

## Advantage and competitiveness of Bosnia and Herzegovina's wine foreign trade

Nemanja Jalić<sup>1</sup>, Aleksandar Ostojić<sup>1</sup>, Marko Ivanković<sup>2</sup>

<sup>1</sup>*Faculty of Agriculture, University of Banja Luka, Republic of Srpska, BiH*

<sup>2</sup>*Faculty of Agriculture and Food Technology of Mostar, BiH*

### Abstract

The aim of this article is to observe the trade exchange by calculating Relative Trade Advantage index with the wine products (HS 2204) of Bosnia and Herzegovina and the most common destinations concerning export and import. The data is used from the trade map data and wine institute data. The trade is based on the former Yugoslavia countries (Serbia, Croatia, North Macedonia, Slovenia, and Montenegro). Export market share and Import market share with these countries ranges from 60% to 95% of overall trade. The most important import partner is Serbia with a stake of 28.2%. The largest export partner is Croatia with 52.3% of all BiH's export. The calculated RTA index had values from (-0.674) in 2012 to (-0.567) in 2019. Negative values of RTA index represent relative trade disadvantages in Bosnia and Herzegovina's wine foreign exchange.

*Key words: EMS, IMS, RTA, wine, Bosnia and Herzegovina*

### Introduction

The subject of this research is a foreign trade and wine market of Bosnia and Herzegovina during the period of eight years (from 2012 to 2019). Development of wine viticulture is determined by the demand of wine on the global market and the traditional demand of local wines on the national market (Toteva, 2017).

In the last 20 years, the global wine market has experienced rapid globalization, export has been doubled, New World countries (Chile, Australia, South Africa, Argentina) have emerged on the world wine scene, consumer expectations have changed, and the quality of wine has significantly risen (Katunar et al., 2020). World wine production is growing and European countries still produce over 70% of total world production (Perović, 2013). Among the EU countries, France and Italy have the revealed comparative advantage in the wine industry. Despite the fact that Germany has imported a large amount of wine, Germany is one of the largest producers of wine in the world. Also, it should be mentioned that these countries' wines are recognised at the international market (Zivzivadze and Taktakishvili, 2019). According to EUROSTAT (<https://ec.europa.eu>, 2016), France, Italy, Spain, Austria, Hungary, Bulgaria, Slovenia, and Luxembourg have a positive foreign trade balance of wine (Sudarić et al., 2020).

The development of competitive viticulture is limited in Bosnia and Herzegovina to areas that have "comparative advantages in natural terms" (Ivanković et al., 2018). Bosnia and Herzegovina has a deficit in the foreign trade in agri-food products and, according to "Analysis of Foreign Trade of BiH in 2019", BiH had a decline in exports in 2019 compared to 2018 by 8% and imports grew by 2%. The total deficit also increased by 7%.

Jovanovska Boshkovska (2018) concludes that producing higher quantity of bulk wine instead of bottled wine cannot provide recognisability and cannot be perceived as comparative advantage (which the RCA index confirms).

Analysing the foreign trade of wines of the Republic of Serbia, Vlahović et al. (2011) state that the wine sector of Serbia, and any other country, should change the structure of exports and tend to increase the share of high-quality wines.

The size of BiH wine sector compared to the top world wine producing countries is relatively small and therefore is not a substantial player in the world wine market (Ivanković et al., 2009). BiH's wine export decreased in terms of quantity, but the export reached a value in 2010 of 5.7 million BAM. The value of imported wine dropped from 20.7 million BAM in 2002 to 8.7 million BAM in 2010. (Preparation of IPARD sector analyses in Bosnia and Herzegovina, 2012). The most important factors in connection with wine consumption are the consumers' income, the product price and the existence and accessibility of substitutes (Chladkova et al., 2009). In the paper written in 2018 Ostojić et al. claim that consumers in BiH are increasingly consuming wine, but also that the choice of wine depends on wine price firstly. Despite the struggling economy and weak consumer purchasing power, BiH consumers are increasingly shifting from beer to wine (Stanojčić, 2017). The aim of this paper is to observe the trade exchange, comparative advantages or disadvantages of wine products (HS 2204) of Bosnia and Herzegovina and the most common destinations (Serbia, Montenegro, Slovenia, Croatia, and North Macedonia) by calculating the

Relative Trade Advantage index. This index shows the share of agri-food products in the total export of the country in relation to the share of the same sector in world exports (Levak, 2016). Also, the aim of this paper was to show Export and Import Market Share in Bosnia and Herzegovina’s wine trade with regional partners. It was guided by Crescimanno and Galati paper from 2014 about Italian wine sector, export and import market share.

## Material and Methods

The paper used the data from the trade map data<sup>1</sup> and wine institute data<sup>2</sup>. The method of the-so-called “desk research” was used for this research. Standard mathematical and statistical methods were applied for the analysis of collected secondary data (time series analysis, descriptive statistics of the observed period and data). The results are presented in tables and graphs. Three indices were calculated in the paper for the 2012-2019 period to show the market share of former Yugoslav countries in total exchange. The method is taken from Crescimanno and Galati (2014).

Export market share (EMS) and the Import market share (IMS) are calculated for the outline of the structure and geography of trade in wine products that are expressed as:

$$EMS = 100 * ( X_{ij} / X_{iw} )$$

$$IMS = 100 * ( M_{ij} / M_{iw} )$$

X and M stand for exports and imports, *j* and *w* for the region, whilst *i* is the product. Market shares are expressed as values from 0 to 100 percent; thus, a value of zero indicates that the exports (or imports) of a given product *i* from a given country *j* are null; whilst a value of 100 indicates that the entirety of export (or import) of the product *i* is carried out by the country *j*.

After calculating the EMS and IMS indices, the Relative trade advantage index is indirectly weighed by the importance of the relative export (RXA<sub>*i*</sub>) and import advantages (RMP<sub>*i*</sub>). Specifically, the RXA expresses the export share for the product *i* of a given country in the market *j* compared to the share held for other products; the index has a higher (or lower) unit value if the countries have an advantage (or disadvantage) in its competitive position for exporting the product *i*. X stands for exports and M stands for imports. The indices *i* and *n* relate to categories of products, whilst *j* and *r* relate to the region. There is a

---

<sup>1</sup> <https://www.trademap.org/Index.aspx>

<sup>2</sup> <https://wineinstitute.org/our-industry/statistical-economic-resources/>

similar index for imports, the RMP, which expresses the import share for the product  $i$  of a given country in the market  $j$  compared to the same share held for the remaining products; this indicator is greater (or less) than 1 if the country has an advantage (or disadvantage) in its competitive position for importing the product  $i$ .

$$RXA = \frac{x_{ij}/x_{ir \neq j}}{x_{nj \neq i}/x_{nr \neq i}}$$

$$RMP = \frac{m_{ij}/m_{ir \neq j}}{m_{nj \neq i}/m_{nr \neq i}}$$

While the RXA and RMP indices use only export or import for calculation, the RTA index considers both export and import. According to the increasing importance of the inner-branch trade, this aspect becomes very important (Hambalkova, 2006). The Relative Trade Advantage index ( $RTA_{ij}$ ), originally developed by Bela Balasa in 1965, analyses the international competitiveness of wine production and trade in the case of Bosnia and Herzegovina.

$$RTA_{ij} = RXA_{ij} - RMP_{ij}$$

The RTA index is classified in three categories:  $RTA < 0$  refers to all those product groups with a relative comparative trade disadvantage.  $RTA = 0$  refers to all those product groups in a breaking point without relative comparative trade advantage or relative comparative trade disadvantage.  $RTA > 0$  refers to all those product groups with a relative comparative trade advantage (Bojncic and Ferto, 2012).

## Results and Discussion

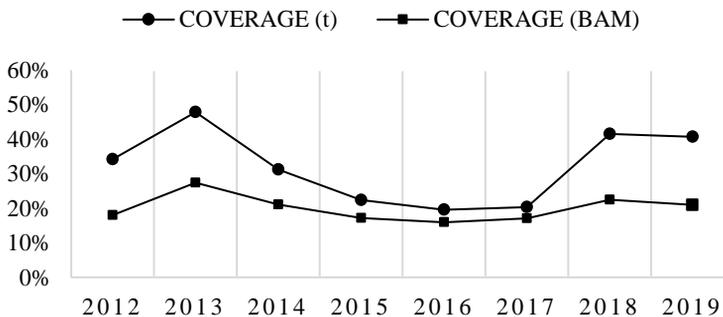
### *Trade exchange*

The results of this research provide the information that values of import are several times larger than the values of export, about 5 times, meaning that Bosnia and Herzegovina records clear deficit in the foreign trade exchange for the analysed product group of the harmonised customs tariff system (2204). The trade is mainly based on the former Yugoslav countries (Serbia, Montenegro, Slovenia, Croatia, and North Macedonia). The trade with the rest of the world takes a share only from 10 to 30 percent.

Tab. 1. BiH's Import (M) and Export (E) wine descriptive statistics, author's calculation<sup>3</sup>

	M Ser.	E Ser.	M Cro.	E Cro.	M Mne.	E Mne.	M N.Mac.	E N.Mac.	M Slo.	E Slo.
Min (000 BAM)	3,578	345	3,148	973	1,624	65	1,595	-	229	1
Max (000 BAM)	4,399	546	5,027	2,121	3,573	117	3,358	78	753	52
Rg <sup>4</sup> (%)	0.8	6.8	4.3	2.9	-2.7	7.4	7.3	-	-14.2	14.9

According to Table 1. only in 2013 the export to Macedonia was not zero. For North Macedonia we did not find data for other years. Values are written in thousands and it is clear that BiH has trade deficit in wine exchange. Export minimum of wine exchange was recorded in the itrade with Slovenia. Also, BiH had a low level of exchange in trade with Montenegro. Export maximum was recorded in trade with Croatia. High export volume was also recorded in the trade with Serbia. The Rg coefficient shows the average annual growth rate. Import Rg<sub>Serbia</sub> had a lower value than export Rg<sub>Serbia</sub>, meaning that export had higher growth trend. It is not the case with Croatia where Rg shows unfavourable situation in export and import trends. Import from Montenegro had a negative trend and export had a trend of growth. Import from Macedonia had a trend of growth, export was equal to zero at the start and at the end of eight-year period. The best position based on the calculated Rg index was recorded for the exchange with Slovenia, export had a positive trend, trend of growth and import had a negative trend. Trade coverage is shown in the following graph.



Graph 1. Bosnia and Herzegovina's trade balance in quantity and value, author's calculation<sup>5</sup>

<sup>3</sup> Abbreviations: Ser-Serbia, Cro-Croatia, Mne-Montenegro, N.Mac- North Macedonia, Slo-Slovenia

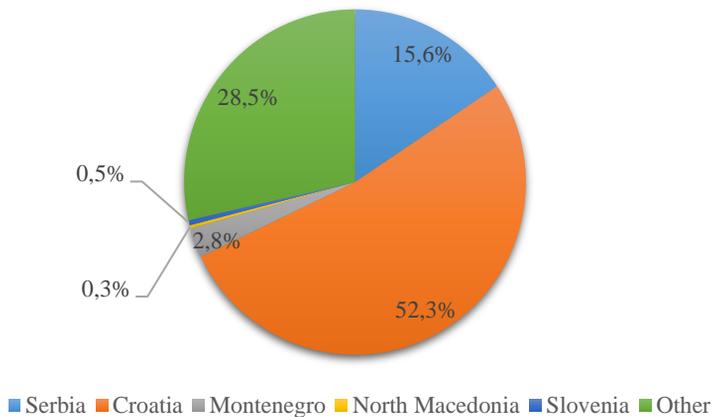
<sup>4</sup> Average annual growth rate

<sup>5</sup> Because of missing data for the trade with Serbia only in 2018, the trade trend is extrapolated from 2012 to 2017 and that value becomes a value for calculation indices for the year 2018.

Quantity trade coverage of wine takes a share from about 20% to 50% with a declining trend from 2013 to 2016 and growth trend in 2017 and 2018. (Graph 1.). Import quantity was higher than the exported, from 2 to 5 times depending on the year. Imported wine value was on average about 5 times higher than exported value (coverage from 16% to 27%). Minor oscillations were noted in BAM coverage than in tons.

*Export market share (EMS) and Import market share (IMS)*

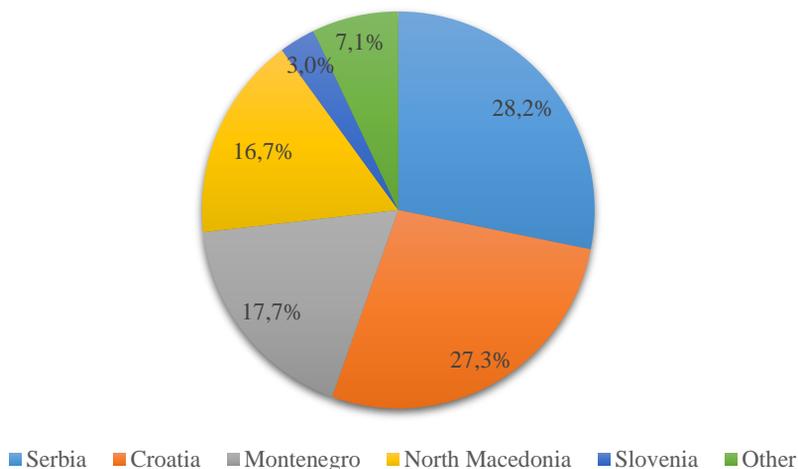
The following graph (Graph 2.) shows wine export market share of Bosnia and Herzegovina for the 2012-2019 period.



Graph 2. Export market share of Bosnia and Herzegovina, the 2012-2019 period average<sup>6</sup>

The export market share to the countries of former Yugoslavia was on average more than 70 percent ( $EMS_{Yugoslavia}=71.5\%$ ). Other countries Export market share had a value of about 29% on average. The largest share in the BiH export was with Croatia ( $EMS_{Croatia}=52.3\%$ ). Thesecond largest export value includes Serbia ( $EMS_{Serbia}=15.6\%$ ). Other former Yugoslav countries had a very small share in BiH export, ( $EMS_{Montenegro}=2.8\%$ ), ( $EMS_{Slovenia}= 0.5\%$ ), ( $EMS_{North Macedonia}=0.3\%$ ).  $EMS_{Serbia}$  ,  $EMS_{Croatia}$ ,and  $EMS_{Montenegro}$  in the last year of the period were higher than in the year before. In 2019 Export market share with Macedonia and Slovenia was lower than in 2018.

<sup>6</sup> *Ibidem*



Graph 3. Import market share of Bosnia and Herzegovina, the 2012-2019 period average<sup>7</sup>

On average, BiH had the largest import market share with Serbia ( $IMS_{Serbia}=28.2\%$ ). The second largest import value was realized with Croatia ( $IMS_{Croatia}=27.3\%$ ). The third and fourth largest import share was achieved in the trade with Montenegro ( $IMS_{Montenegro}=17.7\%$ ) and North Macedonia ( $IMS_{North\ Macedonia}=16.7\%$ ). The smallest volume of import was recorded with Slovenia ( $IMS_{Slovenia}=3\%$ ) in comparison to other countries from Graph 3. Former Yugoslav countries Import market share was on average more than 90 percent ( $IMS_{Yugoslavia}=93\%$ ). The rest is imported from other countries ( $IMS_{Other}=7\%$ ). In the last year BiH had EMS growth only in trade with Croatia and Montenegro. Other countries' values decreased (Graph 3.).

#### *Relative Trade Advantage index (RTA<sub>i</sub>)*

The smaller wine-producing countries in the EU cannot rely on the advantages in trade as they have smaller volumes produced by numerous small wineries (Katunar et al., 2020). Also, it is the Bosnia and Herzegovina's case, too, where viticulture is characterized by the dominance of small vineyard areas of 0.001 to 2 ha, and there is a small number of vineyards with more than 10 hectares in one plot (Banjanin et al., 2016).

<sup>7</sup> Because of missing data for the trade with Serbia only in 2018, the trade trend was extrapolated from 2012 to 2017 and that value became a value for calculation indices for the year 2018.

Tab. 2. BiH wine  $RTA_i$  compared to world/ countries calculated by the authors (data source: intracen.org), author's calculation

<i>RTA</i>	<i>World</i>	<i>Serbia</i>	<i>Croatia</i>	<i>North Macedonia</i>	<i>Slovenia</i>	<i>Montenegro</i>
2012	-0.674	-0.655	-1.632	-27.525	-3.064	-0.842
2013	-0.408	-0.301	-0.846	-15.600	-2.026	-0.595
2014	-0.485	-0.416	-0.554	-22.517	-1.567	-0.550
2015	-0.643	-0.621	-0.642	-21.776	-1.991	-0.599
2016	-0.643	-0.831	-0.577	-20.762	-2.848	-0.687
2017	-0.608	-1.013	-0.762	-18.573	-2.908	-0.652
2018	-0.518	-0.825	-0.700	-20.739	-2.709	-0.560
2019	-0.567	-0.912	-0.728	-14.763	-3.407	-0.579

Regarding the wine sector, the Vollrath index was applied also to analyse the international competitiveness of wine production in Bosnia and Herzegovina for the 1999-2002 period (Ivanković et al., 2005), in the Slovak Republic (Hambalková, 2006), and Italian wine competitiveness (Crescimanno and Galati, 2014). According to the results of Sudarić, 2020 "Viticulture and wine as export potential of Croatia", it is evident that Croatia had a clear lack of comparative advantages in the wine export in 2015 and 2016. Based on this paper, if the Bosnia and Herzegovina's  $RTA_i$  index has values from (-0.674) to (-0.408), it can be concluded that BiH has also a clear lack of comparative advantage in wine exchange. Bosnia and Herzegovina had the lowest level of trade advantage for the 2012-2019 period and the worst position in wine trade with North Macedonia, from (-15) to (-27.5), but the value of this index has been increasing which suggests that the situation in trade is improving. Although the largest part of Macedonian wine ends up on the markets of the EU, the former Yugoslav markets remain to be a very important export destination because the export value of these markets is larger as a result of bottled wine export (Miteva-Kacarski, 2018).

Then, the BiH's  $RTA_i$  with Slovenia is about (-2), (-3) which shows better position in trade than in trade with North Macedonia, but it also shows a bad position.  $RTA_{Slovenia}$  at the beginning and at the end of the period had approximately the same value. The trade advantage in exchange with Croatia is getting better,  $RTA_{Croatia}$  was about (-0.8).  $RTA_{Serbia}$  was also negative about (-0.7), it became more unfavourable at the end of the period which implies trade disadvantage. Comparing the largest partners in wine trade, Bosnia and Herzegovina had the best position in trade with Montenegro,  $RTA_i$  was from (-0.6) to (-0.85).

In their paper from 2009, Ivanković et al. got results that the  $RTA_{world}$  values for the 1999-2001 period were close to zero which means very low relative revealed trade advantages in BiH wine trade, slightly competitive. Compared to 2012-2019 when the level of  $RTA_{world}$  was about (-0.6), which means a high level of trade disadvantages, BiH had a better position at the beginning of the 21<sup>st</sup> century (1999-2001) with a relatively small trade advantage.

## Conclusion

Bosnia and Herzegovina's wine exchange is mainly based, i.e., it has the largest volume of trade exchange, with former Yugoslav countries (Croatia, then with Serbia, North Macedonia, Montenegro, and Slovenia). BiH exports wine mostly to Croatia, but imports wine mostly from Serbia. The export market share (EMS) with these countries (2012-2019) was about 70% for the analysed period. The level of import market share (IMS) was about 90%. On the basis of these results, it can be clearly concluded that the trade is regionally oriented. The RTA index is negative, so it is clear that relative trade disadvantages in wine exchange with the world are observed. Especially, disadvantages are noticeable in the trade with North Macedonia, then Slovenia, Serbia, Croatia and Montenegro. Bosnia and Herzegovina has better RTA results in total wine exchange  $RTA_{world}$  than with former Yugoslav partners, but they are also negative. To improve competitiveness of the BiH wine sector, the authors recommend applying a marketing approach in production and selling. In addition to high quality wine production, packaging, design, brand sign, and wine name also have a big contribution to competitiveness of this sector.

## References

- Banjanin, T., Berjan, S., Milić, V., & Bilali, E. H. (2016). State of and Conditions for Viticulture Development in Bosnia and Herzegovina. *Agro-knowledge Journal*, 17(3), 279-287. doi: 10.7251/AGREN1603279B
- Bojnec, Š., & Fertő, I. (2012). Complementarities of trade advantage and trade competitiveness measures. *Applied Economics*, 44(4), 399-408. doi:10.1080/00036846.2010.508725
- Chládková, H., Tomšík, P., & Gurská, S. (2009). The development of main factors of the wine demand. *Agricultural Economics (Zemědělská Ekonomika)*, 55(7), 321-326. doi:10.17221/58/2009-agricecon
- Crescimanno, M., & Galati, A. (2014). Competitiveness of Italian wines in the international market. *Bulgarian Journal of Agricultural Science, Agricultural Academy*, 20(1), 12-22.

- FAO Regional Office for Europe and Central Asia (2012). The Wine Sector in Bosnia and Herzegovina. Preparation of IPARD Sector Analyses in Bosnia and Herzegovina. Retrieved from: <https://pdfslide.net/documents/the-wine-sector-in-bosnia-and-herzegovina.html>
- Hambalková, M. (2006). The factors of competitiveness and the quantification of their impact on the export efficiency of grape and wine in the Slovak Republic, *Agric. econ. – Czech*, 52(8), 389–394.
- Ivanković, M., Beljo, J., & Prusina, T. (2018). Ekonomska i društvena uloga vinogradarstva i vinarstva u Bosni i Hercegovini, 130 godina organiziranoga vinogradarstva i vinarstva u Bosni i Hercegovini. In Ivanković, M. & Ostojić, I. (Eds.): *Znanstveno stručni skup s međunarodnim sudjelovanjem "130 godina organiziranog vinogradarstva i vinarstva u Bosni i Hercegovini"*, Mostar 21./22. rujna 2018., *Zbornik radova* (pp. 374-391). Federalni agromediteranski zavod Mostar & Agronomski i prehrambeno-tehnološki fakultet Sveučilišta u Mostaru.
- Ivanković, M., Bojnec, Š., & Kolega, A. (2005). Competitiveness of wine production. The case of Bosnia and Herzegovina. *Die Bodenkultur, Austrian journal of agricultural research*, 56(4), 219-229.
- Jovanovska Boshkovska, N. (2018). Comparative advantages of wine in function of territorial marketing strategy. *Journal of Contemporary Economic and Business*, 5(2), 5-18.
- Katunar, J., Vretenar, N., & Kastelan Mrak, M. (2020). Competitiveness of Wine Sector in EU Countries. In Barković, D., Dernoscheg, K.H., Glavaš, A., & Glavaš, J. (Eds): *IMR 2020, Interdisciplinary Management Research XVI, Opatija, 7.-9.5.2020., Zbornik radova* (pp. 1601-1616). Josip Juraj Strossmayer University of Osijek, Faculty of Economics in Osijek.
- Levak, V. (2016). *The prerequisites for increasing the competitiveness of Croatian agriculture* (PhD thesis). Faculty of agriculture, University of Zagreb.
- Ministarstvo spoljnje trgovine i ekonomskih odnosa Bosne i Hercegovine (2020). Analiza spoljnotrgovinske razmjene Bosne i Hercegovine 2019. godine. Retrieved from: <http://www.mvteo.gov.ba/Content/Read/statistika-i-analize-vanjske-trgovine-analiza-razmjene?lang=sr>
- Miteva-Kacarski, E. (2018). Revealed comparative advantage in trade between the republic of Macedonia and CEFTA. *Economic Review – Journal of Economics and Business*, 16(1), 59-70.
- Ostojić, A., Vaško, Ž., Milošević, Ž., & Maksić, M. (2018). Komparativna analiza ponašanja potrošača prilikom kupovine vina na području Banja Luke. In Ivanković, M., & Ostojić, I. (Eds.): *Znanstveno stručni skup s međunarodnim sudjelovanjem "130 godina organiziranog vinogradarstva i vinarstva u Bosni i Hercegovini"*, Mostar 21./22. rujna 2018., *Zbornik radova* (pp. 178-190). Federalni agromediteranski zavod Mostar & Agronomski i prehrambeno-tehnološki fakultet Sveučilišta u Mostaru.

- Perović, V. (2013). Marketing strategije organizacija za proizvodnju i plasman vina u Crnoj Gori (Doktorska disertacija). Beograd: Univerzitet Singidunum.
- Stanojčić, S. (2017). *Wine Product Brief*. Sarajevo: USDA Foreign agriculture service, Global agriculture information network.
- Sudarić, T., Samardžija, L., & Lončarić, R. (2020). Viticulture and wine as export potential of Croatia. *Agriculture and Forestry, Podgorica*, 66(2), 57-66.
- Toteva, D. (2017). Challenges at competitive and sustainable development of the vine and wine sector and the production of beer in Bulgaria, *Bulgarian Journal of Agricultural Science*, 23(5), 704–711. doi: 10.4172/2223-5833.1000286
- Vlahović, B., Tomić, D., & Puškarić, A. (2011). Promene na tržištu vina u zemljama CEFTA grupacije. *Ekonomika poljoprivrede*, 58(4), 609-620.
- Zivzivadze, L., & Taktakishvili, T. (2019). Index-based Analysis of Georgian Wine Export's Competitiveness on a Global Market. *International Journal of Agricultural Economics*, 4(5), 201-206. doi:10.11648/j.ijae.20190405.12

# Спољнотрговинска размјена и тржиште вина Босне и Херцеговине

Немања Јалић<sup>1</sup>, Александар Остојић<sup>1</sup>, Марко Иванковић<sup>2</sup>

<sup>1</sup>Универзитет у Бањој Луци, Пољопривредни факултет, Република Српска, Босна и Херцеговина

<sup>2</sup>Свеучилиште у Мостару, Агронимски и прехрамбено-технолошки факултет, Босна и Херцеговина

## Сажетак

Циљ истраживања био је анализирати спољнотрговинску размјену вина (ЦТ 2204) Босне и Херцеговине и најчешћих партнера за период 2012-2019 на основу израчунатог индекса релативних предности у трговини, RTA<sub>i</sub>. У раду су кориштени подаци са сајтова intracen.org, wineinstitute.org. Размјена је регионално базирана на државе бивше Југославије (Хрватска, Србија, Сјеверна Македонија, Црна Гора, Словенија). Трговина са овим земљама чини од 60% до 95% укупне размјене. Најбитнија земља увозник вина у БиХ је Србија, а највећи партнер при извозу вина је Хрватска. Израчунати RTA индекс има вриједности од (-0.674) у 2012 години до (-0.567) у 2019. Негативне вриједности одговарају недостатку предности у размјени. Резултати истраживања показују да су вриједности увоза неколико пута веће од вриједности извоза, што значи да Босна и Херцеговина биљежи јасан дефицит у трговини вином.

*Кључне ријечи:* EMS, IMS, RTA, вино, Босна и Херцеговина

*Corresponding author:* Nemanja Jalić  
*E-mail:* nemanjajalic@gmail.com

*Received:* February 25, 2021  
*Accepted:* June 16, 2021