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Agri-food import dependency and certain determinants in the context of the EU integration processes: Evidence from Bosnia and Herzegovina, North Macedonia and Croatia

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Abstract

The agricultural sector is a cornerstone of economic and social development in Bosnia and Herzegovina, North Macedonia and Croatia, which are at different stages of EU integration: Croatia has been a member since 2013, North Macedonia began accession negotiations in 2022 and Bosnia and Herzegovina has not yet started the negotiations. Despite these differences, all face significant challenges, including small-scale rural holdings, land fragmentation, high migration, inadequate infrastructure and climate change impacts. These factors contribute to low productivity and sustainability, leading to increased agri-food imports. This study examines the dynamics of import dependency in the agri-food sectors of these countries and their relation to certain agroeconomic indicators. Secondary data from the national statistical offices, FAOSTAT and the World Bank from 2010 to 2023 are used for the examination. The analysis employs descriptive statistics, trend analysis, Independent Samples T-Test and Person correlation coefficient, to evaluate the Import Dependency Ratio (IDR) and its relationship with key indicators: Gross Value Added (GVA), agricultural land area and rural/urban population share. Results show that Bosnia and Herzegovina has the highest IDR (mean 38.79%) with low variability, North Macedonia has the lowest but most volatile IDR (mean 15.71%, CV = 41.27%) and Croatia exhibits a moderate IDR (mean 31.93%) with notable increases post-EU accession. Trend analysis reveals a rising IDR in all countries. The T-Test confirms a statistically significant increase in Croatia's IDR after joining the EU ($p = 0.020$). The correlation analysis revealed a negative correlation between IDR and the share of the rural population in all three countries, while its relationship with Agricultural land and GVA varies. In conclusion, the findings highlight growing agricultural import dependency, particularly in the post-EU accession period. Strengthening domestic production and enhancing policy measures are essential to improve self-sufficiency and ensure sustainable rural development in the examined countries.

Key words: import dependency ratio, agri-food sector, gross value added, agricultural land, rural/urban population

INTRODUCTION

The agricultural sector remains a cornerstone of economic and social development in Bosnia and Herzegovina, North Macedonia and Croatia, which are at different stages of the European Union (EU) integration. Croatia has been an EU member since 2013, North Macedonia opened accession negotiations in 2022, while Bosnia and Herzegovina have not yet commenced formal negotiations. Over the past decade, agriculture accounted for an average 7.18% in Bosnia and Herzegovina, 9.96% of GVA

in North Macedonia (SSO, 2024) (WB StatDatabases, 2024) and approximately 4% in Croatia during the same period (World Bank Group, 2021). Similarly, the share of agricultural employment reflects these differences, with 11.5% of the workforce engaged in agriculture in North Macedonia, 9.4% in Bosnia and Herzegovina and 7.3% in Croatia (World Bank Group, 2021).

Despite these differences, all three countries face significant challenges, that hinder the productivity and sustainability of the agri-food sector. Predominantly small-scale and fragmented land holdings, inefficiencies in agricultural value chains and unfavourable age and education structure of the labour force, influence the sector's low productivity and sustainability (Kotevska et al., 2024). The sector's vulnerability is further exacerbated by external shocks, particularly those related to climate change. At the same time, ensuring food security remains a priority. This is due to the high variability in food supply, substantial dependence on food imports (especially cereals) and comparatively lower Gross Domestic Product (GDP) per capita relative to more advanced EU economies (Cukaliev et al., 2022).

In the context of trade liberalization, as part of their EU integration efforts, significant progress has been made by signing trade agreements with EU countries, within the Stabilization and Association Agreements (SAA) and signing a regional CEFTA agreement and other bilateral agreements. However, the export performance of all WB countries remains considerably weaker compared to EU member states (Matkovski, 2016).

During the transition process, the initial reforms in Bosnia and Herzegovina and North Macedonia, as well as other WB countries, focused on foreign trade policy and the initiation of negotiations with the World Trade Organization (WTO) (Mrdalj et al., 2024). These early steps were critical in aligning their trade frameworks with international standards and laying the groundwork for further economic integration. Bosnia and Herzegovina finished the negotiations with the WTO, still without a membership status in this global trade organization, while North Macedonia has been a signatory to an agreement with the WTO since April 2003, further underlining its dedication to international trade standards and practices. For both countries, the negotiations with the WTO presented an important prerequisite for accessing the Central European Free Trade Agreement (CEFTA) and Stabilization and Association Agreement (SAA) with the EU (*ibid*). The Central European Free Trade Agreement (CEFTA) has been a key focus of foreign trade policy for Southeast European countries in recent decades. Comprising Albania, Bosnia and Herzegovina, Kosovo*, Moldova, Montenegro, North Macedonia and Serbia, CEFTA aims to promote trade and economic cooperation by reducing tariffs and trade barriers. It also seeks to harmonize regulatory frameworks with EU and international standards, serving as a foundation for future EU accession (*ibid*).

The process of European integration, particularly the alignment with international markets, has significantly reshaped the agri-food sectors of the analyzed countries. As part of the Western Balkans (WB), Bosnia and Herzegovina and North Macedonia have been actively reforming their economic systems over an extended period to comply with European Union (EU) regulations and standards (Matkovski et al., 2019). As these countries continue their efforts toward economic modernization and EU accession, addressing persistent agricultural challenges, such as productivity gaps, structural inefficiencies and sustainability issues, while promoting inclusive economic growth, is crucial for ensuring long-term stability and development (Kotevska et al., 2024). The strategic priority of Bosnia and Herzegovina and North Macedonia is full EU membership, which entails a functional economy, functional markets, price liberalization, macroeconomic stability, and the developed capacity to withstand competitive pressure and market forces within the EU. The EU approximation is a long-term process of legislative harmonization and establishment of appropriate administrative setup, especially in the area of formulation, analysis, implementation and control of the agricultural policy (Stojcheska et al., 2022). In general, within the Western Balkan countries, the export performance of the agricultural sector is largely dependent on its production capacity, which is strongly influenced by agro-ecological conditions (Matkovski, 2016). The relatively extensive nature of agricultural production in these countries, combined with the weaknesses of the processing industry, continues to limit their competitiveness in international markets (Matkovski, 2021). The main challenges stem from persistent issues in rural areas, which are particularly affected by slow productivity growth, high unemployment, continued out-migration, limited access to productive assets, fragmented land holdings, weak organization of value chains and insufficient modernization. Furthermore, significant gaps remain in the transfer of knowledge, innovation and technology necessary to support the sector's advancement (Erjavec et al., 2021; Kotevska & Martinovska Stojcheska, 2015; Todorović et al., 2020).

Pre-accession countries, in essence, have the same main goal as the EU agricultural policy, aiming at providing enough food for all EU residents at affordable prices, while ensuring an adequate income for agricultural producers. In the area of rural development, key goals are ensuring the development of rural areas, as well as providing conditions for modernization and increasing food production. These policies are implemented through the Common Agricultural Policy of the European Union (Stojcheska et al., 2024). The CAP includes a complex system of common rules and measures for income support, regulation of agri-food markets and rural development. The implementation of the CAP implies strong management and control systems. The capacity of each country to achieve the EC settled benchmarks is strongly related to its capacity to support agriculture at the current time (Stojcheska et al., 2022).

During the pre-accession period and following Croatia's accession to the EU, significant changes in agricultural markets were recorded as a result of changes in the economic environment (Franic & Ljubaj, 2015). Croatia's trade with the EU has been gradually liberalized through the Stabilisation and Association Agreement (SAA), which entered into force in 2005. Before accession, Croatia already benefited from duty-free access to the EU for most of its agricultural exports (with some exceptions, notably for sugar, beef and wine). As the SAA was an asymmetrical trade agreement, EU agricultural exports to Croatia faced border protection that has been removed as of the date of accession (Boulanger, et al., 2013). By joining the European Union in 2013, Croatia became part of the EU Single Market, which guarantees the free movement of goods, services, capital and labor. This policy change eliminated customs duties and non-tariff barriers on agricultural trade between Croatia and other EU member states. As a result, imports of agricultural products increased significantly, because producers from larger and more competitive EU economies gained unrestricted access to the Croatian market. Croatia's access to the Common Agricultural Policy (CAP) provided subsidies and rural development funds, but administrative barriers and delays hindered the effective use of these funds, particularly for smaller farms. Meanwhile, trade liberalization under the EU framework increased import competition faster than Croatia's domestic agricultural sector could adapt and modernize. As part of the EU, Croatia became a party to numerous EU free trade agreements with countries outside Europe (e.g., Canada via CETA, Japan via EPA). These agreements expanded the variety of agricultural imports, providing cheaper alternatives to domestic products and contributing to a higher import dependency (Boulanger, 2013).

Full EU membership, as evidenced by the case of Croatia, has a dual impact on agricultural competitiveness. On one hand, EU membership provides access to substantial support for agriculture and rural development, improving the sector's financial and technical capacities. On the other hand, membership exposes domestic producers to significantly greater competitive pressure within the common EU market (Matkovski, 2021).

Given the same historical foundations in agricultural development and the similar pathways in all three countries, Bosnia and Herzegovina, North Macedonia and Croatia, followed during the EU accession processes, primarily through trade liberalization, legislative harmonization and efforts to enhance agricultural competitiveness, this study aims to analyze import dependency as it reflects the degree of self-sufficiency and resilience of the agricultural sector. It further examines how these trends are connected to key macroeconomic indicators in agriculture. Despite the relevance of this topic, no similar analysis focusing on agricultural import dependency and its relation to macroeconomic determinants in Bosnia and Herzegovina, North Macedonia and Croatia has been identified in the existing literature, ensuring that this research provides new insights into the import dependency dynamics of their agricultural sectors.

MATERIAL AND METHODS

Data sources

The analysis of the agricultural indicators in this study is based on secondary data sources, including official national statistical databases such as the Agency for Statistics of Bosnia and Herzegovina, the Croatian Bureau of Statistics (PC-Axis databases) and the State Statistical Office of the Republic of North Macedonia (MAKstat database). International sources were used such as the Food and Agriculture Organization - FAO (FAOSTAT database) and the WB StataDatabases (2024). The study focuses on three countries: Bosnia and Herzegovina, North Macedonia and Croatia. The dataset covers the period from 2010 to 2023 and utilizes time series data relevant to the agricultural and food sectors of the selected

countries. For a more comprehensive data analysis, the collected data were organized and processed using SPSS statistical software.

Methods of analysis

In line with the objectives of this study, several methodological tools were employed. Descriptive statistical methods were applied to summarize and describe the basic features of the agricultural determinants in all three selected countries. To calculate the Import Dependency Ratio (IDR), a standard methodology was used that considers both the value of domestic agricultural production and international trade flows. IDR indicates the extent to which a country's supply of commodities comes from imports. A high ratio reflects a greater dependence on imported goods. The computation of the IDR follows the guidelines provided by the FAO (2012):

$$IDR = \frac{import}{production + import - export} * 100$$

To identify the direction and strength of changes in IDR in the countries over time, trend analysis was applied to the time series data from 2010 to 2023. A linear trend equation was used:

$$IDR = \alpha + \beta * year$$

If the coefficient $\beta>0$, the dependency is increasing over time, while $\beta<0$, the dependency is decreasing.

An independent samples t-test was conducted by using SPSS software to compare the IDR of Croatia before EU accession (2010—2013) and after EU accession (2014-2023). The purpose was to assess whether EU membership had a significant impact on the country's import dependency in agriculture.

The correlation analysis, using Pearson correlation coefficients (Mead et al., 1993), was conducted separately for each of the three observed countries. The aim was to evaluate the relationships among examined variables: Import Dependency Ratio (IDR), agricultural land, Gross Value Added (GVA) and Share of Rural/Urban population. The equation for the calculation of Pearson correlation coefficients is:

$$r = \frac{n\Sigma xy - \Sigma x\Sigma y}{\sqrt{n\Sigma x^2 - (\Sigma x)^2} * \sqrt{n\Sigma y^2 - (\Sigma y)^2}}$$

r – Pearson coefficient
x – values of the x-variable
y – values of the y-variable
n – number of observations

Values of r range from -1 for a perfectly inverse, or negative, relationship to 1 for a perfectly positive correlation. Values close to zero indicate no linear relationship or a very weak correlation (Cohen et al., 2003).

RESULTS AND DISCUSSION

The results from the descriptive analysis for 2010 – 2023, represented in Table 1 show differences in agricultural indicators across the three countries.

Gross Value Added (GVA) in agriculture is highest in Croatia, with an average of 1,165.64 mill. EUR, but it exhibits higher variability (CV = 21.34%) compared to Bosnia and Herzegovina (977.50 mill. EUR) and North Macedonia (854.04 mill. EUR). This reflects Croatia's larger and more dynamic agricultural sector.

Gross Production Value (GPV) varies considerably. Croatia leads with an average 2,453 mill. EUR , but shows extremely high variability (CV = 87.64%), suggesting fluctuations in production value over the years. Bosnia and Herzegovina and North Macedonia have lower GPV values and less fluctuation.

Regarding agricultural land, Bosnia and Herzegovina has the largest area (2,2 mill. hectares), followed by Croatia (1,5 mill. ha) and North Macedonia (1,2 mill. ha). The coefficient of variation is lowest in Bosnia and Herzegovina, indicating more consistent land use.

Bosnia and Herzegovina shows the highest rural/urban population ratio, with a mean of 109.36%, while North Macedonia and Croatia have lower shares, at 72.79% and 76.64%, respectively. The variability expressed by the Coefficient of Variation (CV) is the lowest for North Macedonia, suggesting more stability in its rural/urban share over time.

In regard to trade performances, Croatia dominates in agri-food exports and imports. Its export average is 1,979.45 mill. EUR, much higher than Bosnia and Herzegovina (406.86 mill. EUR) and North Macedonia (551.21 mill. EUR). Imports show a similar trend, with Croatia importing an average of 3,002.65 mill. EUR in agri-food products. Variability in trade indicators is generally higher in Croatia, reflecting greater market dynamics.

All three countries experience negative trade balances in agri-food products. North Macedonia has the smallest deficit (-233.07 mill. EUR) but with the highest variability (CV = -41.01%). Bosnia and Herzegovina and Croatia have larger deficits (-1,117.07 mill. EUR and -1,023.20 mill. EUR, respectively). Bosnia and Herzegovinas's trade balance was more stable over time.

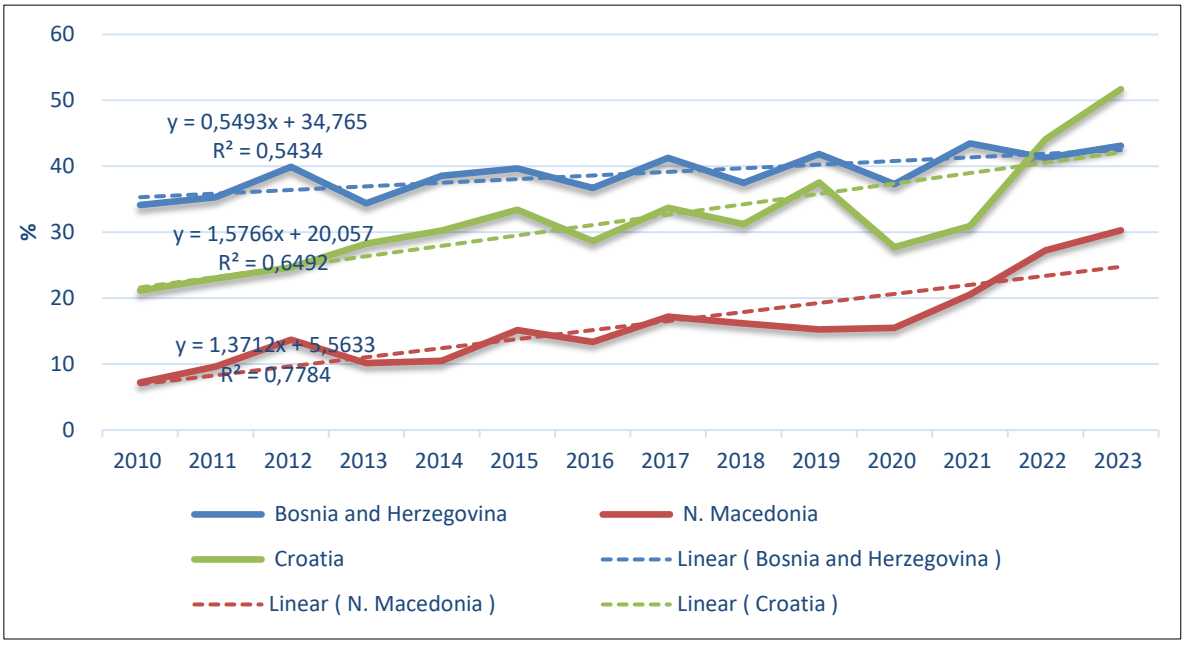
Regarding the Import Dependency Ratio (IDR), it varies substantially. Bosnia and Herzegovina has the highest import dependency (38.79%), while North Macedonia's IDR is much lower (15.71%) and Croatia's IDR stands at 31.93%. Generally, the coefficient of variation showed that the IDR for Bosnia and Herzegovina was relatively stable during the observed period (8.10%), while for North Macedonia, it was highly variable and unstable (42.27%). In Croatia, the changes in import dependency were much lower (25.81%) compared to North Macedonia, but not as stable as in Bosnia and Herzegovina.

Table 1. Key agricultural determinants for Bosnia and Herzegovina, North Macedonia and Croatia (2010–2023)

Country	Bosnia and Herzegovina			North Macedonia			Croatia		
Indicators	Mean	Std. Dev.	CV (%)	Mean	Std. Dev.	CV (%)	Mean	Std. Dev.	CV (%)
GVA (mill. EUR)	977.50	109.15	11.17	854.04	93.79	10.98	1,165.64	248.75	21.34
GPV (mill. EUR)	1,758.93	147.18	8.37	1,243.64	128.00	10.29	2,453.00	2,149.93	87.64
Agricultural land ('000 ha)	2,203.00	45.00	2.04	1,242.00	51.65	4.16	1,466.08	82.24	5.61
Export of agri-food products (mill. EUR)	406.86	77.79	19.12	551.21	100.81	18.29	1,979.45	884.65	44.69
Import of agri-food products (mill. EUR)	1,524.29	138.57	9.09	784.28	192.66	24.57	3,002.65	1,179.54	39.28
Trade balance in agri-food prod. (mill. EUR)	-1,117.0	98.47	- 8.82	- 233.07	95.57	- 41.01	- 1,023.2	331.39	- 32.39
Share Rural/Urban population (%)	109.36	6.45	5.90	72.79	2.42	3.33	76.64	3.34	4.36
IDR (%)	38.79	3.14	8.10	15.71	6.49	41.27	31.93	8.24	25.81

Source: authors' calculations according to data from WB StatDatabase (2024), FAO (2025), EC (2025), SSO (2025) and Croatian Bureau of Statistics (2025).

Graph 1 illustrates the IDR trends for Bosnia and Herzegovina, North Macedonia and Croatia from 2010 to 2023. The linear trend line of the IDR for Bosnia and Herzegovina shows a moderate upward slope ($y = 0.54x + 34.76$) with an R^2 of 0.54 and fluctuating around 35–40%. North Macedonia has the lowest IDR but demonstrates the fastest and most consistent increase, indicating rising dependency on imports. The trend line ($y = 1.37x + 5.56$) with a high R^2 of 0.78 suggests a strong and consistent upward trend in import dependency. Croatia demonstrates a higher and more volatile IDR compared to the other two countries. The IDR increases noticeably after 2020, peaking in 2023. The linear trend ($y = 1.58x + 20.11$) also indicates a rising tendency, with $R^2 = 0.65$, suggesting a moderate correlation with time. Before EU accession (2010–2013) Croatia's IDR was relatively stable, but after joining the EU (2014 – 2023), Croatia's IDR shows an increasing trend with more fluctuations, indicating a growing dependency on imported agri-food products in the post-accession period.



Graph. 1. Trend lines for IDR for Bosnia and Herzegovina, North Macedonia and Croatia (2010 – 2023)
Source: Authors calculations

Table 2 represents a descriptive analysis of the IDR in Croatia, for pre-EU (2010 – 2013) and post-EU (2014 – 2023) accession periods. Results show an increase from 24.25% in the pre-EU period to 35.00% in the post-EU period, with higher variability post-accession (SD = 7.65, CV = 21.86 vs. SD = 2.99, CV = 12.33), reflecting greater import dependency and fluctuations following EU membership.

Table 2. Descriptive statistics of Croatia's IDR before and after EU Accession

Periods of pre- and post-EU accession	Mean (%)	Std. Deviation (%)	Std. Error (%)	CV (%)
Pre-EU (2010–2013)	24.25	2.99	1.49	12.33
Post-EU (2014–2023)	35.00	7.65	2.42	21.86

Source: authors' calculations

An independent samples t-test was conducted to compare Croatia's IDR before and after EU accession presented, as presented in Table 3. Levene's test for equality of variances confirmed that the assumption of homogeneity of variances was met, F (1, 12) = 2.203, p = 0.163. Therefore, the row assuming equal variances was used for interpretation. The results revealed a statistically significant increase in Croatia's IDR post-EU accession period (M = 35.00, SD = 7.65) compared to the pre-EU period (M = 24.25, SD = 2.99); t (12) = -2.677, p = 0.020. The mean difference was -10.75, with a 95% Confidence Interval from -19.50 to -2.00.

Table 3. Independent samples t-test for Croatia's IDR

Test	F	Sig.	t	df	Sig. (2-tailed)*	Mean Difference	Std. Error Difference	95% CI Lower	95% CI Upper
Levene's Test for Equality of Variances	2.203	0.163							
Equal variances assumed			-2.67	12	0.02	-10.75	4.015	-19.498	-2.002
Equal variances not assumed			-3.78	11.957	0.00	-10.75	2.841	-16.943	-4.557

* *Statistical significance at the level of p-value < 0.05.*
Source: authors' calculations

The findings of the results from the correlation analysis, using Pearson correlation coefficients, for all three countries for examined variables: Import Dependency Ratio (IDR), Gross Value Added (GVA), agricultural land and the Share of Rural/Urban population, reveal both, common trends and specific country patterns, which are shown in Table 4.

Table 4. Pearson Correlation Coefficients for IDR, GVA, agricultural land and Share of Rural/Urban population in Bosnia and Herzegovina, North Macedonia and Croatia

Country	Variable	IDR (%)	GVA (mill. EUR)	Agricultural land ('000 ha)	Share of Rural/Urban popul. (%)
Bosnia and Herzegovina	IDR (%)	1	0.466	0.667**	-0.705**
	GVA (mill. EUR)	0.466	1	0.910**	-0.911**
	Agricultural land ('000 ha)	0.667**	0.910**	1	-0.969**
	Share of Rural/Urban popul. (%)	-0.705**	-0.911**	-0.969**	1
North Macedonia	IDR (%)	1	0.658*	0.412	-0.924**
	GVA (mill. EUR)	0.658*	1	0.597*	-0.750**
	Agricultural land ('000 ha)	0.412	0.597*	1	-0.326
	Share of Rural/Urban popul. (%)	-0.924**	-0.750**	-0.326	1
Croatia	IDR (%)	1	0.346	0.259	-0.819**
	GVA (mill. EUR)	0.346	1	-0.496	-0.483
	Agricultural land ('000 ha)	0.259	-0.496	1	-0.296
	Share of Rural/Urban popul. (%)	-0.819**	-0.483	-0.296	1

* Correlation is significant at the level of p value of 0.05
** Correlation is significant at the level of p value of 0.01
Source: authors' calculations

In Bosnia and Herzegovina, the IDR shows a positive correlation with GVA (0.466), but it is not statistically significant, meaning there is no clear relationship between IDR and GVA in agriculture. A moderate positive correlation (0.667**) indicates that higher IDR in Bosnia and Herzegovina tends to be associated with a larger area of agricultural land. The GVA is strongly positively correlated with Agricultural land (0.910**), while the Share of Rural/Urban population has a strong negative correlation with Gross Value Added (GVA) (-0.911**) and Agricultural land (-0.969**). The IDR shows a strong negative and significant correlation with the Share of Rural/Urban population (-0.705**). Although the results in Table 1 show the highest share of the rural population (109%) and the highest import dependency ratio (38%) for Bosnia and Herzegovina, compared to North Macedonia and Croatia, the negative correlation between IDR and the share of the rural population may be attributed to several factors. These include low agricultural productivity, which fails to meet domestic consumption needs, a lack of modern production technology and structural issues typical of transition economies.

In North Macedonia, a coefficient of 0.658* indicates a positive correlation between IDR and GVA, indicating that higher IDR in North Macedonia is associated with higher GVA in agriculture. Thus, the growth of agricultural production value does not correspond with a reduction in import dependency. This may be due to structural issues, where certain sectors are developed and more export-oriented, while basic food products continue to be imported due to insufficient domestic production. The coefficient of correlation of 0.412 is not statistically significant, meaning there is no clear relationship between IDR and the area of agricultural land. The IDR also has a strong negative correlation with the share of the rural/urban population (-0.924**). The Share of Rural/Urban population is strongly negatively correlated with GVA (-0.750**) and GVA shows a moderate positive correlation with agricultural land (0.597*).

The agricultural land, in both countries, Bosnia and Herzegovina and North Macedonia, contributes significantly to agri-food economic output (GVA), reflecting the importance of agriculture in these economies.

In Croatia, the IDR, like the other two countries, has a strong negative correlation with the Share of Rural/Urban population (-0.819**). This negative correlation suggests that a higher rural population, with a larger labour force, may enhance agricultural production and self-sufficiency, reducing import dependency. On the other hand, urbanization with higher consumption and lower local agricultural output may increase reliance on imports. However, neither the Share of Rural/Urban population nor GVA shows significant correlations with Agricultural land. Croatia's weaker correlations between GVA, agricultural land and rural/urban share may stem from its more developed, diversified economy, with higher agricultural productivity, a strong focus on tourism and services and reduced reliance on agriculture for economic output and import dependency. Croatia's integration into the European Union (EU) and its access to increased funding in agriculture and rural development, stricter environmental requirements and more diversified markets likely play a significant role in shaping its economic patterns.

CONCLUSION

Trade and international competitiveness are pivotal drivers of modern economic development for agricultural sectors and countries alike. This research highlights the evolving dynamics of agri-food import dependency in Bosnia and Herzegovina, North Macedonia and Croatia, three countries at different stages of EU integration. The findings reveal significant differences in agricultural performance, trade patterns and import dependency across countries, shaped by their unique economic structures, levels of development and integration processes. Croatia, as an EU member, demonstrates higher agricultural productivity and trade volumes but also exhibits increased import dependency post-accession, reflecting the dual impact of EU membership: enhanced access to subsidies and rural development funds, coupled with heightened competitive pressures from the EU Single Market. In contrast, North Macedonia and Bosnia and Herzegovina, as pre-accession countries, face persistent challenges such as small and fragmented land holdings, low productivity, liberalized markets and underdeveloped value chains, which contribute to their growing reliance on agri-food imports.

The analysis of the Import Dependency Ratio (IDR) underscores a rising trend in import dependency across all three countries, with North Macedonia showing the most consistent increase. This trend is particularly pronounced in Croatia following its EU accession, where the IDR rose significantly, reflecting the challenges of adapting to competitive EU markets. The negative correlation between IDR and the share of the rural population in all three countries suggests that rural areas, with their larger agricultural labour force, play a crucial role in enhancing domestic production and reducing import dependency. However, urbanization and the associated shifts in consumption patterns are likely to exacerbate reliance on imports, particularly in more developed economies like Croatia. In the context of Bosnia and Herzegovina, the positive and significant correlation between IDR and agricultural land suggests that large agricultural land is not sufficient to reduce the need for imports, possibly due to other factors such as productivity, technology and structure of agricultural production.

The research also emphasizes the importance of addressing structural inefficiencies, improving rural development and fostering innovation and technology transfer to enhance agricultural productivity and sustainability. For Bosnia and Herzegovina and North Macedonia, aligning with EU standards and policies, particularly the Common Agricultural Policy (CAP), presents both opportunities and challenges. While EU integration offers access to financial and technical support, it also requires significant reforms to enhance competitiveness and resilience in the face of increased market liberalization.

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