



The intensity of regional food trade among the Western Balkan countries during periods of crisis

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Abstract

This study explores the intensity of food trade among the Western Balkan (WB) countries (Albania, Bosnia and Herzegovina, Montenegro, North Macedonia, and Serbia) during periods of crisis, emphasizing the impact of COVID-19 and the Ukrainian-Russian conflict on regional trade dynamics. The impact of this crisis was measured over three analyzed years: 2018, representing a reference year for comparison, then 2020 as the year affected by COVID-19, and 2022, being affected by the pandemic as well as the Ukrainian-Russian crisis. All data collected are from the “Trade Statistics for International Business Development Database”. Conclusions about the intensity of exchange of agricultural and food products within the WB region were obtained by calculating Regional Intensity of Trade of Export (RITE) and Regional Intensity of Trade of Import (RITI). Higher values than 1 indicate intensity in trade or dominance of trade in specific products with a particular region compared with the trade with the world. In the case of trade among the WB countries, the COVID-19 crisis did not affect the increase in trade volume. However, there was an increase in intra-regional trade by about 50% when compared with 2020 and 2022. The RITE coefficients for all countries except Albania were greater than 1, indicating intensified export of agricultural and food products to the WB region compared with their global export. The RITI index is very important in crisis, as it somewhat answers the question of who “feeds” the country during crises. All WB

countries had the RITI indices greater than 1, indicating a higher intensity of food imports from the region compared with the world. According to this research, the RIT coefficients measured generally declined in the years of crises, meaning that the countries shifted their export focus to other regions but still the most significant foreign and intense trade partners in agricultural and food products were countries from the region.

Key words: Western Balkans, crisis, trade, agricultural and food products

Introduction

In crises, every country first focuses on its own needs and strives to maintain the food security of its population. As a rule, the export of food is reduced or even limited, and in case of a shortage of some types of food, the country tries to increase its import, to provide sufficient food reserves for as long a period as possible (Hellegers, 2022). In the exchange of surplus food, in addition to the price, its trade is also driven by political reasons, e.g., an effort to help friendly countries, before selling the produce to countries with which there are no particular close relations. Food is one of the least elastic goods the consumption of which cannot be postponed, so one of the priorities in international trade is the provision of sufficient quantities of food for the population. In such situations, it is logical for the countries to procure food from the nearest destinations of the supply, which are the neighbouring countries.

In the past, the Western Balkans countries often belonged to the same states, which is why they shared a common history, tradition, and a similar language. The last such period was the period of the Socialist Federal Republic of Yugoslavia (from 1945 to the 1990s), which today includes six independent states in the Western Balkans (Slovenia, Croatia, Bosnia and Herzegovina, Serbia, Montenegro, and North Macedonia). Only Albania was outside that once unique political and trading area. The inclination of the countries of the Western Balkans towards mutual trade has remained from that period. This paper aims to check and determine whether the exchange of food products between the countries of the Western Balkans increases in periods of crisis, i.e., whether they turn to each other more in solidarity in critical moments, or whether these crises have no effect on preferences when choosing foreign trade partners. To examine this hypothesis, the foreign trade exchange between the countries of the Western Balkans was analyzed during the two most recent crises, the pandemic crisis caused by the COVID-19 virus (started in 2020) and the Ukrainian crisis caused by the war conflict between Ukraine and Russia (started in 2022). Both crises took on a global scale and resulted in problems in international trade due to restrictions on free trade and problems with the transportation of goods, and indirectly affected food supply insecurity (Brüntrup,

2020; Kakaei et al., 2022; van Meijl et al., 2022; Roubik et al., 2023; Leal Filho et al., 2023; Neik, 2023).

Global and domestic drivers (e.g., changes in policies and diets, urbanization, globalization) brought about significant changes in both the organization and functioning of agri-food markets with far-reaching implications in terms of international agri-food trade and food and nutrition security (Mrdalj and El Bilali, 2021). The trade dimension of the regional cooperation policy sought to rebuild former Yugoslavia trade relationships because increased trade between the countries of the region would foster economic growth as well as act as a means towards greater political cooperation (Barlett, 2009). All Western Balkan countries, with the exemption of Serbia, have a deficit in the foreign trade of agricultural and food products (Martinovska Stojcheska et al., 2021). Looking at individual crops, Serbia could cover the deficits of all other Western Balkan countries in cereals (by grain or flour). Fruit, except tropical fruit, and vegetable needs, could also be met through mutual trade among the Western Balkan countries/territories (Bogdanov et al., 2022). All Western Balkan countries have comparative advantages in the global market, except Albania (Matkovski et al., 2022). Higher export levels and a decrease in deficit can be achieved by increasing the quality and quantity of agricultural products and by improving competitiveness in the market (Milovanović et al., 2018).

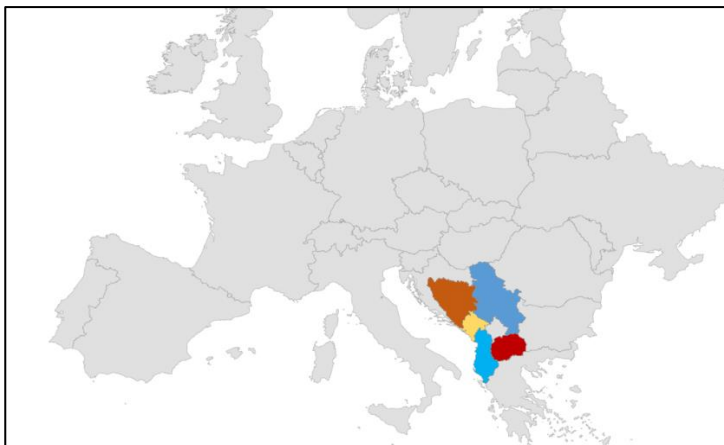


Figure 1 The Western Balkans countries on the map of Europe

According to Bojnec and Ferto (2009), higher and more stable relative trade advantages are found for bulk primary raw agricultural commodities and less for consumer-ready foods. The establishment of the Central and Eastern Europe Free Trade Agreement (CEFTA) has also contributed to the maintenance of mutual trade between countries that used to be part of the same country and are now part of the

CEFTA (Ćejvanović et al., 2014). As the Western Balkan countries are in the process of adjusting the economic system to the rules of the European Union (EU) and the World Trade Organization (WTO), there have been numerous changes to the market of agri-food products, that result from actual integration, but also these countries need to abide by the rules and principles in the international trade of these products that are regulated within the WTO (Zekić and Matkovski, 2019). The trade of EU-27 with Balkan countries increased in the last decade (Voicilas, 2014). The low level of food security in the Western Balkans countries compared to the EU can become a problem in crisis conditions, such as political instability, the migrant crisis, and the state of the pandemic. This is particularly pronounced in countries with high food supply variability, dependence on cereal imports, and lower GDP per capita (Matkovski et al., 2020).

Recognizing the importance of producing sufficient food to cover a country's needs in circumstances of increasing risk of trade disruptions due to war or political tensions, Brankov and Matkovski (2022) aimed to find the level of food self-sufficiency in the Western Balkan countries. The conflict in Ukraine deepened the problem - it has blocked ports; the price of freight and fertilizer costs increased due to rising fuel prices; social unrest and political violence are rising, adding to the risk for the global economy; the number of internally displaced and refugees increased; many countries have empty reserves (having been used up during the pandemic); the already-soaring world food prices went up.

Material and Methods

The study primarily analyzed the foreign trade exchange between the countries of the Western Balkans, namely: Albania, Bosnia and Herzegovina, Montenegro, North Macedonia, and Serbia. Specifically, the analysis focused on the trade of agricultural and food products classified under chapters 1-24 of the Harmonized System (HS) tariff codes. However, to calculate the index explained in the methodology in the following paragraphs, data on the total trade of each country with the Western Balkan countries and the trade of each country with other countries worldwide, both in agricultural and food products and in total trade, were necessary. Data was collected from [trademap.org](https://www.trademapp.org) - Trade statistics for international business development. The data were collected for the countries for three years under analysis: 2018, 2020, and 2022.

The research hypotheses that were examined are:

- 1) The Western Balkans countries mutually trade agri-food products more intensively than with other countries.
- 2) During periods of crises, countries of the Western Balkans increased mutual agri-food trade more intensively than with other countries.

Foreign trade exchange between the countries of the Western Balkans increases in crises. The emergence of the COVID-19 virus pandemic and the

Ukrainian crisis, the war conflict between Ukraine and Russia, were taken as more recent crises to test the hypothesis. The pandemic started and had the biggest consequences on food security in 2020, so that year was taken as a characteristic of that crisis. The Ukrainian-Russian war started in 2022, when there were major disruptions in the food supply to other countries from that region, so that year was taken as characteristic of that crisis. The year 2018 was taken as the control year, the closest "normal" year in which there were no significant problems in the international food trade.

The Regional Intensity of Trade (RIT) index was used to measure the intensity of mutual trade exchange. Based on existing trade flows, this index measures to what extent countries trade with each other more intensely within a region than with other countries of the world (Ibitoye et al., 2018, Yeats, 1997). In other words, the trade intensity indicator says whether a region exports more to a given destination than the world does on average or not (Vahalik, 2014).

The result takes the value between 0 to $+\infty$, while a value higher than 1 indicates an intense trade relationship in group products (in this case agricultural and food products, HS 01-24).

The regional trade *export* (X) intensity index is defined as:

$$RITX_k^{ij} = \frac{X_k^{ij}/X_k^i}{X^{ij}/X^i}$$

Where:

- X_k^{ij} - represents country i export of goods k to region j ,
- X_k^i - is country i export of goods k to the world,
- X^{ij} - is country i total export to region j ,
- X^i - is country i total export to the world.

The regional trade *import* (I) intensity index is defined as:

$$RITI_k^{ij} = \frac{I_k^{ij}/I_k^i}{I^{ij}/I^i}$$

Where:

- I_k^{ij} - represents country i import of goods k from region j ,
- I_k^i - is country i import of goods k from the world,
- I^{ij} - is country i total import from the region j ,
- I^i - is country i total import from the world.

Results and Discussion

Data calculated based on the established methodology and formulas presented in the previous chapter will be presented in this section.

In order to reach better conclusions, a broader perspective on the food and agricultural product exchange is analyzed in this study. In addition, graphical representations of the exports and imports of the Western Balkan countries with the WB group are presented. All values are displayed in absolute terms.

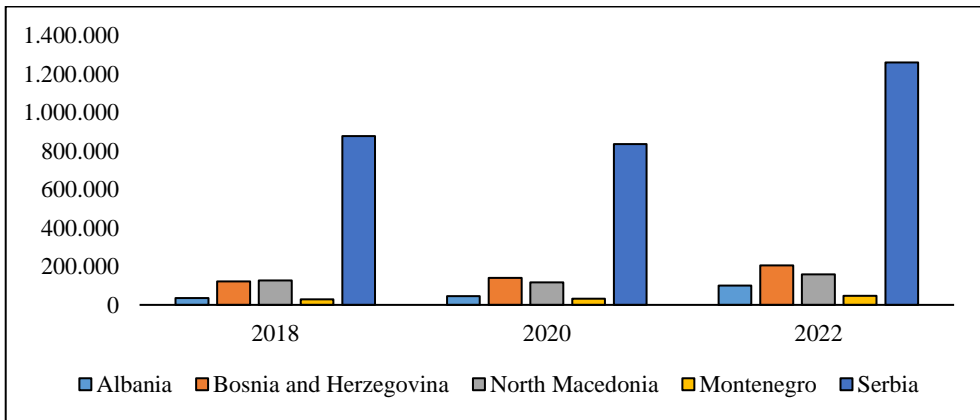


Figure 2 Agricultural and food products exported to other WB countries (€ thousands)

Figure 2 illustrates the total export value to the WB countries, under tariff codes 01-24, i.e., agricultural and food products, for all the countries analyzed in this study. The total value of agricultural and food products exported in the WB region for all analyzed countries in 2018 was €1,191,285,000, in 2020 it was €1,171,179,000, and in 2022 it was €1,774,090,000. Therefore, in absolute terms, the amount of multilateral trade in the region increased by around 50% over 4 years, indicating significant growth and increased intensity of trade. However, when comparing the exchange values, it is evident that the trade was roughly the same in 2018 and 2020. Still, this significant increase in trade intensified after 2020, following the impact of the COVID crisis and the Ukrainian-Russian crisis.

The countries with the lowest average share (2018, 2020, 2022) in the export of agricultural and food products within the WB region were Montenegro (2.6%) and Albania (4.2%). Next, North Macedonia had an average share of 9.9% for the analyzed three years, and Bosnia and Herzegovina averaged 11.3%. It is very indicative that all countries together had a common share in exports to the WB of 26.3% (2018), 28.6% (2020), and 28.9% (2022), while Serbia exported an average of 72.1% of the value to other WB countries. Out of all Western Balkan countries, Serbia was the largest exporter of agricultural products to the region. The countries

that increased their share in exports to the WB countries in this region, and in the analyzed period, were Albania and Bosnia and Herzegovina (by 2.2% and 1.4%, respectively), while North Macedonia remained relatively stagnant. Montenegro decreased its share in the analyzed trade by 1.4%, and Serbia by approximately 2.6%.

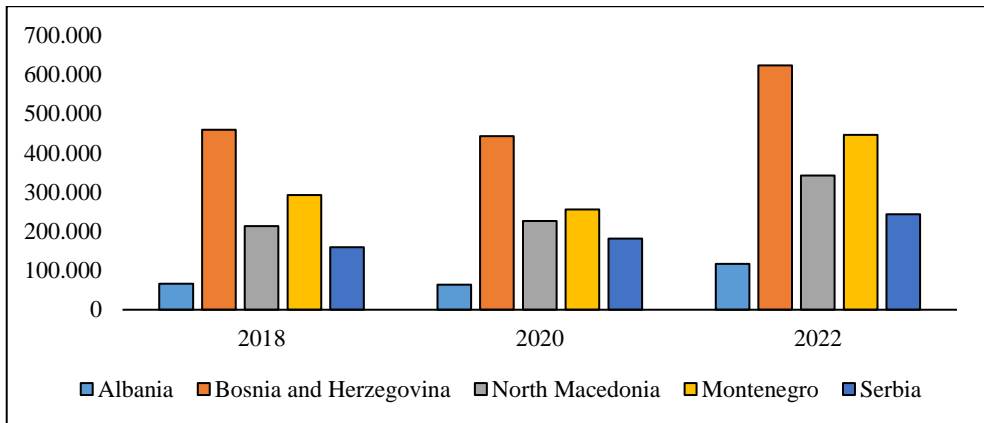


Figure 3 Agricultural and food products imported from other WB countries (€ thousands)

The total value of imports of food and agricultural products remained the same (€1,191,285,000 in 2018; €1,171,179,000 in 2020, and €1,774,090,000 in 2022). Unlike exports, Serbia did not dominate the structure of imports from other WB countries; on the contrary, it imported almost the least from them. According to Figure 3, the country that imported the most from other regional countries was Bosnia and Herzegovina, which imported 37% of the total exchange value for the import of agricultural and food products, averaging €508,911,000 in three analyzed years. This value remained at approximately the same level in 2020 compared with 2018, however, it significantly increased in absolute terms by 2022 (€623,814,000). It should be noted that the total exchange had increased in 2022 compared to the previous two years by about 50%. The second country that relied the most on imports of food and agricultural products from regional countries was Montenegro, with a share of approximately 25% of the total imports into the WB countries from the same region. North Macedonia followed with a slightly lower share of around 20% of the total imports from the region. Serbia imported about 14% of the value of the total exchange of agricultural and food products within this group. Albania participated the least in the import structure, with approximately 6% on average for the analyzed three years. Therefore, if we consider the absolute exchange of agricultural and food products, it had increased for all countries, while the share of individual countries in total WB countries' import from regions remained roughly at 1-2%, which is negligible.

Figure 4 displays data on the intensity of food exports in the region, while Figure 5 presents data related to food imports.

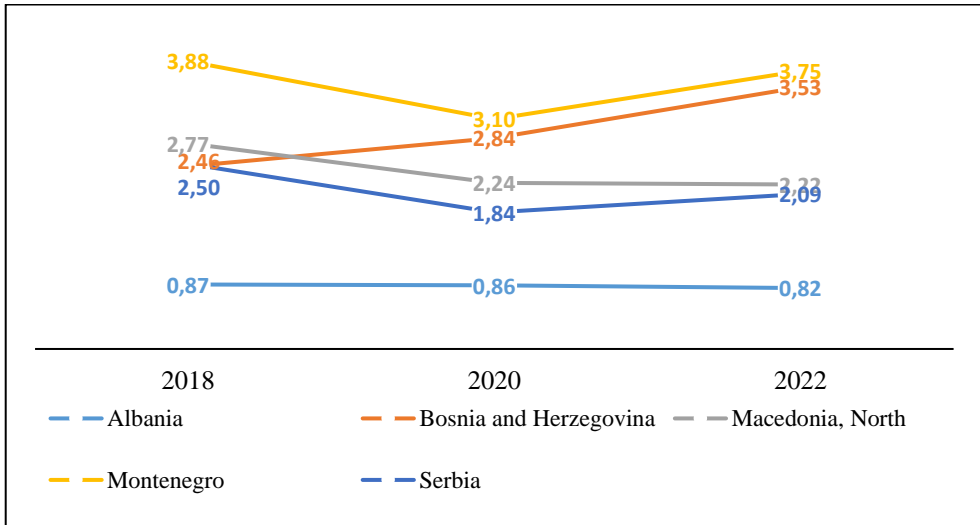


Figure 4 The Regional Intensity of Trade Index of Export (RITE)

Figure 4 shows the movement of the Regional Trade Intensity Index (RITE) of food exports in the region (HS codes 01-24) for all Western Balkan countries. Based on the presented, it can be observed that the coefficients for all countries except Albania were greater than 1, indicating intensified, dominant export of agricultural and food products to the Western Balkan countries compared with their global export.

Albania successively had the RITE coefficient of 0.87 in 2018, 0.86 in 2020, and 0.82 in 2022, showing stability in exports, meaning that the mentioned crises did not cause a change in the export intensity to the Western Balkan countries. Even after the impact of COVID-19 and the Ukrainian crisis, the share of agricultural and food product exports to the WB countries remained the same compared with the world. It is important to emphasize that historically Albania had a limited trade with the rest of the Western Balkan region because it had never been part of a common economic area.

Bosnia and Herzegovina had $RITE_{2018}$ 2.46, $RITE_{2020}$ 2.84, and $RITE_{2022}$ 3.53, indicating an intensified export of agricultural and food products to the WB countries with the onset of new crises.

For North Macedonia, $RITE_{2018}$ was 2.77, $RITE_{2020}$ 2.24, and $RITE_{2022}$ 2.22, meaning its intensive export to WB countries slightly decreased with the onset of the COVID-19 crisis.

Montenegro had the highest intensity of export of agricultural and food products to other WB countries among the analyzed countries, with the highest measured RITE coefficients. For Montenegro, $RITE_{2018}$ was 3.88, $RITE_{2020}$ 3.10, and $RITE_{2022}$ 3.75; thus, it can be said that the COVID-19 crisis had a significant impact on the intensity of trade, redirecting exports partially from the WB countries to other world countries, and the subsequent crisis influenced the re-establishment of higher export intensity of food to the WB countries.

Serbia had $RITE_{2018}$ 2.50, $RITE_{2020}$ 1.84, and $RITE_{2022}$ 2.09, with the lowest intensity of food exports to the WB countries among the analyzed former Yugoslav countries. Also, the COVID-19 crisis led to a decrease in the intensity of food exports, while the following period contributed to the re-establishment of higher intensity in food exports to the WB countries.

As a general overview of the WB countries, there was a high intensity in the export of agricultural and food products (HS codes 01-24) to the WB region. Additionally, the impact of the COVID-19 crisis on the decline in the intensity of food exports in the region (except for Bosnia and Herzegovina) was noted, followed by a resurgence in the export intensity in 2022 under the influence of new crises.

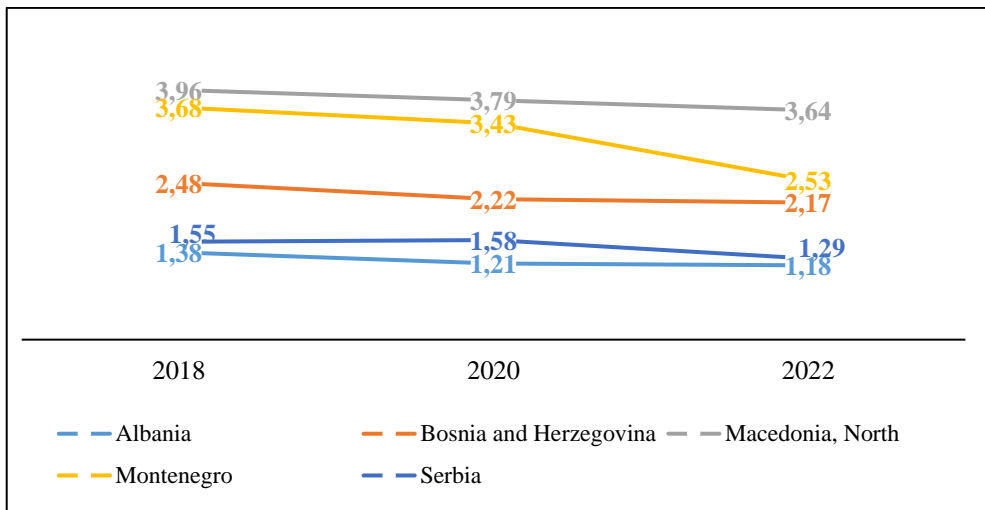


Figure 5 The Regional Intensity of Trade Index of Import (RITI)

Figure 5 displays values and trends of the Regional Trade Intensity index of food imports for all Western Balkan countries. While the previously analyzed RITE index is very important, it can be noted that the RITI indicator in crisis periods is more critical, as it somehow answers the question of who "feeds" the population of a country during crises when establishing new food procurement channels is not straightforward. This index will show from which countries/regions a country is more dependent on in terms of agricultural and food products. All Western Balkan

countries had the RITI indices greater than 1, indicating a higher intensity of food imports from the region compared with the world.

The same as with the previous index, Albania had the lowest calculated values of import intensity indicators, $RITI_{2018}$ was 1.38, $RITI_{2020}$ was 1.21, and $RITI_{2022}$ was 1.18. Thus, the COVID-19 crisis caused a decline in the intensity of importing agricultural and food products from the WB region, and the recorded level of intensity remained almost the same in 2022.

Bosnia and Herzegovina also recorded a decrease in the RITI coefficient under the influence of the COVID-19 crisis, as $RITI_{2018}$ was 2.48, $RITI_{2020}$ 2.22, and $RITI_{2022}$ was 2.17, reducing the share of food imports from the WB countries in this period compared with the world. However, it still imported significantly more agricultural and food products from the Western Balkan (WB) region than from the rest of the world.

Additionally, North Macedonia's RITI coefficient was lower in 2020 and 2022 compared with the previously analyzed year $RITI_{2018}$ 3.96, $RITI_{2020}$ 3.79, and $RITI_{2022}$ 3.64. This country was, in turn, the most import-dependent in the WB region, i.e., it had the most intensive imports when it comes to agricultural and food products.

The intensity of food imports by Montenegro from the WB countries had been influenced by global economic and political crises, as indicated by the calculated RITI coefficients, i.e., $RITI_{2018}$ was 3.68, $RITI_{2020}$ 3.43, and $RITI_{2022}$ 2.53 which showed a decline in values.

Besides Albania, within the WB countries, Serbia had the lowest intensity of importing agricultural and food products from these countries, $RITI_{2018}$ 1.55, $RITI_{2020}$ 1.58, and $RITI_{2022}$ 1.29. The COVID-19 crisis did not affect a decrease in the intensity of imports, but to a lesser extent, crises in subsequent years influenced a decline in the intensity of food imports.

Thus, the Western Balkan countries diversified their imports of agricultural and food products, thereby reducing their dependence on countries from which they import the most and the risk of insufficient food quantities for the population's nutrition. These countries found new distribution channels and new food exporters.

Table 1 is intended to facilitate a better discussion of the results obtained from the preceding graphs. It is evident that the Western Balkan (WB) countries have been primarily export-oriented towards other countries in the region, as each country has had one of its neighbouring countries as the most significant partner in agricultural product exports. Additionally, most countries have had several neighbouring countries among the top five most significant partners. Regarding food imports, the WB countries have been less dependent on regional countries, satisfying their deficits in the domestic market from the global market. For Bosnia and Herzegovina (BH), Montenegro, and North Macedonia, Serbia stands out as the most significant partner importing products into the country. In contrast, Albania and Serbia, as the most significant importers of food and agricultural products, do not have any countries from the WB region. The data presented in this table lead to a conclusion

that Serbia is the most significant and dominant trading partner for the WB region (the most significant partner in both imports and exports for BH, Montenegro, and North Macedonia).

Tab. 1 The most significant export and import partners in food and agriculture products in 2022

Export	Albania	BH	Montenegro	N. Macedonia	Serbia
Partner 1	N. Macedonia	Serbia	Serbia	Serbia	BH
Partner 2	Montenegro	Croatia	BH	Greece	Italy
Partner 3	Greece	Montenegro	Italy	Germany	Germany
Partner 4	Serbia	N. Macedonia	Germany	Croatia	Montenegro
Partner 5	Italy	Austria	Albania	Bulgaria	Russian F.
Import	Albania	BH	Montenegro	N. Macedonia	Serbia
Partner 1	Greece	Serbia	Serbia	Serbia	Germany
Partner 2	Germany	Croatia	BH	Germany	Italy
Partner 3	Netherlands	Germany	Croatia	Italy	Croatia
Partner 4	Slovenia	Brazil	Italy	Poland	Hungary
Partner 5	Italy	Italy	Germany	BH	Poland

Source: Trade statistics for international business development (trademap.org)

Data on the export of agri-food products from the Western Balkan countries to other regional countries show that during the pandemic year of 2020 there was a slight decrease in the value of trade in agri-food products within the multilateral exchange among the regional countries. This is partially due to strategic government reactions to increase national food reserves and panic-driven rational and irrational consumer reactions to stockpile goods. After the pandemic crisis, the next disruption arose from the outbreak of armed conflict between Russia and Ukraine, making it difficult to supply grains and other agricultural products from that region. Therefore, there were no significant changes, and apart from Serbia, no Western Balkan country had had significant surpluses of grains and oilseeds to fill the gap caused by difficulties in their imports, primarily from Ukraine. Another reason is that the Western Balkan countries imported little grain directly from Ukraine and Russia. They mainly import cereals (HS code 10) and products of the milling and confectionery industry (HS code 11) predominantly from Serbia, followed by Hungary, and to a lesser extent from Croatia, Italy, and Bosnia and Herzegovina. During the next crisis period in 2022, the exchange of food products between the Western Balkan countries increased by about 50% in absolute values, largely driven by food price inflation, which began to rise sharply in mid-2021, with the food price index of inflation reaching almost 15% in Europe in 2022.

Bosnia and Herzegovina was the only country to intensify its food exports to the region in both analyzed years, possibly exploiting the opportunity of disrupted international trade. For Albania, it has already been noted that it traditionally had not traded much with the WB region, so the pandemic crisis did not change that.

After overcoming the pandemic shock and stabilizing trade, most Western Balkan countries intensified their food exports to that region, except for Serbia and North Macedonia, which slightly reduced their export intensity of food and agricultural products to the WB countries.

Based on the results and discussion, the following could be stated: the hypothesis that Western Balkans countries mutually trade agri-food products more intensively than with other countries has been confirmed. These conclusions are based on high RIT indices for imports and exports, indicating a high intensity of agri-food product exchange. The second hypothesis is rejected because the measured RIT indicators for imports and exports declined during the measurement period, thus reducing the intensity of food exchange within the region.

Conclusion

The Western Balkans countries have historically been interconnected, primarily the countries that were part of a common state for almost half of the 20th century (Bosnia and Herzegovina, Serbia, Montenegro, and North Macedonia). During that period, the raw material and processing capacities of the food industry were interdependent, and goods often crossed the borders of the then-republics, now independent states. With the independence of the former state and the emergence of new states in the Western Balkans, mutual trade continued, but they simultaneously discovered the benefits of free trade, resulting in a constant increase in foreign trade with countries outside the region. Except for some agricultural products, most Western Balkan countries do not have food self-sufficiency, so they are reliant on food imports in the long term. The exception is Serbia, which alone records a trade surplus in agricultural and food products. In conditions of free international trade, importing food shortages from within or outside the region was not a problem. With the onset of global crises, disruptions in international food trade occur, especially affecting countries dependent on food imports. The latest situations of disruptions in world food trade occurred in 2020 when the pandemic caused by the COVID-19 virus broke out and in 2022 when the war conflict between Russia and Ukraine broke out (which is still ongoing).

The results of this research confirmed that in absolute terms, food imports and exports remained at the same level in 2020 as in 2018. Still, the exchange of agricultural and food products in terms of value, primarily under the influence of price increases, went up in 2022 by about 50% compared with the first two analyzed years. Serbia is the most dominant foreign trade partner within the WB framework as it is the first destination both for imports and exports of Bosnia and Herzegovina, North Macedonia, and Montenegro. Therefore, these crises have influenced the increase in the absolute value of the exchange of agricultural and food products within the Western Balkan countries.

Based on the analyzed RITE and RITI coefficients, it can be concluded that all countries have a high intensity of exchange in terms of agricultural and food products with the WB countries. Within the analysis of export intensity measured by the RITE coefficient, Bosnia and Herzegovina intensified the export of the sector to the region, Albania was the only one with a coefficient below 1, indicating a weak export intensity, and it remained at the same level in the analyzed three years. Montenegro reduced the export intensity of food products to a lesser extent, while North Macedonia and Serbia significantly reduced the export intensity to the region. By analyzing the RITI coefficient, it can be concluded that all countries reduced the intensity of import from the WB countries to a lesser extent, while Montenegro significantly reduced its dependence on these countries regarding the import of agricultural and food products. Therefore, one general conclusion would be that the export and import dependence of the WB countries on the region regarding food products has decreased, so, the hypothesis cannot be fully confirmed since the intensity of exchange, according to the established RIT coefficient, has decreased. This decrease primarily occurred in 2022, which had a significant impact on reducing the intensity of exchange in agricultural and food products, and countries found other channels for agricultural products to fill the food deficit.

The first hypothesis has been confirmed that countries intensively exchange agri-food products within the region. However, the second hypothesis, that countries turn more to trade in agri-food products with regional countries during crises, has been rejected, considering that the measured coefficients have declined, and countries have turned to other trading partners after the crises.

References

- Barlett, W. (2009). Regional integration and free-trade agreements in the Balkans: opportunities, obstacles and policy issues, *Econ Change Restruct* 42, 25–46. <https://doi.org/10.1007/s10644-008-9062-4>
- Bogdanov, N., Vaško, Ž., Arias, P., Pavloska Gjorgjieska, D. (2022). Assessment of the impact of COVID-19 on agrifood systems in the Western Balkans – Regional Synthesis Report. Budapest, FAO. <https://doi.org/10.4060/cb7907en>
- Bojnec, S., Ferto, I. (2009). Agro-food trade competitiveness of Central European and Balkan countries, *Food Policy* 34, 417-425. <https://doi.org/10.1016/j.foodpol.2009.01.003>
- Brankov, T., Matkovski, B. (2022). Is a Food Shortage Coming to the Western Balkans?, *Foods* 11(22). <https://doi.org/10.3390/foods11223672>
- Brüntrup, M. (2020). Food Security in Times of Crisis: Poor Developing Countries are Different. Briefing Paper 9/2020, German Development Institute, <https://doi.org/10.23661/bp9.2020>

- Ćejvanović, F., Ivanković, M., Lasić, M., & Vaško, Ž. (2014). The Impact of Foreign Trade In Agricultural Products Of Bosnia And Herzegovina Within The Framework Of CEFTA 2006. *Economics of Agriculture* 61(4), 1-13. <https://doi.org/10.5937/ekoPolj1404975C>
- Eurostat, EC (2022). Western Balkans - EU—International Trade in Goods Statistics.
- Hellegers, P. (2022). Food security vulnerability due to trade dependencies on Russia and Ukraine. *Food Sec.* (14), 1503–1510. <https://doi.org/10.1007/s12571-022-01306-8>
- Ibitoye, O., Ogunyemi, A.I., Ojo, S.O., Ibitoye, A.L. (2018). Achieving food security through regional integration: a case of food trade within Ecowas region, *Journal of Economics and Trade* 3(1), 25-42.
- Kakaei, H., Nourmoradi, H., Bakhtiyari, S., Jalilian, M., Mirzaei, A. (2022). Effect of COVID-19 on food security, hunger, and food crisis. *COVID-19 and the Sustainable Development Goals*. 2022:3–29. <https://doi.org/10.1016/B978-0-323-91307-2.00005-5>
- Leal Filho, W., Fedoruk, M., Paulino Pires Eustachio, J.H., Barbir, J., Lisovska, T., Lingos, A., Baars, C. (2023). How the War in Ukraine Affects Food Security. *Foods* 2023, (12), 3996. <https://doi.org/10.3390/foods12213996>.
- Martinovska Stojcheska, A., Kotevska, A., Janeska Stamenkovska, I., Dimitrievski, D., Zhllima, E., Vaško, Ž., Bajramović, S., Kerolli Mustafa, M., Spahić, M., Kovačević, V., Koç, A.A., Bayaner, A., Ciaian P. (2021). Recent agricultural policy developments in the context of the EU approximation process in the pre-accession countries. Publications Office of the European Union, Luxembourg, <https://doi.org/10.2760/041338> , JRC124502.
- Matkovski, B., Đokić, D., Zekić, S., Jurjević, Ž. (2020). Determining Food Security in Crisis Conditions: A Comparative Analysis of the Western Balkans and the EU. *Sustainability*. 2(23). <https://doi.org/10.3390/su12239924>
- Matkovski, B., Zekić, S., Đokić, D., Jurjević, Ž., Đurić, I. (2022). Export Competitiveness of Agri-Food Sector during the EU Integration Process: Evidence from the Western Balkans. *Foods*, 11, 10. <https://doi.org/10.3390/foods11010010>
- Milovanović, M., Radosavac, A., Knežević, D. (2018). State of agro-food foreign trade in Bosnia and Herzegovina. *Economics of Agriculture*, 65(3), 1059-1070. <https://doi.org/10.5937/ekoPolj1803059M>
- Motamed-Jahromi, M., Meshkani, Z., Mosavi-Negad, S.M., Momenabadi, V., Ahmadzadeh, M.S. (2021). Factors Affecting Panic Buying during COVID-19 Outbreak and Strategies: A Scoping Review. *Iran J Public Health*. 2021 Dec;50(12), 2473-2485. <https://doi.org/10.18502/ijph.v50i12.7929>
- Mottaleb, K.A., Govindan, V. (2023). How the ongoing armed conflict between Russia and Ukraine can affect global wheat food security? *Front. Food. Sci. Technol.* (3), <https://doi.org/10.18502/ijph.v50i12.792910.3389/frfst.2023.1072872>

- Mrdalj, V., El Bilali, H. (2021). Chapter 4 - Agri-food markets, trade, and food and nutrition security, *Food Security and Nutrition 2021*, 87-106. <https://doi.org/10.1016/B978-0-12-820521-1.00004-6>
- Mrdalj, V., Ostojić, A., Vaško, Ž., Brković, D. (2017). Structure and Determinants of Intra-Industry Trade in Agro-Food Sector of Bosnia and Herzegovina, *European Journal of Interdisciplinary Studies* 3(3), 154–163. <https://doi.org/10.26417/ejis.v3i3.p154-163>
- Neik, T.X., Siddique, K.H.M., Mayes, S., Edwards, D., Batley, J, Mabhaudhi, T., Song, B.K., Massawe, F. (2023). Diversifying agrifood systems to ensure global food security following the Russia–Ukraine crisis. *Front. Sustain. Food Syst.* (7) :1124640, <https://doi.org/10.3389/fsufs.2023.1124640> .
- Roubík, H., Lošťák, M., Ketuama, C.T., Soukupová, J., Procházka, P., Hruška, A., Hakl, J., Páček, L., Karlík, P., Kocmánková Menšíková, L., Jurasová, V., Amarachi Ogbu, C., Hejzman, M. (2023). COVID-19 crisis interlinkage with past pandemics and their effects on food security. *Global Health* 19, 52, <https://doi.org/10.1186/s12992-023-00952-7>
- Vahalik, B. (2014). Regional Bilateral Trade Analysis of the European Union, China and ASEAN, *Procedia Economics and Finance* 12 (2014), 709 – 717. [https://doi.org/10.1016/S2212-5671\(14\)00397-9](https://doi.org/10.1016/S2212-5671(14)00397-9)
- Van Meijl, H., Bartelings, H., van Berkum, S., Cui, D., Smeets-Kristkova, Z., van Zeist, W.J. (2022). Impacts of the conflict in Ukraine on global food security, Report 2022-052, Wageningen Economic Research, <https://doi.org/10.18174/570589>.
- Voicilas, D.M. (2014). Agri-food Products’ Competitiveness in Balkan Region - Study on Romanian Agri-food Trade, *Turkish Journal of Agricultural and Natural Sciences, Special Issue 2*, 1955-1964.
- Wang, H. & Hao, N. (2020). Panic buying? Food hoarding during the pandemic period with city lockdown. *Journal of Integrative Agriculture* (19), 2916-2925. [https://doi.org/10.1016/S2095-3119\(20\)63448-7](https://doi.org/10.1016/S2095-3119(20)63448-7)
- Yeats, A.J. (1997). Does Mercosur's trade performance raise concerns about the effects of regional trade arrangements?, Policy, Research working paper, no. WPS 1729 Washington, D.C.: World Bank Group.
- Zekić, S., Matkovski, B. (2019). Integration of market of agri-food products of Western Balkans countries in process of accession to the European Union, SUSTAINABLE AGRICULTURE AND RURAL DEVELOPMENT IN TERMS OF THE REPUBLIC OF SERBIA STRATEGIC GOALS REALIZATION WITHIN THE DANUBE REGION - sustainability and multifunctionality, Thematic proceedings, Belgrade 2019, 763-777. <https://www.trademap.org/>
<https://www.fao.org/faostat/en/#data>

Интензивност размјене прехранбених производа унутар региона Западног Балкана у периодима криза

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Сажетак

Ова студија истражује интензитет трговине храном међу земљама Западног Балкана (Албанија, Босна и Херцеговина, Црна Гора, Сјеверна Македонија и Србија) током периода криза, са нагласком на утицај пандемије КОВИД-19 и украјинско-руског сукоба на регионалну трговинску динамику. Утицај ове кризе мјери се током три анализираних године: 2018. године, која служи као референтна година за поређење, затим 2020. године, коју је обиљежила пандемија КОВИД-19, и 2022. године, која је поред претходне кризе обухватила и украјинско-руски сукоб. Сви подаци су прикупљени из базе података Trade map - Trade statistics for international business development. Закључци о интензитету размјене пољопривредних и прехранбених производа унутар региона Западног Балкана постигнути су кроз израчунавање Регионалног Интензитета Трговине извоза (РИТЕ) и Регионалног Интензитета Трговине увоза (РИТ). Вриједности коефицијената веће од 1 указују на интензитет у размјени или доминацију размјене одређеним производима са одређеним регионом у поређењу са размјеном са свијетом. У случају спољне трговине међу земљама Западног Балкана, криза КОВИД-19 није утицала на повећање обима. Међутим, дошло је до повећања унутаррегионалне трговине за око 50% у поређењу 2020. и 2022. године. Коефицијенти РИТЕ за све земље осим Албаније су већи од 1, што указује на интензиван извоз пољопривредних и прехранбених производа у регион Западног Балкана у поређењу са њиховим глобалним извозом. Индекс РИТИ је веома важан у периодима кризе, јер донекле одговара на питање ко "храни" земљу током криза. Све земље ЗБ имају РИТИ индексе веће од 1, што указује на већи интензитет увоза хране из региона у поређењу са увозом хране из свијета. Све земље Западног Балкана имају РИТИ индексе веће од 1, што указује на већи интензитет увоза хране из региона у поређењу са свијетом. Према овом истраживању, измјерени РИТ коефицијенти су генерално опадали током година криза, што значи да су земље преусмјериле фокус извоза ка другим регионима, али и даље најзначајнији спољнотрговински и интензивни

трговински партнери у пољопривредним и прехранбеним производима су земље из региона.

Кључне ријечи: Западни Балкан, кризе, размјена, пољопривредни и прехранбени производи

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