0	21.6	23.1	26.7	28.3	**24.1**	**+4.4**
Medium-high technology-intensive products	35.9	27.6	26.8	34.1	33.0	33.3	**31.8**	**-2.6**
High technology-intensive products	3.5	4.0	3.7	3.7	3.5	3.4	**3.6**	**-0.1**

Note: *Average for years 2013-2018; ** Increase/Decrease 2018 – 2013

Source: Statistical Office of the Republic of Serbia (2019). *Foreign Trade.* Retrieved from: http://webrzs.stat.gov.rs. Accessed on: 20 November 2019

Based on the export analysis, it can be estimated that the serious recovery and competitiveness of the economy of the Republic of Serbia will not be until the export structure changes, the level of finalization of products and their technological intensity, to increase its export potential.

Considering the factorial and technological intensity of the commodity exports of the Republic of Serbia, it is noticeable, first of all, a slight, and then a strong increase in the share of knowledge and skills of intensive products. 'Skill-intensive' products are those products that are intensive with skilled work, respecting relatively sophisticated knowledge and skill (Nikolić & Petrović, 2018).

Graph 4 shows the share of products by a factor or technologically intensive production in the period from 2006 to 2017. Based on the presented data, it can be seen that after 2006, and especially in 2012 and 2013, the Republic of Serbia recorded a significant increase in the share of this product group in total exports. After 2013, there was a slight decline, which is primarily due to a fall in car exports and an increase in metal exports since 2016, whose decline after 2011 was also responsible for a strong increase in exports of knowledge and skills of intensive products.

Graph 4. The tendency of the share of 'skill-intensive' manufactures in the commodity exports of the Republic of Serbia, 2006-2017
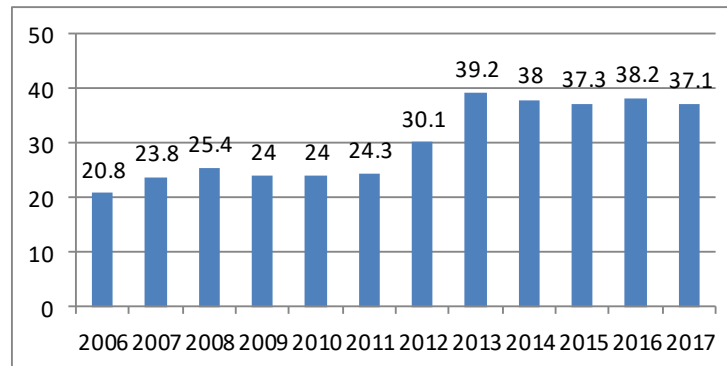
Source: Nikolić, G. & Petrović, P. (2018). Dinamika i kvalitativne promene srpskog izvoza 2000-2017. *Kultura polisa, XV*(36), 493-510.

According to the data in Table 12, it is noticeable that most of the selected countries in the region recorded growth in knowledge and skill of intensive products in total exports. With an average of 55%, Slovenia had the largest share in exports of this product group in the observed period. Next on the list is Romania with 41.5% and Bulgaria with 28.1%.

Table 12. The tendency of the participation of 'skill-intensive' manufactures in the total exports of selected countries, 2007-2017

County	2007	2008	2011	2012	2017	Average
Republic of Serbia	23.8	25.4	24.3	28.2	37.1	**27.8**
Romania	36.3	38.9	45.9	45.1	-	**41.5**
Bosnia and Herzegovina	18.6	19.7	17.7	18.4	22.7	**19.4**
Montenegro	7.6	9.7	11.1	11.3	13.3	**10.6**
Bulgaria	23.3	24.2	25.7	25.3	42.0	**28.1**
Slovenia	54.4	54.5	53.8	55.0	57.1	**55.0**

Source: Nikolić, G. & Petrović, P. (2018). Dinamika i kvalitativne promene srpskog izvoza 2000-2017. *Kultura polisa, XV*(36), 493-510; additional authors' calculations

The Republic of Serbia had a better share in exports of this product group than Bosnia and Herzegovina by 8.4 percentage points, compared to Montenegro by 17.2 percentage points, while lagged behind Romania by an average of 13.7 percentage points, Slovenia by 27.2 percentage points, but lagging from Bulgaria of 0.3 percentage points is very negligible.

Strong improvement of export structure in the period 2012-2013 was mainly due to the start of FIAT production (FAS), which, due to the very low volume of

total exports, significantly changed the export structure of the domestic economy. On the other hand, the fall in steel product exports have also contributed to a decrease in the share of resource-intensive products and thus an increase in the share of 'skill-intensive' manufactures. In 2006 and 2007, we had a reverse situation where company US Steel, due to its high share of exports classified as low technology-intensive, defused the quality of domestic commodity exports (Nikolić & Petrović, 2018, p. 497).

Conclusion

We have seen through literature and practice that sustainable and adaptive policies and plans of structural changes in production and foreign trade could have positive implications on one's country competitiveness. It is important to make structural changes in the economy's production and change the technological structure of exports to overcome trade deficits (Rekiso, 2020). Huang et al. (2017) point out that fundamental and long-term institutional changes and policies could promote trade structure from low technology-intensive to high technology-intensive industry. Chinese's economy is one example of both sustainable and flexible policy of structural changes in the industry, which have transformed China's technological production structure and now this country is striving from the concept of "Made in China" to "Created in China" (Huang et al., 2017). Therefore, the authors tried to answer the research question: Is there a need for structural changes in the foreign trade of the Republic of Serbia? The answer is positive and the basic condition for increasing the export of the Republic of Serbia is the structural improvement of its production. To fulfill this condition, it is necessary to continuously invest in the modernization of equipment and production processes. In recent years, the Republic of Serbia has comparative advantages in the products of the agro-food industry, base metals, rubber and certain garments, which is in line with available natural resources and labour costs. Strong improvement of export structure in the period from 2012 to 2013 with the arrival of Fiat was also caused by a decrease in the share of metals in exports due to the sharp fall in their prices on the stock markets in these years. According to the CIP index, which measures the ability of an industry to produce and export competitive products, the Republic of Serbia has improved its ranking in the world from 76th place in 2010 to 62nd place in 2018.

This study tried to present the overview of data on the industry and export structure of the Republic of Serbia. The share of medium and high technology-intensive products increased by 13.7 percentage points, while the share of exports of the manufacturing industry in total exports increased by 5 percentage points. Despite these positive changes, the analysis in this paper provides a new perspective in terms of the quality of industrial exports of the Republic of Serbia. The country still lags behind EU countries. In the coming period, the production of 1) motor vehicles and components, 2) machinery, 3) electronic and

telecommunication equipment, 4) information technology and 5) food must play an important role in the development of Serbian industry, and especially in the growth of its exports.

The paper draws new conclusions that several products in addition to production for export must be produced to meet the needs of the domestic market, so as not to cause an overflow of foreign currency for imports of these products when their shortage arises due to increased domestic demand. The creation of new products of higher processing, quality, and technological intensity could rank the Republic of Serbia at the very top among the exporting countries of industrial products. Industrial policy must be aimed at making the industry more diverse and creating new products through which the industry will be internationally competitive, to increase domestic production and exports.

However, this research has its limitations. They are primarily related to the analysis of secondary data from various resources with different time coverage of data. Additionally, the authors are hoping that the paper contributed to a better understanding of the overall structure of foreign trade in the Republic of Serbia and also provided a valuable platform for further comprehensive statistical analysis.

References

Araujo, A. R., de Paiva, S. M., Santos, C. F. J. & da Silva, J. G. (2017). Economic growth and structural change in a multi-sector and multilateral approach to balance-of-payments constrained growth. *Brazilian Journal of Political Economy, 37*(*4*), 894-915. https://doi.org/10.1590/0101-31572017v37n04a13

Bolaky, B. & Freund, C. (2004). Trade, Regulations, and Growth (World Bank Policy Research Working Paper No. 3255), Maryland: University of Maryland.

Damijan, J., Rojec, M. & Ferjancic, M. (2011). The Growing Export Performance of Transition Economies: EU Market Access versus Supply Capacity Factors. *Panoeconomicus, 58*(4), 489-509. https://doi.org/10.2298/PAN1104489D

Huang, Y., Salike, N. & Zhong, F. (2017) Policy effect on structural change: A case of Chinese intermediate goods trade. *China Economic Review, 44*, 30–47. http://dx.doi.org/10.1016/j.chieco.2017.03.005

Kovačević, R. (2012). *Ekonomski odnosi Srbije sa inostranstvom*. Beograd: CID, Ekonomski fakultet.

Lewer, J. J. & Van den Berg, H. (2003). Does trade composition influence economic growth? Time series evidence for 28 OECD and Developing Countries. *The Journal of International Trade and Economic Development, 12*(1), 39-96. https://doi.org/10.1080/0963819032000049150

Mazumdar, J. (1996). Do Static Gains from Trade Lead to Medium-Run Growth? *Journal of Political Economy, 104*(6), 1328-3137.

Ministry of Finance (2019). *Bulletin Public Finances 12/2018, number 172*. Belgrade: Ministry of Finance – Republic of Serbia.

Nikolić, G. & Petrović, P. (2018). Dinamika i kvalitativne promene srpskog izvoza 2000-2017. *Kultura polisa, XV*(36), 493-510.

Rekiso, Z. S. (2020). Trade deficits as development deficits: Case of Ethiopia. *Structural Change and Economic Dynamics, 52*, 344–353. https://doi.org/10.1016/j.strueco.2019.12.006

Savić, Lj., Ilić, M. & Mićić, V. (2015). *Ekonomika industrije.* Kragujevac: Ekonomski fakultet.

Sirgemets, R., Teder, M. & Kaimre, P. (2019). The Structural Changes and Competitiveness of the Forest and Wood Sector in the Baltic Countries within 1999-2016. *Baltic Forestry, 25*(1), 97-104.

Statistical Office of the Republic of Serbia (2014, 2015, 2016, 2017, 2018). *Statistical Yearbook of the Republic of Serbia 2014.* Belgrade: Statistical Office of the Republic of Serbia.

Statistical Office of the Republic of Serbia (2019). *Foreign Trade.* Retrieved from: http://webrzs.stat.gov.rs. Accessed on: 20 November 2019

Statistical Office of the Republic of Serbia (2019). Statistical Pocketbook of the Republic of Serbia, 2019. Belgrade: Statistical Office of the Republic of Serbia.

Svobodová, H. (2014). Changes on Foreign Trade in Agricultural Commodities in the Czech Republic. *Journal of Central European Agriculture, 15*(2), 62-72. https://doi.org/10.5513/JCEA01/15.2.1453

Trade map (2019). *List of products imported by the Republic of Serbia.* Retrieved from: www.trademap.org/Product_SelCountry_TS.aspx. Accessed on: 21 November 2019

UNIDO (2013). *Competitive Industrial Performance Report 2012/2013: The Industrial Competitiveness of Nations Looking back, forging ahead.* Vienna: UNIDO. Retrieved from: https://www.unido.org/sites/default/files/2013-07/Competitive_Industrial_ Performance_Report_UNIDO_2012_2013_0.PDF

UNIDO (2017). *Competitive Industrial Performance Report 2016: CIP Index, edition 2016.* Vienna: UNIDO. Retrieved from: https://stat.unido.org/admin/publicationPdf?CIP-Volume-I-Nov20.pdf

UNIDO (2018). *Industrial Development Report 2018: Demand for Manufacturing: Driving Inclusive and Sustainable Industrial Development.* Vienna: UNIDO. Retrieved from: https://www.unido.org/sites/default/files/files/2017-11/IDR2018_FULL%20REPORT.pdf

UNIDO (2019). *Competitive Industrial Performance Report 2018*: CIP Index, edition 2018. Vienna: UNIDO. Retrieved from: https://www.unido.org/sites/default/files/files/2019-05/CIP_Report_2019.pdf

United Nations (2006-2007, 2011, 2015). *Unctad Handbook of Statistics.* New York and Geneva: United Nations Publication.

Viszt, E. & Borsi, B. (2001). Structural Changes in the Hungarian Economy and Foreign Trade in 1993-1998. *Acta Oeconomica, 51*(3), 385-414.

Worz, J (2004). *Skill Intensity in Foreign Trade and Economic Growth* (Tinbergen Institute Discussion Papers 04-059/2), Vienna: The Vienna Institute for International Economic Studies and Tinbergen Institute.

WTO (2018). *World Trade Statistical Review 2019.* Geneva: World Trade Organization. Retrieved from: https://www.wto.org/english/res_e/statis_e/wts2019_e/wts2019_e.pdf

WTO (2019). *Trade profiles 2019.* Geneva: World Trade Organization. Retrieved from: https://www.wto.org/english/res_e/booksp_e/trade_profiles19_e.pdf

STRUKTURNE PROMENE U SPOLJNOJ TRGOVINI KAO FAKTOR KONKURENTNOSTI REPUBLIKE SRBIJE

Apstrakt: Cilj rada je da se na bazi sistematizovanih statističkih podataka analiziraju strukturne promene u spoljnoj trgovini kao faktora konkurentnosti Republike Srbije. Najpre se, analiziraju savremene tendencije u međunarodnoj trgovini, gde se prate vrednost i obim svetske robne razmene, kao i ključne promene u strukturi svetskog izvoza i uvoza u posmatranom periodu. Analizom položaja Republike Srbije u međunarodnoj trgovini, treba da se sagleda u kojoj meri se spoljna trgovina Republike Srbije prilagođava strukturnim promenama u svetskoj trgovini. Zatim se analizira struktura robne razmene Republike Srbije po nameni proizvoda, kao i struktura robne razmene po sektorima i robnim grupama. Kasnije se u radu analizira dostignuti razvoj industrije gde je fokus analize usmeren na kvalitet izvoza i međunarodnu konkurentnost prerađivačke industrije, koja u Republici Srbiji proizvodi najveći deo razmenljivih dobara. Poslednji deo rada bavi se analizom tehnološke strukture i faktorske intenzivnosti robnog izvoza Republike Srbije. Na ovaj način dat je odgovor na istraživačko pitanje da postoji potreba za strukturnim promenama u proizvodnji i stranoj trgovini u Republici Srbiji kako bi se poboljšala njena konkurentnost.

Ključne reči: međunarodna trgovina, spoljna trgovina, strukturne promene, konkurentnost industrije.

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