

TRENDS OF TRADE INDICATORS OF POTATOES IN BOSNIA AND HERZEGOVINA

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Abstract

In the paper, the movement of foreign trade indicators of potatoes in Bosnia and Herzegovina was analyzed using a quantitative research method, and thus an attempt was made to determine possible changes that occurred in the analyzed ten-year period, and to predict their movement in the future. The results showed that Bosnia and Herzegovina had a negative foreign trade balance when it comes to this vegetable, which is 16,150 tons. Imports, both in terms of quantity and price, have a slight tendency to increase in the coming period, while exports have a recorded tendency to decrease when it comes to quantities, and a slight upward trend in prices. Relatively unstable movements can be observed for both indicators in the observed ten-year period. According to the established linear trend, the quantitative import and export of potatoes will remain below the achieved ten-year average in the following period, while the price and foreign trade parameters are above it. On average, in the analyzed period, the largest import of potatoes was from the Netherlands, while the largest export was to Croatia.

Key words: *Potatoes, trends, import, export, Bosnia and Herzegovina*

Introduction

Given its nutritional importance, potatoes are today the main vegetable species in many countries. Potatoes are of great economic importance in less developed countries as well as in economically developed countries. (Puškarić, 2007) According to Vlahović (2003), 85 different industries use potatoes as a raw material from which more than a thousand products are obtained.

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In Bosnia and Herzegovina, potatoes are one of the most common vegetables, both in terms of sown areas and produced quantities. Namely, the sown areas of these vegetables last year were 33,560 ha, while the produced quantity was at the level of 339,727 tons. Such produced quantity ranks them in the first place in terms of production, behind which are the production of other vegetable crops such as cabbage (68,927 tons), tomatoes (52,892 tons), peppers (41,230 tons), etc. (BiH Statistics Agency, 2021). According to FAOSTAT data, the largest areas under potatoes are in Asia, almost half (49.7%), and the country that produced the most of this vegetable in 2020 was China with a production of 78,183,874 tons. It was immediately followed by countries such as India (51,300,000 tons), Ukraine (20,837,990 tons) and others.

The author's earlier research focused on the quantitative analysis of vegetable production itself (Mutavdžić, 2010; Novković et al., 2010; Lazić, 2014; Ivanišević, 2015; Ubiparip et al., 2016; Tarnowska and Kowalska, 2018; Ivanišević et al., 2018; Mihajlović, 2019). In their research, Hossain and Abdulla (2016) forecast the production of potatoes in Bangladesh until 2023, while Nedeljković and Vujić (2020) forecast the production, area and yield of potatoes in Bosnia and Herzegovina.

As stated by Nedeljković (2022), it is necessary to support the development of vegetable production, as an intensive branch of agriculture, and to somewhat reduce the extensiveness and current dominance of cereals in domestic production, considering the constant increase in demand for food on the world market.

Accordingly, Bijelić (2011) believes that financial instruments for the promotion of foreign trade include all forms of financial support of a country to its exporters in order to increase exports and increase sales abroad.

Taking into account the above, the subject of the work would be the analysis of the movement of foreign trade parameters of potatoes in Bosnia and Herzegovina with the aim of creating an adequate forecasting model of the mentioned indicators, which would also determine any changes that occurred in the analyzed period. Thus, the results of the research could be used for the purpose of making some of the strategic decisions that would concern this vegetable production.

Method and data sources

For data sources, we used the statistical database of the International Trade Center (ITC) as well as data from the BiH Agency for Statistics and the Food and Agriculture Organization (FAOSTAT). The period of analyzed foreign trade parameters of potatoes was from 2012 to 2021, and for this purpose we used the standard instrument of descriptive statistics (average, interval of variation, rate of change, coefficient of variation). Predictions (tendencies) are shown through the calculated rate of change, as well as by applying the appropriate trend line. The obtained results are presented tabularly and graphically.

Results

In the analyzed ten-year period, the average imported amount was almost 19,413 tons, while the exported amount was at the level of over 3,262 tons, which is only 16.80% of the imported amount of potatoes. The maximum import of 29,292 tons was achieved in 2015, while the maximum export was in 2017. Quantitatively, both import and export had a relatively unstable trend in the analyzed period expressed by the coefficient of variation, with the imported quantities of potatoes having a slight, so to speak insignificant tendency to increase, while the exported quantities of these vegetables show a slight tendency to decrease. (table 1)

Also, the following table 1 shows the movement of prices in the observed period. Namely, the average import price of potatoes was slightly higher than 339 euros/t, and the export price was 298 euros/t. Import and export prices reached their maximum in 2019. In contrast to the quantity, the price of potatoes for both imports and exports shows a slight tendency to increase as measured by the rate of change. The prices of foreign trade parameters of potatoes had a relatively unstable movement, which was particularly pronounced in the case of exports ($cv=24.65\%$).

Table 1. Dynamics of foreign trade parameters of potatoes in BiH (2012-2021)

Parameters	Import		Export	
	Quantities (t)	Price (evro/t)	Quantities (t)	Price (evro/t)
Average (t)	19.412,900	339,300	3.262,700	298,800
Minimum (t)	13.566,000	246,000	2.066,000	153,000
Maksimum (t)	29.292,000	449,000	4.571,000	405,000
Coefficient of variation cv (%)	23,15	16,05	23,46	24,65
Rate of change r (%)	0,26	0,91	-2,60	1,75

Source: author's calculation based on ITC data

The quantitative deficit of foreign trade indicators is visually shown in the following graph 1. The average value of the foreign trade deficit in the analyzed period was 16,150.20 tons, and it reached its highest value in 2015, while the lowest was in 2017. The reason for such movement is certainly the amount of import and export of these vegetables in those years in Bosnia and Herzegovina.

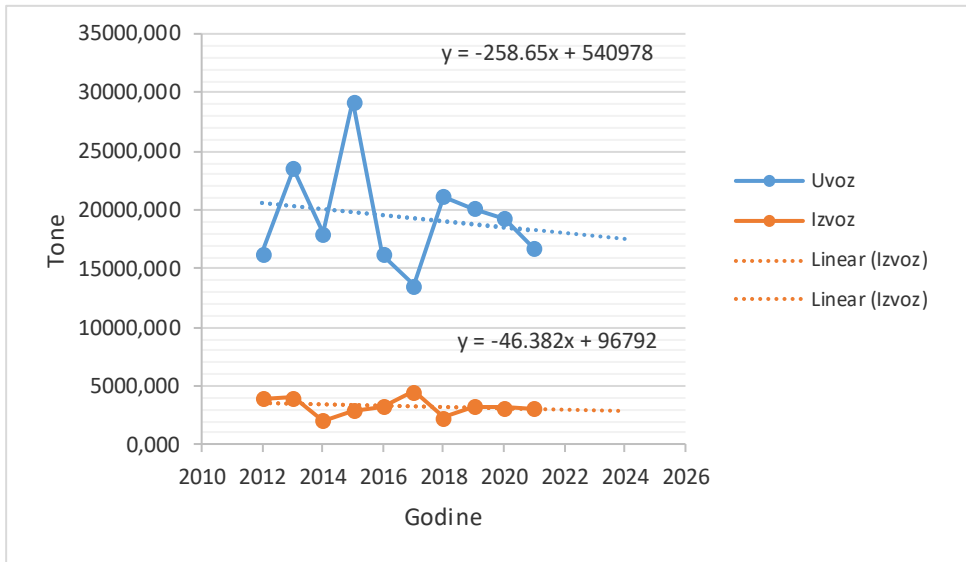
Graph 1. Movement of foreign trade deficit of potatoes in BiH (2012-2021)



Source: Calculation of the author based on the data

In the following graph 2, we can see the trends of import and export of potatoes in the future period, which according to the obtained linear trend formula show us that in the next year, the import of potatoes in BiH would be at the level of 17,987.70 tons, and the export at the level of 3007,596 tons. This shows that the export of this vegetable from BiH would still be below its average level for the analyzed ten-year period.

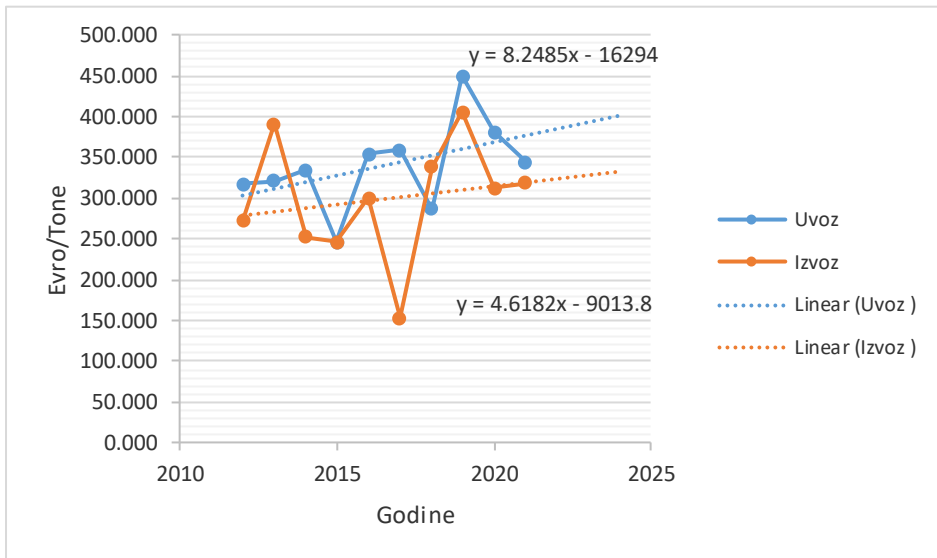
Graph 2. *Trend and forecast of import and export of potatoes in Bosnia and Herzegovina (T).*



Source: Calculation of the author based on the data

The following graph 3 gives a visual representation of the movement and price forecast of foreign trade indicators of potatoes in Bosnia and Herzegovina. The trend line shows price growth in the future period, both for imports and exports. According to the linear trend formula, we can expect the import price of potatoes in BiH in the next year to be at the level of 384.46 euros/ton, while the export price would be 324.20 euros/ton. It certainly exceeds the average prices in the observed period.

Graph 3. Trend and forecast of import and export of potatoes in Bosnia and Herzegovina (Euro/t)



Source: Calculation of the author based on the data

From the data in the following table 2, we see that the largest import of potatoes for the analyzed period of BiH is from the Netherlands, in the amount of 7,507.8 tons, which in the total structure of imports would amount to more than one third of the entire import. It is immediately followed by Germany, as well as countries such as Egypt and Belgium, where this import is significantly lower compared to the first two mentioned countries. As for the export of potatoes, it dominates neighboring Croatia with a share in the export structure of 34.61%, i.e. 1,129.3 tons. It is followed by Montenegro and Norway.

Table 2. Structure of import and export of potatoes in BiH (2012-2021)

No.	Country	Average value (t)	Share structure (%)
IMPORT			
1	Netherlands	7.507,80	38,67
2	Germany	3.448,30	17,76
3	Egypt	1.352,90	6,97
4	Belgium	863,90	4,45
5	Denmark	358,30	1,85

No.	Country	Average value (t)	Share structure (%)
EXPORT			
1	Croatia	1.129,30	34,61
2	Montenegro	932,90	28,59
3	Norveška	396,50	12,15

Source: Calculation of the author based on the data

Conclusion

On the basis of what was previously stated in the paper, we can conclude the following:

Potatoes are among the most common vegetables in Bosnia and Herzegovina, with a production of about 340,000 tons. In addition, Bosnia and Herzegovina is an import-dependent country when it comes to this type of vegetable.

On average, in the previous ten-year period, 3,262,700 tons were exported at a price of 298.8 euros/t, and 19,412,900 tons were imported at a price of 339.3 euros/t, which resulted in an average deficit of 16,150 tons.

In the coming period, a slight growth trend in potato imports is expected, when it comes to both the quantity and realized price, while a quantitative decline in imports and a very modest price growth trend is expected.

The country from which the most potatoes were imported into BiH was the Netherlands, while the country to which the most potatoes were exported was Montenegro.

Research can be useful in making rational strategic decisions at the state level when it comes to this part of vegetable production, which would concern the improvement of its foreign trade position.

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