THE IMPORTANCE OF FRUIT AND VEGETABLES IN THE EXTERNAL TRADE OF THE REPUBLIC OF SERBIA

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Abstract: The main goal of the research is to consider and compare the importance of fruits and vegetables in external trade in goods of the Republic of Serbia. According to the Standard International Trade Classification (SITC), "Vegetables and Fruit" is a division that is dominant in Serbian exports of agricultural and food products, and it is necessary to investigate its competitiveness. The key tools used in the analysis are the coverage of imports by exports, then the Contribution to the Trade Balance (CTB) index, as well as the analysis of unit values of exports and imports, in order to compare and evaluate the structure of external trade in fruits and vegetables. The results show that fruit, according to all indicators, has a significantly higher competitiveness compared to vegetables, as well as a higher importance in external trade of goods. This knowledge can serve the creators of agricultural policy to favour the production and exports of fruit products because they can radically improve the structure of total exports, especially when it comes to processed products. Since this is a perennial plantation, the results cannot be expected in a shorter period of time. The previous research has not specifically considered the importance of this segment of agri-food exports and its internal competitiveness (having in mind the applied indicators), which is the main benefit of the study within this paper.

1. Introduction

The agri-food sector of the Republic of Serbia represents a part of the economy that realizes positive and significant net exports. In addition, it is highly positioned in total exports, employment and gross value added of the Republic of Serbia. The importance of this segment of the economy is especially evident in times of crisis, both economic and social. In times of crisis, it provides a stable supply to the domestic market, which is of great importance because it enables the satisfaction of basic, existential needs of the population. The level of development and adaptability of this sector came to the fore especially during the new pandemic caused by the COVID-19 virus, both due to human nutrition (social aspect) and to compensation of negative effects on gross domestic product (having in mind the decline of industrial production and problems in other sectors, such as e.g. tourism and hotel industry). In addition, "the agricultural sector of Serbia has shown the highest degree of resistance in production and exports in the past decades, and thus contributed to balancing the constantly present negative foreign trade balance of the country" (Božić & Nikolić, 2016, p. 296).

In literature, the importance of a certain part of the economy in external trade can be expressed in different ways. Some of the most important indicators are: the value of exports, the external balance of trade, the share of the sector in total exports, the share of the sector in world exports. On the other hand, there are some relative indicators such as: relative foreign trade balance, coverage of imports by exports, relative coverage of imports by exports, contribution to the trade balance of goods. The analysis of the importance of fruits and vegetables in external trade in goods of the Republic of Serbia will be primarily focused on the second group of indicators.

The subject of the research is the analysis of the significance of the "Vegetables and Fruits" division (according to the Standard International Trade Classification - SITC) from the aspect of contribution to the overall external trade balance of goods, as well as in relation to the total export of agri-food sector. A special part will be dedicated to the analysis of unit values of exports and imports in different markets (groups of countries), which can be useful information for economic policy makers in the field of agriculture and food industry, in order to properly direct exports to specific export markets. Fruits and vegetables occupy the highest share within the agricultural and food complex of the Republic of Serbia. Together with cereals, they represent the backbone of this sector (Božić & Nikolić, 2016; Marković, 2019).

The paper is structured from several segments. The introductory part is followed by a section that comprises a review of the literature related to this topic. The third section discusses the research methodology. In the central, fourth part, the basic results of the study, as well as the discussion are presented. The last part is reserved for concluding remarks and recommendations for future action.

2. Literature review

External trade is an important element in assessing the economic development of any country. There are many studies that have analysed and confirmed the positive role of external trade in economic growth and development (Berg & Schmidt, 1994; Onafowora et al., 1996). Also, an export-led growth strategy can ultimately contribute to a higher standard of living (Mahmood & Nishat, 2004), as a fundamental goal of overall socio-economic development.

The research on the structure of external trade and the importance of individual segments is one of the important issues in economic theory and practice, given its importance in the socio-economic development of the country (Ignjatijević et al., 2013). Also, the examination and analysis of structural changes in external trade are the starting point in studies dealing with ways to improve competitiveness (Milovanović et al., 2020). Therefore, this question occupies the attention of many economists. After all, the national competitiveness research is just based on that. It is a consideration of competitiveness that relies on the concept of comparative advantage. Apart from the national level, competitiveness can also be observed at the level of individual export segments where the Revealed Comparative Advantages (RCA) index is often used (Fidan, 2009; Kumar & Singh, 2015; Mizik et al., 2020). The use of this index mainly refers to the export of the agri-food sector and its parts (Cvetković & Petrović-Ranđelović, 2017). Also, the RCA index is used mainly for international comparisons and external competitiveness testing. Thus, Fidan (2009) in his study measures the export performance of citrus as a segment of the agricultural sector using this index. It should be noted that the perception of the export performance of agriculture and the food industry is a burning issue, especially in the EU market (Carraresi & Banterle, 2015). Additionally, agriculture and the food industry are the parts of the economy that are most often viewed together, having in mind their mutual connection and interdependence.

The coverage of imports by exports is the most commonly used tool in competitiveness analysis. In economic theory, there is \an absolute and relative coverage of imports by exports. Both indicators are tools in quantitatively expressing the internal competitiveness of exports (Milanović et al., 2013).

Besides the coverage of imports by exports, there are other indicators of the importance of a particular sector in external trade. Marković (2019) examines the importance of cereals (as well as a significant segment of the agri-food sector) in the external trade of the Republic of Serbia by applying indicators such as the Contribution to the Trade Balance (CTB) index. This index finds its application in other sectors as well, especially in industry (Laursen, 2015). Thus, in their works, Milićević and others (2017) investigate the competitiveness of the wood processing industry, while Jovović & Jovović (2018) examine the importance of food industry in external trade and trade balance.

The unit values of exports and imports are also an unavoidable indicator in the analysis of external trade of goods and competitiveness (Jefferson Institute, 2006; Marković, 2019; Marković & Marjanović, 2019; Marković et al., 2019). These are primary indicators of the export structure, and consequently, secondary indicators of the production structure. Apart from analysing the movement of the trade balance and international competitiveness, the unit values of exports and imports can also be used to assess the impact of international trade on the domestic economy, the impact of foreign prices on domestic inflation, to analyse exchange rate policy and even to assess gross domestic product (Zieschang & Dridi, 2002; Dridi & Zieschang, 2004). In order to improve the structure of external trade in agricultural products in the Republic of Serbia, it is inevitable to increase the product quality by improving production (Milojević et al., 2011), as well as improving the quality of planting material and applying new production technologies aimed at extending the production season (Vlahović et al., 2011).

3. Research methodology

The agri-food sector includes the following divisions classified according to the methodology of the Statistical Office of the Republic of Serbia (2019), and according to the SITC (Revision 4), marked with two-digit numbers: 00 - Live animals other than animals of division 03; 01 - Meat and meat preparations; 02 - Dairy products and birds' eggs; 03 – Fish (not marine mammals), crustaceans, molluscs and aquatic invertebrates; preparations thereof; 04 - Cereals and cereal preparations; 05 - Vegetables and fruit; 06 – Sugar, sugar preparations and honey; 07 – Coffee, tea, cocoa, spices, and manufactures thereof; 08 - Feeding stuff for animals (not including unmilled cereals); 09 - Miscellaneous edible products and preparations; 11 - Beverages; 12 - Tobacco and tobacco manufactures; 21 - Hides, skins and fur skins, raw; 22 - Oil-seeds and oleaginous fruits; 29 - Crude animal and vegetable materials, not elsewhere specified; 41 - Animal oils and fats; 42 - Fixed vegetable fats and oils, crude, refined or fractionated; 43 - Animal or vegetable fats and oils, processed; waxes of animal or vegetable origin. Therefore, the agri-food sector of the Republic of Serbia consists of 18 divisions from 4 sectors.

The subject of further analysis will be the division 05 – "Vegetables and fruit" which belongs to sector 0 – "Food and live animals". In the analytical sense, this division will be divided into subdivisions - fruits and vegetables, due to the essence and usefulness of the analysis. It should be noted that according to the SITC, the "Vegetables" division contains commodity groups 054 - Vegetables, fresh, chilled, frozen or simply preserved; roots, tubers and 056 - Vegetables, roots and tubers, prepared or preserved, while the subdivision "Fruit" consists of the following 3 commodity groups: 057 - Fruit and nuts (not including oil nuts), fresh or dried, 058 - Fruit, preserved, and fruit preparations (excluding fruit juices) and 059 - Fruit

juices (including grape must) and vegetable juices, unfermented and without added spirit (Statistical Office of the Republic of Serbia, 2019). The entire analysis will be performed at the division level, with a special consideration for fruits and vegetables, as separate parts of division 05, so that both the analytical and comparative method will be applied in the analysis.

The research covers an eight-year period, from 2012 to 2019, and is based on the use of a series of partial indicators of the importance of fruits and vegetables in external trade in goods. A number of indicators were used in the research, in order to look at the subject of the research from different, although not so dissimilar angles.

The first in a series of indicators to be used in the analysis is the coverage of imports by exports. This simple indicator represents the ratio of the value of exports to the value of imports of the relevant division (section). It can be multiplied by 100 to obtain the rate of coverage of imports by exports, which is calculated as follows (Grgić et al., 2011):

$$r_{ij}{}^t = \frac{X_{ij}}{M_{ij}} * 100 \qquad (1)$$

where:

$r_{ij}{}^t$ - coverage rate of imports by the exports,

X_{jj} - value of division exports (fruits or vegetables),

M_{jj} - value of division imports (fruits or vegetables).

Values over 100 indicate positive net exports, i.e. that imports are fully covered by exports of a particular division, product or sector. On the contrary, values lower than 100 show negative net exports, i.e. that the export of a particular product, division or sector is not sufficient to cover its import. Furthermore, Milanović et al. (2013) believe that this indicator identifies the carriers of export potential. It is also a measure of a country's ability to compete on the world market (Similarities and complementarities of the economic structure of the Republic of Serbia and the Republic of Srpska as the basis for strengthening economic cooperation, 2014).

Unlike the previous one, the CTB index measures the importance of the division in relation to total exports and imports of goods. It is also a measure of the internal competitiveness of a division, sector or product, and is calculated as follows (Melišek, 2012; Milićević et al., 2017; Jovović & Jovović, 2018; Marković, 2019):

$$CTB = (\frac{x_{ij}-m_{ij}}{X_j+M_j} - \frac{X_j-M_j}{X_j+M_j} * \frac{x_j+m_j}{X_j+M_j}) * 100 \qquad (2)$$

where:
CTB – index of contribution of the division (fruits or vegetables) to the (external) trade balance of goods,

x_{ij} – value of exports of the division (fruits or vegetables) *i* of the country *j*,

m_{ij} – value of imports of the division (fruits or rvegetables) *i* of the country *j*.

X_j – value of goods exports of all divisions *i* of the country *j*,

M_j – value of goods imports of all divisions *i* of the country *j*.

A higher value of this index implies a greater importance of the division in the external trade balance of goods.

The next indicator, the coefficient of relative coverage of imports by exports, shows the relative competitiveness of sectors, divisions or products in total exports and imports. In fact, "the coefficient is calculated as the quotient of the ratio of exports of the selected area to imports of the same area in the observed year and the ratio of total exports and total imports of the selected area in the observed year" (Similarities and complementarities of the economic structure of the Republic of Serbia and the Republic of Srpska as the basis for strengthening the economic cooperation, 2014). For the purposes of this research, this coefficient has been modified, so that the coefficient of relative coverage of imports by exports applied to the agri-food products sector becomes the coefficient of intra-agrarian coverage of imports by exports and is calculated as follows (Milanović et al., 2013):

$$rrij^{\,t} = \frac{\dfrac{Xij^{\,t}}{Mij^{\,t}}}{\dfrac{\sum\limits_{i=1}^{n} Xij^{\,t}}{\sum\limits_{i=1}^{n} Mij^{\,t}}} \qquad (3)$$

where:
rrij - coefficient of relative (intra-agrarian) coverage of imports by exports,

Xij – exports of division *i* (fruits or vegetables) of the agri-food sector of the country *j*,

Mij – imports of division *i* (fruits or vegetables) of the agri-food sector of the country *j*,

$\sum\limits_{i=1}^{n} Xij^{t}$ - total exports of all divisions *i* of the agri-food sector of the country *j*,

$\sum\limits_{i=1}^{n} Mij^{t}$ - total imports of all divisions *i* of the agri-food sector of the country *j*.

The presented coefficient measures the contribution to the reduction of the external trade deficit or the increase of the external trade surplus of the agri-food sector. The divisions with a higher value of this indicator contribute more to reducing the overall external trade deficit of the entire sector.

Another inevitable indicator in the analysis of external trade, but also the internal competitiveness of exports, are the unit values of exports and imports. These indicators are obtained as a quotient of the value of exports/imports according to the quantities of exports/imports:

$$Pxj = \frac{X_J}{Q_{xj}} \qquad\qquad (4)$$

$$Pmj = \frac{M_j}{Q_{mj}} \qquad\qquad (5)$$

where:
P_{xj} – unit values of fruit or vegetable exports,
P_{mj} – unit values of fruit or vegetable imports,
X_j – value of fruit or vegetable exports,
M_j – value of fruit or vegetable imports,
Q_{xj} – quantity of fruit or vegetable exports,
Q_{mj} - quantity of fruit or vegetable imports.

The comparison of the unit values of exports and imports of fruits and vegetables was made according to the groups of export markets: EU, CEFTA countries and Russia, and it is related to defining the necessary structural changes and geographical redirection of exports.

4. Results and Discussion

The "Vegetables and Fruits" division has a significant participation in the export of the agri-food sector of the Republic of Serbia. In addition to the cereals division, with an average share of 23% in the analysed period, it is the most important division of this sector (Marković, 2019). The first part of the analysis is dedicated to the graphical presentation of the individual share of fruits and vegetables in the total export of agri-food products. Graph 1 clearly shows that fruits have a greater importance than vegetables in the formation of total exports of this sector, with an average of 19% for the total research period.

**Graph 1. Share of fruits and vegetables in the export of the agri-food sector
of the Republic of Serbia (in percentage)**
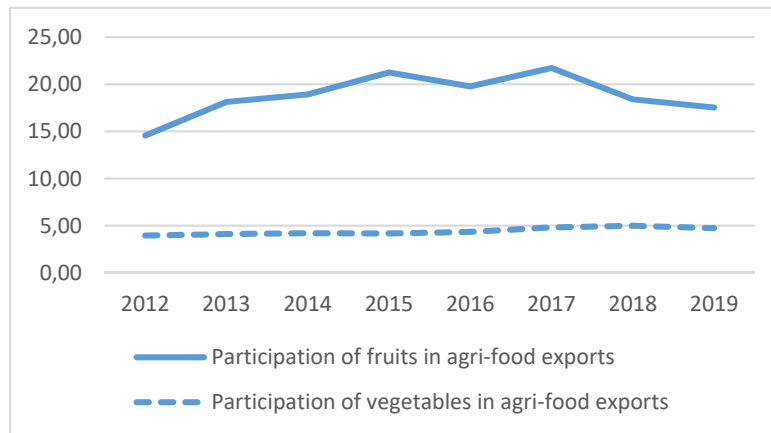
Source: Authors' calculation according to the data of the Statistical Office
of the Republic of Serbia, 2020.

Table 1 shows the most represented products in the export of the Republic of
Serbia, which belong to the fruit and vegetable divisions. The main export product
of this sector are raspberries, which in 2015 were in sixth place in total exports,
with the value of realized exports of over 267 million USD. Among other fruit and
vegetable products, in the period from 2012, only apples were in the top 20 most
important export products (in 2015).

**Table 1. Fruit and vegetable products that are ranked in the top 20 most important
export products of the Republic of Serbia from 2012 to 2019**

Product	Rank							
	2012	2013	2014	2015	2016	2017	2018	2019
Raspberries, frozen, without sugar	10	10	8	**6**	9	10	10	10
Apples, fresh	-	-	-	19	-	-	-	-

Source: Authors' presentation based on data from the Statistical Office
of the Republic of Serbia, 2020

The Chart 2 shows simultaneously the coverage of imports by exports of fruits
and the coverage of imports by exports of vegetables. It can be pointed out that the
coverage of imports by exports in the fruit division is significantly higher. This
coverage averaged 273% for the survey period. This means that fruit exports were
2.73 times higher than fruit imports. The coverage of imports by exports of
vegetables was, on average, twice lower than the coverage of imports by exports of
fruits and amounted to 127%. Throughout the period, both divisions achieved

positive net exports. However, since 2017, both divisions have recorded a decline in this indicator.
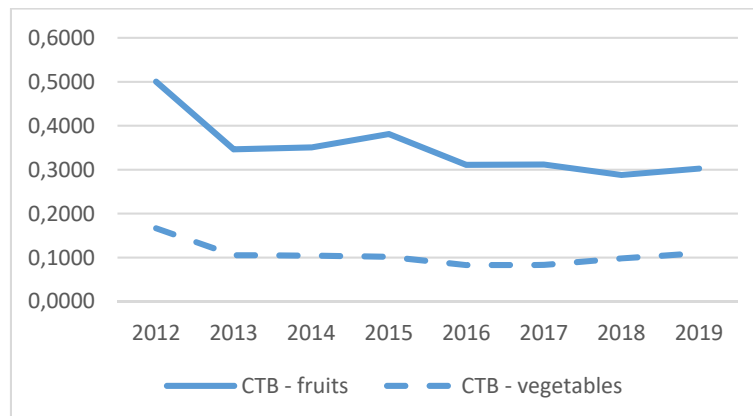
Graph 2. Coverage of imports by exports of fruits and vegetables in the Republic of Serbia (in percent)
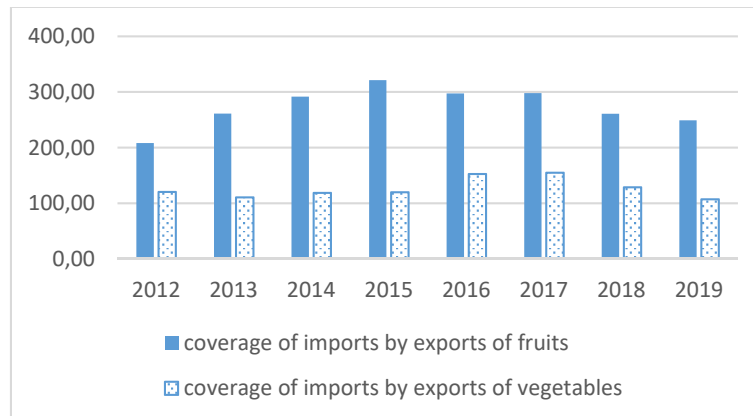
Source: Authors' calculation according to the data of the Statistical Office of the Republic of Serbia, 2020.

Graph 3 illustrates the CTB index values of fruits and vegetables. The average value of this index for the fruit division was 0.35% in relation to the CTB for the vegetable division, which is significantly lower, 0.11%. This confirms as well, the high importance of the fruit division in the external trade in goods of the Republic of Serbia.
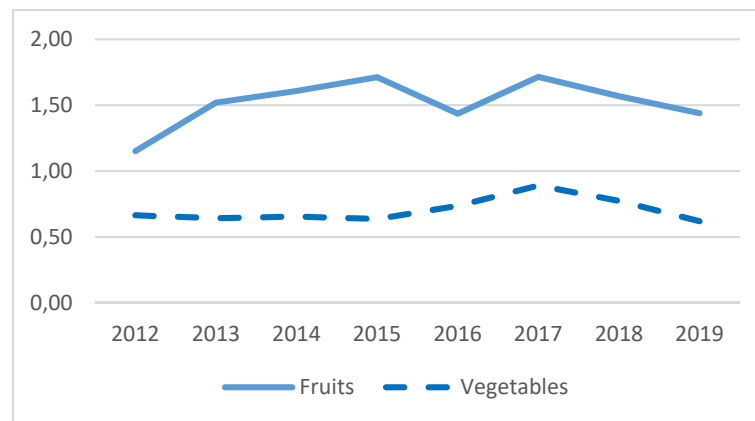
Graph 3. CTB index of fruits and vegetables in the Republic of Serbia for the period from 2012 to 2019

Source: Authors' calculation according to the data of the Statistical Office of the Republic of Serbia, 2020

Another in a series of charts showing the importance of fruits and vegetables in external trade is given below. Chart 4 illustrates the movement of the coefficients of intra-agrarian coverage of imports by exports of fruits and vegetables, as a modified index of relative coverage of imports by exports. The average value of the coefficient of intra-agrarian coverage of imports by fruit exports is 1.52, as opposed to 0.70, which is the coefficient of intra-agrarian coverage of imports by exports related to the vegetable division. The dynamics of these coefficients can be estimated on the basis of the following graph. What can be stated is that the contribution of fruits is twice as high as the contribution of vegetables to the increase in the agricultural surplus.

Graph 4. Evolution of the coefficient of intra-agrarian coverage of imports by exports of fruits and vegetables in the Republic of Serbia

Source: Authors' calculation according to the data of the Statistical Office of the Republic of Serbia, 2020

Graph 5 shows the movement of unit values of fruit and vegetable exports. A higher unit values of fruit exports in relation to the unit prices of vegetable exports (1.29 in relation to 0.76) are a reflection of a better and higher quality structure of fruit exports.

This means that the products of the fruit industry have a higher stage of processing compared to vegetable products. Therefore, the export of fruits should be favoured, while the creators of agrarian policy should find ways to restructure the export of vegetables in favour of processed (food) products, and not only raw materials for further processing. Additionally, the choice of adequate packaging of vegetables can increase their average export price.

Table 2 shows the comparison of unit values of exports and imports of fruits and vegetables. In this example, the situation is far better with the fruit division, because the average unit values of exports are higher than the average unit values

of imports, which is not the case with vegetables (in all years of analysis). The rest of the tendencies can be seen in the table below.

Graph 5. Unit values of fruit and vegetable exports (in thousands of USD per ton
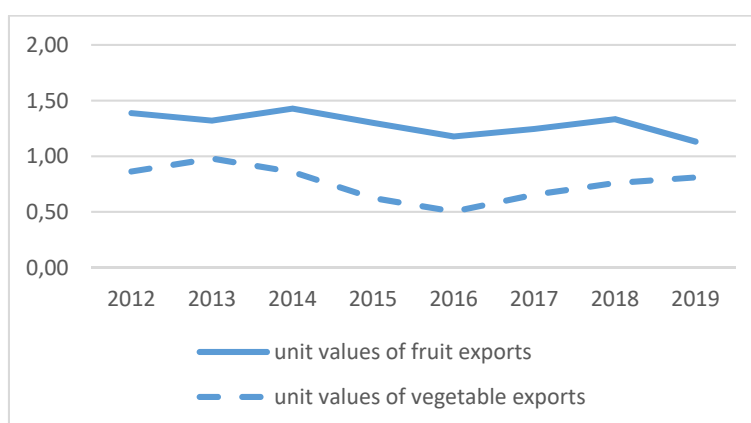
Source: Authors' calculation according to the data of the Statistical Office
of the Republic of Serbia, 2020

Table 2. Unit values of exports (Pxj) and imports (Pmj) of fruits and vegetables of the Republic of Serbia from 2012 to 2019 (in thousands of USD per ton)

Year	Fruits			Vegetables		
	Pxj	Pmj	Pxj:Pmj	Pxj	Pmj	Pxj:Pmj
2012	1,39	0,80	*1,73*	0,86	0,85	*1,02*
2013	1,32	0,87	*1,52*	0,98	0,82	*1,20*
2014	1,43	0,88	*1,63*	0,86	0,80	*1,08*
2015	1,30	0,73	*1,79*	0,62	0,71	*0,87*
2016	1,18	0,65	*1,82*	0,50	0,74	*0,68*
2017	1,25	0,73	*1,70*	0,66	0,74	*0,88*
2018	1,33	0,80	*1,68*	0,76	0,76	*1,00*
2019	1,13	0,86	*1,31*	0,81	0,84	*0,96*

Source: Authors' calculation according to the data of the Statistical Office
of the Republic of Serbia, 2020

Graph 6 illustrates the unit values of fruit exports by observing the groups of export markets given in the methodology. Namely, the goal was to determine where the raw materials are mostly exported, and what is the position of the products of the higher stages of finalization, on the other side. The highest unit values of fruit exports are realized on the most important export market in Serbia (EU), which is a favourable fact. However, what is worrying is the negative trend

that has occurred since 2014, reflected in a constant decrease in the unit value of fruit exports on the EU market.

Graph 6. Unit values of fruit exports on the markets of the EU, CEFTA and the Russian Federation (in thousands of USD per ton)
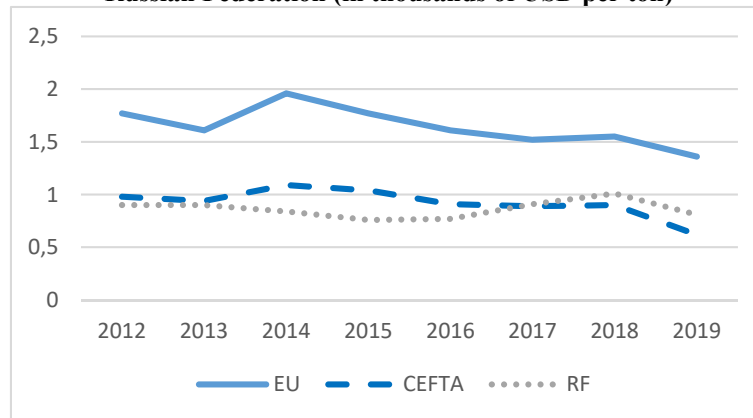
Source: Authors' calculation according to the data of the Statistical Office
of the Republic of Serbia, 2020

Graph 7. Unit values of vegetable exports on the markets of the EU, CEFTA and the Russian Federation (in thousands of USD per ton)
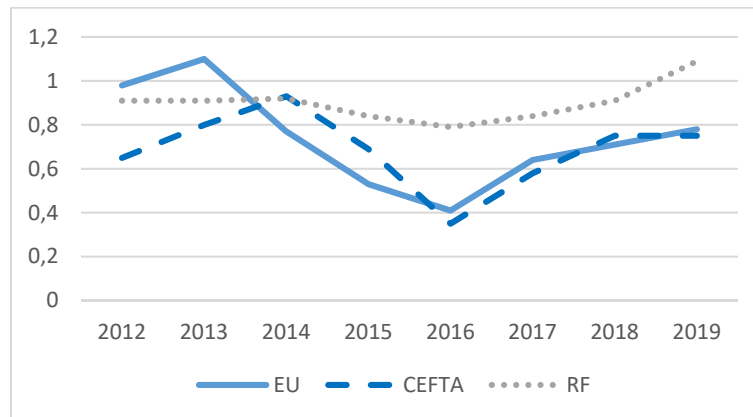
Source: Authors' calculation according to the data of the Statistical Office
of the Republic of Serbia, 2020

Graph 7 illustrates, on the other hand, the unit value of vegetable exports of the Republic of Serbia to the markets of the EU, CEFTA countries, as well as the market of the Russian Federation. It is noticeable that the unit values of vegetable exports fluctuate far more, primarily due to the instability of their prices. Moreover, in the vegetable division, the highest unit values of exports are achieved

by exports to the Russian Federation, so vegetable products should be redirected to this market. This will certainly improve the overall structure of exports. In the EU and CEFTA markets, the movement of unit values of exports is almost identical. Since 2017, there has been a trend of constant increase in the unit values of vegetable exports.

Conclusion

Agricultural and food products occupy a high share in the external trade of the Republic of Serbia. Among them, fruit and vegetable products stand out. It is about the division "Vegetables and fruits" according to the SITC. The aim of this paper was to quantify the contribution and importance of this division in external trade in goods of the Republic of Serbia, on the basis of the ex-post analysis, as well as to compare the internal competitiveness of fruits and vegetables.

Although both fruits and vegetables record a positive contribution, since they are divisions that realize positive net exports, fruits have a significantly higher importance in both total and agri-food external trade, according to all the analysed indicators. Also, fruits achieve significantly higher unit values of exports compared to vegetables, and consequently, a production of fruits should be relatively more supported (especially since in the last period there has been a decline in the unit values of exports). The Republic of Serbia has extraordinary natural conditions for fruit production, and it is also a very profitable branch of agriculture (Užar & Vlahović, 2019). On the other hand, agricultural policy measures should include vegetable production, but in a completely different way. The production and export of final, processed products should be strengthened, in order to improve the terms of trade and the structure of external trade of goods, with the purpose of continuing the growth of unit values of vegetable exports that have been realized in recent years. Fruit exports perform well on the EU market, while higher-processing vegetable products are mainly sold on the Russian market.

With the improvement of the structure of external trade, the process of transition from price to non-price (qualitative) factors of competitiveness, such as design, packaging, method of delivery, method of payment and the like, goes simultaneously. This requires the micro level to provide, among other things, greater investment in research and development, processing capacity and storage systems. In addition, investing in organic production can be extremely important, because it is a production that results in healthier, better quality and more marketable products (Marković, 2018). This goal is supported by the fact that in Serbia there are almost ideal conditions for the development of fruit and vegetable production from organic agriculture, which would improve the structure of primary agriculture as well.

Suggestions for future research could go in the direction of considering the competitiveness of fruits and vegetables at the level of commodity groups or products (according to SITC), as lower levels of aggregation. Finally, as the study considered the importance of fruits and vegetables in external trade od goods from the aspect of internal competitiveness, future research should investigate indicators of external competitiveness, such as the RCA index and the Grubel-Lloyd index.

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ZNAČAJ VOĆA I POVRĆA U SPOLJNOJ TRGOVINI REPUBLIKE SRBIJE

Rezime: Osnovni cilj istraživanja jeste sagledavanje i komparacija značaja voća i povrća u spoljnoj trgovini robom Republike Srbije. Prema Standardnoj međunarodnoj trgovinskoj klasifikaciji (SMTK) „Povrće i voće" predstavlja odsek koji je dominantan u srpskom izvozu poljoprivredno-prehrambenih proizvoda, te je neophodno istražiti njegovu konkurentnost. Ključni alati koji se primenjuju u analizi jesu pokrivenost uvoza izvozom, zatim indeks doprinosa trgovinskom bilansu (DTB), kao i analiza jediničnih vrednosti izvoza i uvoza u cilju poređenja i ocene strukture spoljne trgovine voća i povrća. Rezultati pokazuju da voće, po svim indikatorima, beleži značajno višu konkurentnost u odnosu na povrće, kao i viši značaj u spoljnotrgovinskoj robnoj razmeni. To saznanje može poslužiti kreatorima agrarne politike da favorizuju proizvodnju i izvoz voćarskih proizvoda jer mogu radikalno poboljšati strukturu ukupnog izvoza, pogotovo ako je reč o prerađenim proizvodima. Budući da se radi o višegodišnjim zasadima, rezultate nije moguće očekivati u nekom kraćem vremenskom periodu. Dosadašnja istraživanja nisu posebno razmatrala značaj ovog segmenta poljoprivredno-prehrambenog izvoza i njegovu internu konkurentnost (imajući u vidu primenjene indikatore), u čemu se sastoji i osnovna korist studije u okviru ovog rada.

Ključne reči: izvoz, spoljna trgovina, pokrivenost uvoza izvozom, indeks doprinosa trgovinskom bilansu (DTB), jedinične vrednosti izvoza i uvoza, voće, povrće, spoljnotrgovinski bilans roba.

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Milan Marković, Ph.D. in Economics, is a research associate at the Innovation Center of the University of Niš. During studies, he received recognition by the Faculty of Economics, the University of Niš and the City of Niš. He was the recipient of scholarship from the Young Talent Fund of the Republic of Serbia. From 2014 to 2019 he was engaged in the project "Improving the Competitiveness of the Public and Private Sector by Networking Competences in the Process of European Integration of Serbia", funded by the Ministry of Education, Science and Technological Development of the Republic of Serbia. Milan Marković is a member of the editorial board of the Journal "*Economics of Sustainable Development*", a member of the Association of Economists and Managers of the Balkans and the Scientific Society of Agrarian Economists of the Balkans, and a reviewer of many scientific journals. His key areas of interest are national economics, agricultural economics and international finance.

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