

Export competitiveness of milk and dairy products of the Republic of Srpska on the international market

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Abstract

The aim of this research is an analysis of the export competitiveness of the milk and dairy products of the Republic of Srpska on the international market. Indicators analysed in the paper are the net trade index (NTI) and the index of contribution to the trade balance (CTBI). Additionally, the paper investigates the type of external competitiveness of the milk and dairy products according to four criteria based on a comparison of export and import unit prices. All indicators have been calculated based on statistical data about the foreign trade of milk and dairy products and referred to the period 2015-2021. In the total export structure of the agri-food sector, milk and dairy products have significant participation in an average of 10.40%. CEFTA and EU countries as the major market destinations for milk and dairy products have recorded an average share of 20.30% and 4.81% in the total agri-food export of the Republic of Srpska. Unlike the EU countries, the analysis of the NTI showed the trade of milk and dairy products between the Republic of Srpska and the world as well as the CEFTA countries was competitive. The values calculated for the CTBI indicated positive contribution of milk and dairy products to the trade balance between the Republic of Srpska and the CEFTA countries as well as to the total trade balance. In trade with the EU these products showed comparative disadvantages. The results of the analysis based on the comparison of a unit of export and import prices indicated market segmentation of milk and dairy products into three parts: dominated price competitiveness in the world market, price and quality competitiveness in the CEFTA market, and predominantly price non-competitiveness on the EU market. The analysis of competitiveness type indicates the need for improvement of the

export structure of the dairy sector towards favouring higher value-added products, especially on the EU market.

Key words: milk and dairy products, export competitiveness, Republic of Srpska, foreign trade

Introduction

The term competitiveness is related to a market economy in which free trade is enabled between different companies as well as countries. The evolution of the competitiveness debate has oscillated around three ideas: market share, costs, and productivity (Delgado et al., 2012). Competitiveness can be studied at the macroeconomic and microeconomic levels. Although Krugman (1994) argued that the interpretation of competitiveness at the national level is a „*dangerous obsession*“, it has been and still is applied to national economies. In defining competitiveness, Porter (1990) assumes that the competitiveness of a country stems from its participation in international trade by specializing in certain products, whereby domestic firms are more competitive compared to foreign competitors, but it is also a threat because domestic firms must meet productivity standards like foreign competitors. Simultaneously, no country can be competitive in all sectors. Therefore, sectoral competitiveness at the national level is imposed as a topic in competitiveness research. Today there are new theories on the scene, which start from the fact that the focus of competitiveness source shifts from input-oriented to output-oriented evaluation (Aiginger et al., 2013). The issue of competitiveness has been addressed by theorists, from classical, neoclassical to modern economic theory, in which each school represents a certain number of economic theorists, whose systematic review was made by Siudek and Zawojcka (2014).

Tab.1 Review of definition of competitiveness according to Siudek & Zawojcka (2014).

Author(s)	Year	Definition
Scott, Lodge	1984	National competitiveness refers to a country’s ability to create, produce, distribute, and/or service products in international trade while earnings rising returns on its resources.
President’s Commission on Industrial Competitiveness	1985	The degree to which a country can, under free and fair market conditions, produce goods and services which meet the test of the international market while simultaneously maintaining and expanding the real income of its people over the long term.
Nallari, Griffith	2013	At the global level, a country is said to be competitive if it can hold or increase its share of products (exports) in the world economy.

One of the approaches in the study of competitiveness is the success of a country in foreign trade by calculating its export competitiveness. The synthesis of the calculation of various indices which measure national export competitiveness was

summed by Melišek (2012). Many authors dealt with calculation and practical measurement of competitiveness levels in different countries and different periods, including those from the countries of the region. The competitiveness of the agro-food sector of the Republic of Serbia was the subject of research by Božić and Nikolić (2013), Đukić et al. (2017), Cvetković and Petrović-Randelović (2017) Marković et al. (2019). Marković (2019) examined the competitiveness of the cereals sector in foreign trade in the Republic of Serbia. In neighbouring Croatia, Bedek and Njavro (2016) considered the competitiveness of the wine sector from a theoretical point of view, and Mesić et al. (2017) studied the impact of geographical indications on the competitiveness of traditional agri-food products. One part of these studies refer to the period before Croatia acceded to the European Union, and for that reason, the results are no longer relevant. In North Macedonia, generally, competitiveness was calculated by Kostoska and Hristoski (2018), whereas Tuna et al. (2013) examined the competitiveness of the tobacco sub-sector. In Bosnia and Herzegovina, the topic of competitiveness of the agricultural sector was covered by Muratović and Crnica (2010), calculating only one indicator. Mrdalj (2015) defined the position of the agri-food sector of the Republic of Srpska in relation to the markets of CEFTA and EU countries based on calculated indicators for analysis of comparative advantages and intra-industry trade. Also, Mrdalj et al. (2017) analyzed the structure and determinants of intra-industry trade specialization in the agri-food sector of Bosnia and Herzegovina over the transition period, comparative advantages, level of specialization in IIT, unit value export and unit value import. Based on cluster analysis the same authors identified different clusters of agri-food products, which were developed using input variables value of the RCA index, GLI, and RUV. Bajramović et al. (2016) calculated the competitiveness of the fresh fruit sector, and Prnjavorac et al. (2017) determined the competitiveness of drinking water and beer. Brkić et al. (2021) analyzed patterns and country-specific determinants of intra-industry trade in agri-food products between Bosnia and Herzegovina and the European Union during the mutual trade liberalization. Beluhova-Uzunova and Lubeniqui (2019) investigated the competitiveness of agriculture in Kosovo*¹. Matkovski et al. (2019) calculated agri-food competitiveness at the level of the southeast Europe. Jambor and Babu (2016) analyzed the level of Balasa index for agriculture at the global level in three successive periods (1991-1998; 1999-2006; 2007-2014). Determining the level competitiveness of the dairy sector was addressed by Tacken et al. (2009), Ohlan (2012), Bojenec and Ferto (2014), Jansik et al. (2014), and Simo et al. (2016).

Given the fact that the dairy sector is economically one of the most important sub-sectors of the agri-food industry of the Republic of Srpska, and

¹ Resolution SC UN 1244.

milk is considered the most subsidized product in terms of budget allocations to support production and income, the authors in this paper investigate the level of export competitiveness of these products on the international market. Precisely, this research aims to define the role of the milk and dairy products in export on the international market, based on calculated values of the net trade index (NTI), index of contribution to the trade balance (CTB), and unit prices of export and import.

Material and methods

The investigation of export competitiveness of the milk and dairy products in the Republic of Srpska on the international market referred to the period 2015-2021. The analysis of export competitiveness indicators was based on secondary resource data of the Institute of Statistics of the Republic of Srpska. Data were collected through the desk research method. According to the Harmonized System (HS) of goods classification, the agro-food sector of Bosnia and Herzegovina, including the Republic of Srpska comprises 4 sections with 24 headings (CT). This research covered the data on foreign trade of milk and dairy products, which are classified in heading 04 of the customs tariff of Bosnia and Herzegovina, i.e. tariff codes 0401 (Milk and cream, not concentrated nor containing added sugar or other sweetening matter), 0402 (Milk and cream concentrated or containing added sugar or other sweetening matter), 0403 (Buttermilk, curdled milk and cream, yogurt, kephir, and other fermented or acidified milk and cream, wheater or not concentrated or containing added sugar or other sweetening matter or flavoured or containing added fruits, nuts or cocoa), 0404 (Whey, wheater or not concentrated or containing added sugar or other sweetening matter; products consisting of natural milk constituents, wheater or not containing added sugar or other sweetening matter, not elsewhere specified or included), 0405 (Butter and other fats and oils derived from milk; dairy spreads) and 0406 (Cheese and curd).

The first approach to measure the export competitiveness of milk and dairy products was based on the calculation of the *Net export index (NTI)*. This indicator is calculated by dividing net exports into foreign trade volumes in a given sector, division, or commodity group, and according to Bozduman and Erkan, (2019); Marković et al.(2019) and Marković (2019), is formulated as follows:

$$NTI_{ijt} = \frac{X_{ij} - M_{ij}}{X_{ij} + M_{ij}}$$

NTI_{ij} – index of net trade of division *i* (dairy products), country *j*

X_{ij} – value of export of division *i* (dairy products), country *j*

M_{ij} – value of import of division *i* (dairy products), country *j*

t– year

This is a modified version of the *RCA* index (Balassa, 1965), which ensures the calculation of a country's revealed comparative advantages and export specialization with reference to other countries or group of countries. The value of the *NTI* is between -1 to $+1$, whereby negative values indicate the absence of competitiveness in the foreign market and specialization in the sector, division, or commodity group. Positive values of the *NTI* indicate that country has competitiveness in a foreign market and is specialized in a given sector, division, or commodity group. The second approach referred to the calculation of the *Contribution to the Trade Balance Index (CTBI)*. The *CTB index* measures the contribution of a particular sector or commodity group to the total trade and shows the national trade balance. According to *Melišek (2012)*, it is obtained as a difference between the real (left side of the equation) and expected (right side of the equation) trade balance of the economy. It is calculated by using the following formula (*Melišek, 2012; Bozduman and Erkan, 2019; Marković, 2019; Quansah and Ahn, 2017*):

$$CTBI = \frac{x_{ij} - m_{ij}}{X_j + M_j} - \frac{X_j - M_j}{X_j + M_j} * \frac{x_{ij} + m_{ij}}{X_j + M_j} * 100$$

CTB - index of contribution (dairy products) to the national trade balance

x_{ij} – value of export of the given commodity group i (dairy products) of country j

m_{ij} – value of import of the given commodity group i (dairy products) of country j

X_j – value of export of country j

M_j – value of import of country j

Melišek (2012) stated that the *CTB index* compares the competitiveness of sectors or commodity groups in a given economy and identifies those sectors (commodity groups) that have contributed to the development of the overall trade balance more or less depending on their share in the country's total foreign trade turnover. The *CTB index* thus measures the competitiveness of a country's foreign trade and is an adequate indicator of competitiveness even in conditions of economic imbalance. When the $CTBI > 0$, this means that the actual surplus is higher than expected or the relative trade deficit is lower than expected, and the industry or the commodity group makes a positive contribution to the overall trade balance. On the other hand, when the $CTB < 0$, means that the industry and the commodity group make a negative contribution to the total trade balance because the actual results in comparison with the expected results are negative or lower than expected. This in actual sense shows that there is a comparative disadvantage to trade (*Quansah and Ahn, 2017*). The analysis of the type of external competitiveness of the milk and dairy products of the Republic of Srpska on the international market was based on a *comparison of export and import quantities and unit of export and import prices*, according to the following four criteria (*Jefferson Institute, 2003*):

- a) $QX_{ij} > QM_{ij} \wedge PX_{ij} > PM_{ij}$ quality competitiveness
- b) $QX_{ij} > QM_{ij} \wedge PX_{ij} < PM_{ij}$ price competitiveness
- c) $QX_{ij} < QM_{ij} \wedge PX_{ij} > PM_{ij}$ price non-competitiveness
- d) $QX_{ij} < QM_{ij} \wedge PX_{ij} < PM_{ij}$ quality non-competitiveness

Price competitiveness dominates if lower prices lead to higher export quantities. Conversely, quality competitiveness is revealed if export quantities exceed import quantities despite the higher unit value of export. Depending on the above criteria, milk and dairy products (custom tariffs from 0401 to 0406) are classified into one of four groups.

Results and discussion

Results in this paper are presented in two parts. The first part is dedicated to the analysis of total foreign trade and trade in agri-food products of the Republic of Srpska on the international market. The second part of the results describes the indicators of the export competitiveness of milk and dairy products of the Republic of Srpska.

Generally, the share of foreign trade in agri-food products is considered one of the main indicators that show the importance of this sector in the development of the national economy. Following this statement, the agri-food sector of the Republic of Srpska has recorded an average share of 13.89 % in the total foreign trade turnover of the Republic of Srpska's economy. In total export, the agri-food sector of the Republic of Srpska had an average share of 8.44%, while in import an average share was higher and amounted to 17.78%. The Republic of Srpska had an unfavourable trade balance of agri-food products in trade with the World, CEFTA, and the EU during the observed period. A similar situation was recorded at the level of Bosnia and Herzegovina for the 2018-2015 period, which is confirmed in the research by Mrdalj et al. (2017), whereby import of agri-food products exceeded export compared to the World and main market destinations; the CEFTA and EU countries.

The two most important partners of the Republic of Srpska in the trade of agri-food products are the CEFTA and EU countries. An average share of the Republic of Srpska's agri-food sector in the total trade turnover on the CEFTA market was 30.62%. The period between 2015 and 2019 was marked as a period of a steadily declining share of agri-food products in the total turnover between the Republic of Srpska and the CEFTA countries. The last year of the analyzed period recorded the lowest share 24.71% of the agri-food sector in the total turnover on the CEFTA market. A similar trend was recorded by the Republic of Srpska's share in the import of agri-food products from the CEFTA countries. CEFTA's participation in the import of agri-food products on the Republic of

Srpska's market was an average of 38.66% for the observed period. On the other hand, the Republic of Srpska's export of agri-food products to the CEFTA market recorded an average share of 18.47%. After the first two years of the observed period, the share of the Republic of Srpska's agri-food sector in export was uniform until 2019. In 2020, the share of 18.01% in export of agri-food products slightly increased, whereupon in 2020 significant decline was recorded at the level of 14.30%. Data related to foreign trade in agri-food products between the Republic of Srpska and the EU countries are quite different in comparison to the CEFTA countries. The Republic of Srpska recorded a very modest trade turnover with the EU countries, which is confirmed through its average share of 9.32% in the analyzed period. Small average share of 4.23% was recorded in the export of agri-food products on the EU market. Simultaneously, the percentage of the Republic of Srpska's import of agri-food products from the EU countries was higher and amounted to an average of 14.28%. Regional analysis of the total foreign trade as well as the trade of agri-food products was the subject of the research by Mrdalj et al. (2017), and Božić and Nikolić (2013). Mrdalj et al. (2017) showed that the average share of the agri-food sector in the total country's foreign trade was 14.5%, while export was 7.9% and import 17.9% for the 2008-2015 period. On average, about 17.2% of the total country's export to the CEFTA market was related to agri-food products and 38.8% to Bosnia and Herzegovina market. Bosnia and Herzegovina recorded an average share of 10.5% in the total trade with the EU countries. Agri-food imports from the EU countries to Bosnia and Herzegovina represented an average of 4.03% of the total country's export, i.e., 14.4% of the total country's imports. Božić and Nikolić (2013) indicated in their research that in the total trade as well as in the trade of agri-food products, Serbia is regionally oriented to the CEFTA and EU countries. The CEFTA's share in Serbia's total export reached about one-third its value, while the share of imports was far modest, about 8%. Over 50% of the total country's export and import was conducted with the EU countries. For 2004-2011, the share of agri-food products in the total export was between 17.8%-23.3%, and in imports 4.32-7.94%. The CEFTA's share in Serbia's export of agri-food products was between 38-52.3% and in imports 11.3% to 24.9%. A share of Serbia's export of agri-food products in the EU market was between 40.6-55.4%, while the import share was from 40% to 47.3%.

Table 2. illustrates the total foreign trade of the Republic of Srpska, as well as the share of the –agri-food sector for the 2015-2021 period.

Tab. 2 Total foreign trade of the Republic of Srpska and its agri-food sector for the 2015-2021 period

WORLD	2015	2016	2017	2018	2019	2020	2021	Average
Export RS (mil. BAM)	2.614	2.869	3.476	3.742	3.610	3.393	4.428	3.448
Import RS (mil. BAM)	4.369	4.427	4.899	5.222	4.782	4.472	5.581	4.822
Total foreign trade turnover of RS (mil. BAM)	6.983	7.296	8.375	8.964	8.393	7.866	10.009	8.269
Trade balance (mil. BAM)	-1.755	-1.558	-1.423	-1.480	-1.172	-1.079	-1.152	-1.374
Export of RS agri-food sector (mil. BAM)	248	322	343	282	271	258	261	283
Import RS agri-food sector (mil. BAM)	807	817	881	881	869	819	905	854
Total foreign trade turnover of RS's agri-food sector (mil. BAM)	1.055	1.139	1.224	1.163	1.140	1.076	1.166	1.138
Trade balance of RS's agri-food sector (mil. BAM)	-560	-495	-539	-598	-598	-561	-644	-571
Share of the RS agri-food sector in export value (%)	9.48	11.21	9.85	7.54	7.50	7.59	5.90	8.44
Share of the agri-food sector in import value (%)	18.48	18.46	17.99	16.86	18.17	18.31	16.22	17.78
Share of RS of the agri-food sector in the total turnover trade (%)	15.11	15.61	14.61	12.97	13.58	13.69	11.65	13.89
CEFTA								
Export of RS on the CEFTA market (mil. BAM)	510	521	645	729	679	594	811	641
Import of RS from the CEFTA market (mil. BAM)	840	888	941	980	990	935	1.164	963
Total trade turnover of RS on the CEFTA market (mil. BAM)	1.350	1.409	1.586	1.709	1.669	1.529	1.975	1.604
Trade balance of the RS - CEFTA (mil. BAM)	-330	-367	-296	-251	-311	-341	-353	-321
Export of RS's agri-food sector on the CEFTA market (mil. BAM)	104	126	116	125	117	107	116	116
Import of RS's agri-food sector on the CEFTA market (mil. BAM)	380	376	379	377	355	341	372	369
Total trade turnover of RS's agri-food sector on the CEFTA market (mil. BAM)	484	502	495	502	472	448	488	484
Trade balance of RS's agri-food sector on the CEFTA market (mil. BAM)	-276	-250	-263	-252	-238	-234	-256	-253
Share of RS's agri-food sector in export on the CEFTA market (%)	20.39	24.18	17.98	17.15	17.23	18.01	14.30	18.47
Share of RS's agri-food sector in import from the CEFTA market (%)	45.24	42.34	40.28	38.47	35.86	36.47	31.96	38.66
Share of RS's agri-food sector in the total turnover on the CEFTA market (%)	35.85	35.63	31.21	29.37	28.28	29.30	24.71	30.62
EU								
Export RS in the EU (mil. BAM)	1.897	2.094	2.523	2.736	2.651	2.521	3.214	2.519
Import RS in the EU (mil. BAM)	2.115	2.237	2.441	2.647	2.760	2.594	3.227	2.574
Total trade turnover of RS on the EU market (mil. BAM)	4.012	4.331	4.964	5.383	5.411	5.115	6.441	5.094
Trade balance of RS – EU (mil. BAM)	-218	-143	82	89	-109	-73	-13	-55
RS agri-food export sector - EU (mil. BAM)	86	101	110	108	101	104	128	105
Import agri-food sector RS – EU (mil. BAM)	323	325	359	365	378	378	432	366

Total trade turnover of RS's agri-food sector on the EU market (mil. BAM)	409	426	469	473	479	482	560	471
Trade balance of RS's agri-food sector on the EU market (mil. BAM)	-237	-224	-249	-257	-277	-274	-304	-260
Share of the agri-food sector in export in the EU (%)	4.53	4.82	4.36	3.95	3.81	4.13	3.98	4.23
Share of the agri-food sector in import in the EU (%)	15.27	14.53	14.71	13.79	13.70	14.57	13.39	14.28
Share of RS's agri-food sector in total turnover on the EU market (%)	10.19	9.84	9.45	8.79	8.85	9.42	8.69	9.32

Source: Author's data based on trade data of the Institute of Statistics.

The dairy sector is considered one of the most important sectors in agriculture of the Republic of Srpska, which is also confirmed through a share of its products in total export, especially with the CEFTA countries (Table 3.). The average share of the milk and dairy products in the total export of the agri-food sector of the Republic of Srpska was 10.40%, and imports 2.64%. At the level of Bosnia and Herzegovina, Mrdalj et al. (2017) examined the structure of total export of agri-food products in the 2008-2015 period, whereby the highest share of 12.8% referred to a group of custom tariff 04. Milk and dairy products recorded a positive trade balance in the total foreign trade turnover during the observed period, with an average value of 6 million BAM. The surplus in trade with milk and dairy products can be explained through the significant budgetary support to milk production in the form of direct payments based on output and per head of cattle, as well as in the form of payments directed to the modernization of dairy farms aimed to increase their productivity and competitiveness in milk production. The second reason for the existence of a positive trade balance lies in the fact that companies and state institutions in the Republic of Srpska, Bosnia and Herzegovina have met the required legal and food safety conditions, which made possible the export of milk and dairy products on the international market (MSTEO, 2019). The CEFTA market is one of the most important for the domestic dairy sector. In the structure of total export of the Republic of Srpska's agri-food sector in the CEFTA market, milk and dairy products recorded an average share of 20.30% in the analyzed period. On the other hand, the import share of milk and dairy products in the total import of the Republic of Srpska's agri-food sector in the CEFTA market was an average of 2.39%. The year 2019 is considered a year with the highest values of total trade turnover (61 mil. BAM), i.e., export (41 mil. BAM) and import (20 mil. BAM) of milk and dairy products between the Republic of Srpska and the CEFTA countries. The Republic of Srpska recorded a surplus in the trade of milk and dairy products with the CEFTA countries.

Unlike the CEFTA market, the values of export and import of milk and dairy products between the Republic of Srpska and the EU indicate not-so-large trade flows. Starting in 2016, milk produced by dairy farms in the Republic of Srpska, Bosnia and Herzegovina for the first time entered to EU market, and in

2018 the EU issued a permission for the export of dairy products to this market. The average share of milk and dairy products in the total export of the Republic of Srpska's agri-food sector was 4.81%, while import was 2.69%. Trade exchange in milk and dairy products between the Republic of Srpska and the EU was marked by a constant deficit in the observed period.

Tab.3 Foreign trade exchange of the Republic of Srpska's dairy sector for 2015-2021.

WORLD	2015	2016	2017	2018	2019	2020	2021	Average
Export of RS's milk and dairy products (mil. BAM)	17	22	25	36	48	30	25	29
Import of RS's milk and dairy products (mil. BAM)	12	13	14	24	47	26	21	23
Total trade turnover of RS's milk and dairy products (mil. BAM)	29	36	39	60	95	56	46	52
Trade balance of RS's milk and dairy products (mil. BAM)	5	9	10	11	1	4	4	6
Share of RS's milk and dairy products in the export of agri-food sector (%)	6.89	6.94	7.16	12.71	17.73	11.72	9.66	10.40
Share of RS's milk and dairy products in the total import of the agri-food sector (%)	1.49	1.63	1.59	2.78	5.46	3.17	2.33	2.64
Share of RS's milk and dairy products in the total trade turnover of the agri-food sector (%)	2.76	3.13	3.15	5.19	8.37	5.21	3.97	4.54
CEFTA								
Export of RS's milk and dairy products on the CEFTA market (mil. BAM)	17	19	18	31	41	24	16	24
Import of RS's milk and dairy products on the CEFTA market (mil. BAM)	4	7	4	10	20	10	6	9
Total trade turnover of RS's milk and dairy products on the CEFTA market (mil. BAM)	21	25	22	41	61	34	22	32
Trade balance of RS's milk and dairy products in CEFTA market (mil. BAM)	12	12	13	22	21	13	11	15
Share of RS's milk and dairy products in the total export of the agri-food sector in the CEFTA market (%)	15.87	14.73	15.29	25.14	35.30	21.89	13.87	20.30
Share of RS's milk and dairy products in the total import of the agri-food sector in the CEFTA market (%)	1.08	1.74	1.18	2.59	5.65	2.98	1.50	2.39
Share of RS's milk and dairy products in the the total trade turnover of the agri-food sector in the CEFTA market (%)	4.26	5.01	4.48	8.19	13.01	7.51	4.45	6.70
EU								
Export of RS's milk and dairy products in the EU market (mil. BAM)	1	3	7	4	7	7	9	5
Import of RS's milk and dairy products in the EU market (mil. BAM)	9	9	7	11	11	10	13	10
Total trade turnover of RS's milk and dairy products in the EU market (mil. BAM)	9	11	14	15	18	17	22	15
Trade balance of RS's milk and dairy products on the EU market (mil. BAM)	-8	-6	-0.5	-7	-5	-3	-3	-5
Share of RS's milk and dairy products in the total export of the agri-food sector in the EU market (%)	0.64	2.88	6.03	4.04	6.52	6.45	7.11	4.81
Share of RS's milk and dairy products in the total import of the agri-food sector in the EU market (%)	2.64	2.62	1.98	3.02	2.98	2.66	2.90	2.69
Share of RS's milk and dairy products in the total trade turnover of the agri-food sector in the EU market (%)	2.22	2.68	2.93	3.25	3.73	3.47	3.86	3.16

Source: Author's data based on trade data of the Institute of Statistics.

Analyzing the structure of heading 04, it is obvious that products of custom tariff 0401 (Milk and cream, not concentrated nor containing added sugar or other sweetening matter) are the most important group in the total export and import value between the Republic of Srpska and the World, as well as with the CEFTA countries. The 0401's share in export to the world market average amounted to 47.85%, and in import 21.76%. Milk and dairy products of custom tariff 0403 (Buttermilk, curdled milk and cream, yogurt, kephir, and other fermented or acidified milk and cream, wheater or not concentrated or containing added sugar or other sweetening matter or flavoured or containing added fruits, nuts, or cocoa) had an average share of 30.08% in the total export to the world market and 7.51% in import. About 5.25% was an average share of products group of custom tariff 0402 (Milk and cream concentrated or containing added sugar, or other sweetening matter) in export to the world market and 9.53% in import. A high share of 31.26% and 9.69% in imports was found for dairy products of custom tariff 0406 (Cheese and curd) and 0404 (Whey, wheater or not concentrated or containing added sugar, or other sweetening matter; products consisting of natural milk constituents, wheater or not containing added sugar, or other sweetening matter, not elsewhere specified or included). A similar structure was in the export and import of milk and dairy products between the Republic of Srpska and the CEFTA countries. In the structure of export, the most dominant were the products group of custom tariff 0401 and 0403 with average shares of 50.24% and 26.10%. The same products group recorded a high share in imports, on an average of 32.30% and 15.10%. An average of 13.04% and 5.51% was the import share of cheese and curd, and butter and other fats, and oils derived from milk; dairy spreads. A common feature of milk and dairy products in the foreign trade between the Republic of Srpska and the EU is their very small share in export and import (Table 4).

Tab. 4 Structure of milk and dairy products in export and import of heading 04 between the Republic of Srpska and World / CEFTA / EU for 2015-2021.

WORLD	0401 ¹		0402 ²		0403 ³		0404 ⁴		0405 ⁵		0406 ⁶	
	X	M	X	M	X	M	X	M	X	M	X	M
2015	49.32	9.28	14.45	12.12	16.99	4.96	0.00	27.99	0.55	3.14	0.77	9.28
2016	50.10	10.99	16.28	28.49	15.08	7.35	0.01	4.05	0.56	2.41	1.29	31.61
2017	59.90	14.60	2.48	1.89	20.49	12.27	0.03	5.12	1.91	1.96	1.60	43.27
2018	42.55	25.36	0.59	11.60	46.04	6.84	0.02	4.56	0.56	1.40	1.32	35.55
2019	47.03	52.18	0.36	4.66	42.51	3.91	0.01	3.59	0.30	1.85	0.83	26.56
2020	46.62	28.53	1.47	5.52	32.85	6.86	0.03	11.27	0.93	2.88	1.53	32.03
2021	39.45	11.34	1.10	2.45	36.59	10.40	0.06	11.23	0.93	5.00	2.14	40.50
Average	47.85	21.76	5.25	9.53	30.08	7.51	0.02	9.69	0.77	2.66	1.35	31.26
CEFTA	0401		0402		0403		0404		0405		0406	
	X	M	X	M	X	M	X	M	X	M	X	M
2015	50.62	16.69	14.74	0.26	15.30	11.31	0.00	0.00	0.55	7.14	0.53	8.16
2016	59.14	12.31	16.76	0.47	9.32	12.37	0.01	0.00	0.57	4.05	0.57	4.05
2017	59.53	21.22	1.47	0.00	16.61	32.18	0.04	0.00	2.38	5.15	1.27	19.59
2018	44.54	43.82	0.00	0.21	43.96	11.79	0.02	0.001	0.54	2.96	1.12	13.45
2019	47.33	75.91	0.18	0.06	42.12	4.38	0.01	0.001	0.22	2.35	0.49	6.82
2020	48.96	47.54	1.82	0.08	27.83	9.86	0.01	0.002	0.53	4.73	1.26	13.46
2021	41.56	8.63	1.56	0.01	27.55	23.80	0.02	0.001	0.83	12.19	1.55	25.76
Average	50.24	32.30	5.22	0.16	26.10	15.10	0.02	0.001	0.80	5.51	0.97	13.04

EU	0401		0402		0403		0404		0405		0406	
	X	M	X	M	X	M	X	M	X	M	X	M
2015	0.03	0.08	0.03	0.005	0.51	0.00	0.00	1.16	0.00	0.00	0.06	0.93
2016	0.50	0.16	0.23	0.01	1.96	0.00	0.00	0.17	0.02	0.00	0.17	1.10
2017	3.69	0.27	0.16	0.00	2.00	0.00	0.00	0.21	0.02	0.00	0.16	1.49
2018	1.17	0.28	0.09	0.01	2.63	0.08	0.00	0.28	0.03	0.00	0.12	1.77
2019	3.07	0.31	0.05	0.003	3.07	0.10	0.00	0.31	0.06	0.03	0.26	1.89
2020	2.53	0.16	0.002	0.003	3.66	0.09	0.01	0.67	0.06	0.02	0.18	1.47
2021	2.52	0.44	0.00	0.00	4.24	0.12	0.01	0.59	0.08	0.04	0.26	1.68
Average	1.93	0.24	0.08	0.00	2.58	0.05	0.00	0.49	0.04	0.01	0.17	1.48

Reference:

¹ 0401 - Milk and cream, not concentrated nor containing added sugar, or other sweetening matter

² 0402 - Milk and cream concentrated or containing added sugar, or other sweetening matter

³ 0403 - Buttermilk, curdled milk and cream, yogurt, kephir, and other fermented or acidified milk and cream, wheater or not concentrated or containing added sugar or other sweetening matter or flavoured or containing added fruits, nuts, or cocoa

⁴ 0404 - Whey, wheater or not concentrated or containing added sugar or other sweetening matter; products consisting of natural milk constituents, wheater or not containing added sugar, or other sweetening matter, not elsewhere specified or included

⁵ 0405 - Butter and other fats and oils derived from milk; dairy spreads

⁶ 0406 - Cheese and curd

Source: Author's calculation based on trade data of the Institute of Statistics.

The following Table 5. shows indicators of export competitiveness, as well as the type of external competitiveness. The first approach referred to the calculation of the net trade index of milk and dairy products in the World, CEFTA, and EU markets. The calculated values of the NTI showed that milk and dairy products were competitive in export to the World and CEFTA market. Negative values of the NTI indicated comparative disadvantages, which were pronounced in 2015 (- 0.88) and 2016 (- 0.49). Positive values of the NTI of milk and dairy products in the total foreign trade with the World and CEFTA are due to the fact there is net export. On the other hand, negative values of the NTI of milk and dairy products in the total foreign trade with the EU were induced by the fact that imports exceeded the export of these products. Marković et al. (2019) found similar results in the calculation of the NTI of Serbia's agri-food sector with the EU and the World. The authors stated that dairy products and birds' eggs division achieved positive net export in the World market (NTI = 0.21), compared to unfavourable export competitiveness in the EU market (NTI = - 0.59). Analyzing the second indicator of export competitiveness, it can be seen that milk and dairy products made a positive contribution to the trade balance with the World and CEFTA countries. Alternatively, this means that the Republic of Srpska had competitiveness in the export of milk and dairy products in relation to the World and CEFTA countries. Negative values or very low values of the CTBI for milk and dairy products indicated negative contribution to the trade balance with the EU countries. Finally, the third indicator represents the type of external competitiveness, by comparing export and import prices with the quantity of export and import of milk and dairy products in the World, CEFTA, and EU markets. Milk and dairy products are competitive in terms of price in the World market. Two different types of external competitiveness recorded milk and dairy products in the CEFTA market, i.e., with prices (2015; 2016; 2017;

2021) and quality (2018; 2019; 2020). The deficit in trade and low unit export prices indicated predominately quality non-competitiveness of milk and dairy products in the EU market during the observed period. Marković et al. (2019) determined the type of quality non-competitiveness for dairy products and birds' eggs division of Serbia's agri-food sector in the EU market too.

Tab 5. NTI, CTBI, and type of external competitiveness of milk and dairy products in trade with the World, CEFTA, and EU for 2015-2021.

Years	WORLD			CEFTA			EU		
	NTI	CTBI	Type of external competitiveness	NTI	CTBI	Type of external competitiveness	NTI	CTBI	Type of external competitiveness
2015	0.22	0.11	Price competitiveness	0.60	0.39	Price competitiveness	-	0.01	Quality non-competitiveness
2016	0.31	0.10	Price competitiveness	0.48	0.48	Price competitiveness	-	0.01	Quality non-competitiveness
2017	0.35	0.08	Price competitiveness	0.60	0.27	Price competitiveness	-	-	Quality non-competitiveness
2018	0.31	0.11	Price competitiveness	0.53	0.38	Quality competitiveness	-	-0.01	Quality non-competitiveness
2019	0.22	0.16	Price competitiveness	0.35	0.73	Quality competitiveness	-	0.01	Quality non-competitiveness
2020	0.21	0.10	Price competitiveness	0.40	0.51	Quality competitiveness	-	0.01	Quality non-competitiveness
2021	0.15	0.05	Price competitiveness	0.49	0.20	Price competitiveness	-	0.001	Quality non-competitiveness

Source: Author's calculation based on trade data of the Institute of Statistics.

Conclusion

The dairy sector is considered one of the main pillars of agricultural and rural development in the Republic of Srpska. Change of conditions in the trade with milk and dairy products, i.e., the fulfilment of legal and food safety conditions by companies and authorities in the Republic of Srpska, Bosnia and Herzegovina significantly affected the foreign trade in this commodity group. The aim of this research was to determine the export competitiveness of milk and dairy products of the Republic of Srpska in the international market. The results of the analysis indicated that milk and dairy products had a significant average share of 10.40% in total export of the agri-food sector. The participation of milk and dairy products was 20.30% in the total export of the agri-food sector of the Republic of Srpska in the CEFTA market, while the EU market recorded a very modest share of 4.81%. Milk and dairy products showed competitiveness in the World and CEFTA market with positive values of the NTI. However, a lack of competitiveness in milk and dairy products was recorded in trade with the EU countries. Trade of milk and dairy products with the World and CEFTA countries assumed comparative advantages, i.e., values of the CTBI indicated that this commodity group made a positive contribution to the trade balance. Regarding

the EU market, very low or negative values of the CTBI have been observed, which means there were comparative disadvantages in the trade of milk and dairy products. The analysis of the type of external competitiveness showed, that the milk and dairy sector in the World and CEFTA market mostly competed with prices. In the 2018-2020 period, export quantity exceeded import quantity, and high unit price of exports than the unit price of imports implied the quality competitiveness of milk and dairy in trade with the CEFTA countries. Constant deficit in trade, i.e., low import quantity and low level of the unit price of imports indicated the failed quality competition of Republic Srpska's milk and dairy products in the EU market. The analysis of export competitiveness indicates the need for improvement of the export structure of the dairy sector in direction of favouring higher value-added products, especially in the EU market.

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Извозна конкурентност млијека и млијечних производа Републике Српске на међународном тржишту

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Сажетак

Циљ овог истраживања је анализа извозне конкурентности млијека и млијечних производа Републике Српске на међународном тржишту. Индикатори анализирани у раду су индекс нето извоза (NTI) и индекс доприноса трговинском билансу (СТВИ). Поред тога, у раду је истражен тип извозне конкурентности млијека и млијечних производа према четири критерија на бази поређења јединичних цијена извоза и увоза. Сви показатељи су израчунати на бази статистичких података о спољној трговини у млијеку и млијечним производима и односе се на период 2015 - 2021. У структури укупног извоза пољопривредно-прехрамбеног сектора, млијеко и млијечни производи имају значајно просјечно учешће од 10,40%. Земље СЕФТА и ЕУ као главне тржишне дестинације за млијеко и млијечне производе билежале су просјечно учешће од 20,30% и 4,81% у укупном извозу агроиндустрије Републике Српске. За разлику од земаља ЕУ, анализа NTI је показала постојање конкурентности у трговини млијека и млијечних производа између Републике Српске и свијета, као и земаља СЕФТА-е. Израчунате вриједности СТВИ указале су на позитиван допринос млијека и млијечних производа трговинском билансу између Републике Српске и земаља СЕФТА-е, као и укупном трговинском билансу. У трговини са ЕУ млијеко и млијечни производи су показали компаративне недостатке. Резултати анализе базиране на поређењу јединичних цијена извоза и увоза показали су сегментацију тржишта млијека и млијечних производа на три дијела: доминантну цјеновну конкурентност на свјетском тржишту, цјеновну конкурентност и конкурентност квалитетом на тржишту СЕФТА-е и претежно цјеновну неконкурентност на тржишту ЕУ. Анализа типа извозне конкурентности указује на потребу унпоређења структуре извоза сектора млијека у правцу фаворизовања производа веће додате вриједности посебно на тржишту ЕУ.

Кључне ријечи: млијеко и млијечни производи, извозна конкурентност, Република Српска, спољна трговина

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