Original research paper Received: March 5, 2023 Revised: April 3, 2024 https://doi.org/10.22190/TEME230305051D UDC 338.4:339.1:001.892(497.11)

Revised: April 3, 2024 Accepted: April 19, 2024

THE SIGNIFICANCE OF AGRI-FOOD SECTOR'S EXPORTS FOR ECONOMIC DEVELOPMENT: THE CASE OF INNOVATIVE COUNTRIES AND THE REPUBLIC OF SERBIA

Miloš Dimitrijević*, Lela Ristić, Danijela Despotović

University of Kragujevac, Faculty of Economics, Kragujevac, Serbia

ORCID iDs: Miloš Dimitrijević

https://orcid.org/0000-0002-7922-8299
 https://orcid.org/0000-0002-4590-8261
 https://orcid.org/0000-0002-2610-8605

Lela Ristić Danijela Despotović

Abstract

Export promotion is used as an effective development strategy for many countries, while innovations and technologies have a major impact on the overall value and structure of exports. Exports, especially of agricultural products, have a special and greater importance for the economic development of developing countries, compared to developed countries. The subject of research in this paper is the export of the agri-food sector of the Republic of Serbia in relation to economically developed and innovative countries, and the aim of this research is to indicate the impact of the export of this sector on economic development. The OLS panel regression showed a positive impact of both the agri-food and the whole agribusiness sector on economic and sustainable development, thus confirming the research hypotheses. The Republic of Serbia and developing countries should follow the development strategies of innovative and economically developed countries. This means changing the structure and diversifying exports in order to increase the added value of products and their competitiveness on the international market. The way to achieve this is to introduce innovations in the production process and to increase productivity, which will increase the degree of processing of primary agricultural products, and create a precondition for structural transformation from primary to other sectors and economic development of countries.

Key words: export of agri-food products, Republic of Serbia vs. innovative countries, economic and sustainable development.

^{*} Corresponding author: Miloš Dimitrijević, University of Kragujevac, Faculty of Economics, Liceja Kneževine Srbije 3, 34000 Kragujevac, Serbia, mdimitrijevic@kg.ac.rs

ЗНАЧАЈ ИЗВОЗА ПОЉОПРИВРЕДНО-ПРЕХРАМБЕНОГ СЕКТОРА ЗА ПРИВРЕДНИ РАЗВОЈ: СЛУЧАЈ ИНОВАТИВНИХ ЗЕМАЉА И РЕПУБЛИКЕ СРБИЈЕ

Апстракт

Промоција извоза се користи као ефикасна стратегија развоја многих земаља, док иновације и технологије имају велики утицај на укупну вредност и структуру извоза. Извоз, нарочито пољопривредних производа, има посебан и већи значај за привредни развој земаља у развоју у односу на развијене земље. Предмет истраживања у оквиру овог рада је анализа извоза пољопривредно-прехрамбеног сектора Републике Србије у односу на економски развијене и иновативне земље, а циљ истраживања је указати на утицај извоза овог сектора на економски развој. OLS панел регресија је показала позитиван утицај пољопривредно-прехрамбеног, као и целокупног агробизнис сектора на привредни и одрживи развој, чиме су потврђене хипотезе истраживања. Сматра се да Република Србија и земље у развоју треба да следе стратегије развоја иновативних и економски развијених земаља. То подразумева промену структуре и диверзификацију извоза у циљу повећања додате вредности производа и њихове конкурентности на међународном тржишту. Начин да се то постигне јесте увођење иновација у процес производње и повећање продуктивности, чиме ће се повећати степен прераде примарних пољопривредних производа и створити предуслов за структурну трансформацију из примарног у друге секторе и привредни развој земље у целини.

Кључне речи: извоз пољопривредно-прехрамбених производа, Република Србија наспрам иновативних земаља, привредни и одрживи развој.

INTRODUCTION

As agricultural production is the basis of many trade activities, strengthening this sector seems to be a recommended strategy for most countries. This can be achieved through more efficient production, research and development (R&D), and innovation and investment (Mizik, 2021). In modern conditions, the development of innovative and investment activities in agriculture is a driver of ensuring food security and increasing export potential. The problem of forming an export-oriented agricultural sector in the leading agrarian countries is linked with increasing the efficiency of the introduction of innovative technologies and high-tech products into agricultural production (Shabanov et al., 2021).

Export diversification represents a change in the country's export structure that can be achieved by changing the existing export pattern or by introducing innovations and technologies. The diversification of exports is important for the economic growth of developing countries, which mainly export raw materials and agricultural products, and import consumer products from developed countries (Sarin et al., 2022).

However, high technology exports increase economic growth more than agricultural exports (Şahin & Kutluay Şahin, 2021). That's why developing countries should focus on products of a higher stage of processing, starting with primary agricultural products, in order to create conditions for a gradual industrialisation and tertiarisation of the economy.

The subject of this paper is the analysis of the export of the agrifood sector of the Republic of Serbia and innovative countries, while its aim is to show the importance of the export of this sector for economic and sustainable development.

In 2020, the first ten most innovative countries and, simultaneously, countries with a high-income include: Switzerland, Sweden, USA, Great Britain, Netherlands, Denmark, Finland, Singapore, Germany and the Republic of Korea. The Republic of Serbia belongs to the group of countries with an upper-middle income (ranks 10th among countries in that income group), while it ranks 53rd in terms of innovation (WIPO, 2020).

Based on the subject and aim of this research, the following research hypotheses were defined: (X_1) improving the quality of agricultural products has a positive impact on the growth of exports and the competitiveness of the agri-food sector; $(X_{1.1})$ the agri-food sector has a positive impact on the total export of the Republic of Serbia and innovative countries; and $(X_{1.2})$ the agri-food sector has a positive impact on the economic and sustainable development of the Republic of Serbia and innovative countries.

LITERATURE REVIEW

An increasing number of countries are directed towards export promotion as an effective development strategy. At the same time, creativity, innovation, technology, technology transfer, and the development of export-oriented companies have a great influence on the total value and structure of each country's exports. Considering the positive effects of creativity and its components on exports, it is important that a country which is export-oriented formulates and implements a strategy that favours creativity and innovation, because they can turn into economic growth and sustainable development (DiPietro & Anoruo, 2006). It is precisely for these reasons that the focus should be on the processing of primary agricultural products for export, as well as on the simultaneous increase of agricultural productivity through innovations, which can improve product quality and therefore contribute positively to exports (Golovko & Valentini, 2011). Innovative approaches in agriculture are moving from an emphasis on technology to achieving economic goals related to productivity, as well as harmony between social, economic and environmental goals (Andrade et al., 2020).

Export is among the very important factors that contribute to economic growth in developing countries, while agricultural exports have greater importance for economic growth in these countries (Alemayehu & Tilahun, 2021). Many studies reveal strong correlations between exports and economic growth. Agriculture export-led growth represents the opti-

mal allocation of resources for developing countries that have a comparative advantage in agricultural production. On the other hand, the contribution of agricultural exports to economic growth in these countries is neglected (Dawson, 2005).

Despite the significant contribution of agricultural exports to economic growth in developing countries, the empirical relationship between agricultural exports and economic growth has been neglected in the available literature. There are long-term relationships between GDP and agricultural exports, both for developing countries and for each income subgroup of countries (low-income countries, lower-middle-income countries, and upper-middle-income countries). The conclusion contrasts with traditional export pessimism about the role of the primary sector, where the contribution of agricultural exports to total exports and GDP declines as incomes increase (Sanjuán-López & Dawson, 2010). Empirical analyses show that agricultural exports have a strong positive correlation with GDP and a positive effect on economic growth. For this reason, it is very important to improve investments in the agricultural sector and to create more effective trade policies of agricultural products (Bakari & Mabrouki, 2017).

The importance of economic growth is greater in developing countries than in developed countries, and agricultural growth and export is an important determinant of economic growth in developing countries, which overcome several obstacles to economic growth, such as insufficient resources, low level of technology and inadequate volume of production. Agricultural exports can have a positive effect on agricultural growth even in developed countries if there is a large common market (Seok & Moon, 2021).

Agricultural growth has played an important role in the economic development process of today's developed countries, where agriculture has contributed to the growth of the non-agricultural sector and overall wellbeing. As national incomes rise, the demand for food grows more slowly than the demand for other goods and services. As a result, the value added of labour, land and capital of agricultural households declines as a share of the gross value of agricultural production. This contributes to the decline of the agricultural sector in GDP and employment. That is why countries should be based on the growth of agricultural productivity through agricultural research and development (Pingali, 2007).

Developing countries must focus on food safety and quality measures, given that sanitary measures are the main factor affecting the ability of developing countries to take advantage of opportunities to export agri-food products to the markets of developed countries (Henson & Loader, 2001).

Although the level of food safety in the Western Balkans (WBs) is lower than in the EU countries, it is not threatened. However, it can become endangered in crisis conditions, such as the COVID-19 pandemic (Matkovski, et al. 2020). Although Serbia has the highest level of comparative advantages in the agri-food sector in this region, it needs to do a lot to increase the export competitiveness of this sector. The role of agriculture in the WBs is higher than the average of the EU countries, and agriculture is characterised by issues of unbalanced sectoral production, fragmented structure of agricultural holdings, relatively low yields, unfavourable export structure, etc. That is why it is necessary to intensify the turnover of agri-food products and change the structure of exports, considering that a large percentage of exports are plant products of lower processing, i.e., cereals, fruits and vegetables (Matkovski, et al. 2022).

The agricultural sector achieves the biggest surplus in the foreign trade exchange of the Republic of Serbia (Figure 1). The agri-food sector is an important element of the exports and economic development of the Republic of Serbia, and its potential is still not fully utilised (Marković et al., 2019). Also, the competitiveness and degree of processing of these products is still at a low level (Đurić, et al., 2017). Accordingly, our development strategy must be based on increasing the export of agri-food products by changing the structure and achieving a higher level of finalisation, in order to increase the competitiveness and added value of the products (Mitrović, et al., 2017).

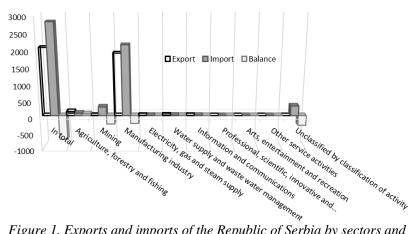


Figure 1. Exports and imports of the Republic of Serbia by sectors and areas of classification of activities, 2019, billion RSD Source: SORS, Foreign trade goods, 2019

The main problem in the foreign trade exchange of agricultural products is the structure of the products that are exported and imported. Primary agricultural products and products of lower stages of processing dominate Serbia's exports, while imports have significantly more products of higher stages of processing. Thereby, the number of products that are

imported is significantly higher than the number of products that are exported (Stegić, 2016). Cereals and fruits represent an important part of the export of agri-food products of Serbia, while products such as fruits and vegetables, coffee, tea, cocoa, and spices have a large share in total imports. The most important markets for the agricultural products of the Republic of Serbia are the EU and the CEFTA countries (Zekić & Matkovski, 2015).

MATERIALS AND METHODS

The research was conducted for the Republic of Serbia and the ten most innovative countries according to WIPO, the World Intellectual Property Indicators 2020, which are also the most developed countries (countries from a high-income group). The research period is between the years 2006 and 2019, given that the variables used in the research for Serbia have been available since 2006 (agri-food products according to the HS classification – harmonised system). Table 1 shows the variables used in the research.

Table 1. Definition of agricultural sector and economic growth variables for the most innovative countries and the Republic of Serbia

Label	Definition	Source							
Label		Source							
Dependent variables									
Exp	Export of all products (HS classification)	UN Comtrade Database,							
		2020							
HDI	Human Development Index	UNDP, 2020							
GDP_pc	Gross domestic product per capita (GDP per capita)	World Bank, 2020							
Agricultural independent variables									
Exp_agb	Export of the agribusiness sector (HS classification)	UN Comtrade Database,							
		2020							
Exp_agf	Export of agri-food products	ITC – Trade Map, 2020							
Exp_agr	Export of agricultural products	WTO, 2020							
Exp_food	Export of food products	WTO, 2020							
Remark: I	$Exp_agb \supseteq Exp_agf$; $Exp_agf \supseteq Exp_agr$; $Exp_agf \supseteq$	⊇Exp_food							
Control variables									
Ino	Innovativeness - Dummy variable	Authors' research							
	(Republic of Srbia vs. the most innovative countries)								
Inf	Inflation (GDP deflator)	World Bank, 2020							
ICT_imp	Import of high-tech products (% of goods import)	World Bank, 2020							
R&D	Expenditure on research and development	World Bank, 2020							
	(% of GDP)								
C									

Source: Authors' research

Agribusiness is based on the HS classification of products. It includes agriculture, forestry, fishery products and products of the pre-farm and post-farm sectors (FAO, 2015, p. 47).

Table 2. Multicollinearity of agricultural sector and economic growth variables – the most innovative countries and the Republic of Serbia

Label	Exp	HDI	GDP_ pc	Exp_ agb	Exp_ agf	Exp_ agr	Exp_ food	Ino	Inf	ICT_ I	R&D
Exp	1.00		-								
HDI	***0.32	1.00									
GDP_pc	*0.15	***0.83	1.00								
Exp_agb	***0.99	***0.31	*0.13	1.00							
Exp_agf	***0.86	***0.37	***0.25	***0.88	1.00						
Exp_agr	***0.84	***0.31	***0.26	***0.84	***0.92	1.00					
Exp_food	***0.85	***0.31	***0.26	***0.85	***0.94	***0.99	1.00				
Ino	***0.30	***0.92	***0.73	***0.27	***0.27	***0.25	***0.24	1.00			
Inf	**-0.18	***-0.65	***-0.51	*-0.16	**-0.21	*-0.17	*-0.17	***-0.58	1.00		
ICT_imp	*0.16	***0.24	**0.20	0.07	0.07	*0.12	0.11	***0.39	**-0.18	1.00	
R&D	*0.12	***0.57	***0.37	0.10	*-0.12	-0.05	-0.08	***0.62	***-0.36	0.06	1.00

Source: Authors' research

Note: *, ***, *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively

All agricultural indicators in Table 2 are in multicollinearity, which determined the research models. OLS panel regression was used in this research. The Hausman test conditioned the use of the random effect. Figure 2 presents a schematic representation of the regression model applied in the research.

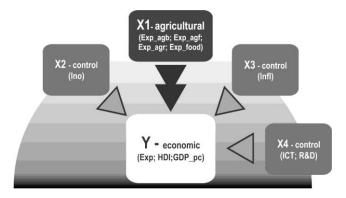


Figure 2. Scheme of the regression model of influence Source: Authors'

Table 3 shows a matrix of variables in the regression models applied in the research.

Table 3. Matrix of variables in regression models of influence

M- d-1-	Dependent	_		indeperables	ndent	Control variables			
Models	Variables	Exp_ agb	Exp_ agf	Exp_ agr	Exp_ food	Ino	Inf	ICT_ imp	R&D
	Exp								
Models	1HDI								
Initiate	GDP_pc								
models	Exp								
Models									
	GDP_pc								
	Exp								
Models 1HDI									
Robust	GDP_pc								
models	Exp								
Models	2HDI								
	GDP_pc								

Source: Authors'

RESEARCH RESULTS

The following regression equations were used in this research:

EXPi,t =
$$\alpha + \beta 1$$
AGRICULTUREi,t + $\beta 2$ Inoi,t + $\beta 3$ Infi,t + ϵi ,t (1)

GDP_pci,t =
$$\alpha + \beta 1$$
AGRICULTUREi,t + $\beta 2$ Inoi,t + $\beta 3$ Infi,t + ϵi ,t (2)

$$HDIi,t = \alpha + \beta 1 AGRICULTUREi,t + \beta 2Inoi,t + \beta 3Infi,t + \epsilon i,t$$
 (3)

where agriculture refers to Exp_agb and Exp_agf country i in year t.

It can be concluded (Table 3) that the export of agribusiness and the agri-food sector has a statistically significant positive impact on the total export, as well as on economic and sustainable development. Where statistical significance is recorded, innovation has a positive impact, while inflation has a negative impact on export, and on economic and sustainable development.

Table 3. The impact of the agri-food sector on exports, economic and sustainable development of the most innovative countries and the Republic of Serbia

Label	Dependent	variable Exp		nt variable P_pc	Dependent variable HDI		
	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2	
Intercept	14513738649.25 (0.16)	-9636929643.49 (-0.03)	8765.74 (0.80)	7821.50 (0.70)	***0.80 (68.68)	***0.80 (70.85)	
Exp_agb	***2.31 (35.21)		***0.01 (4.25)		***0.01 (2.92)		
Exp_agf		***15326.56 (17.46)		***0.01 (5.76)		***0.01 (5.14)	
Ino	1049471196.23 (0.01)	210656406913.89 (0.70)	***34076.23 (2.94)	***34645.95 (2.97)	***0.12 (9.66)	***0.11 (9.77)	
Infl	*-2876221983.83 (-1.60)	-540323318.21 (-0.18)	*-496.63 (-1.78)	*-410.78 (-1.49)	***-0.01 (-5.96)	***-0.01 (-6.00)	
Adjusted R ²	0.89	0.67	0.16	0.22	0.52	0.56	
F-statistic	***412.55	***103.90	***10.76	***15.60	***56.69	***65.94	

Source: Authors' research

Note: *, **, *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively

ROBUSTNESS CHECK

When examining the robustness of the data, the impact of exports of agricultural and food products on total exports, and on economic and sustainable development was examined in particular.

The following regression equations were used to check robustness:

$$EXP_{i,t} = \alpha + \beta_1 AGRICULTURE_{i,t} + \beta_2 Ino_{i,t} + \beta_3 ICT_imp_{i,t} + \beta_4 R\&D_{i,t} + \epsilon_{i,t}$$
 (4)

GDP_pc_{i,t} =
$$\alpha + \beta_1 AGRICULTURE_{i,t} + \beta_2 Ino_{i,t} + \beta_3 ICT_imp_{i,t} + \beta_4 R\&D_{i,t} + \varepsilon_{i,t}$$
 (5)

$$HDI_{i,t} = \alpha + \beta_1 AGRICULTURE_{i,t} + \beta_2 Ino_{i,t} + \beta_3 ICT_{imp}_{i,t} + \beta_4 R\&D_{i,t} + \epsilon_{i,t}$$
 (6)

where agriculture refers to Ha Exp agr and Exp food country i in year t.

Table 4 shows that primary agricultural and food products have a statistically significant positive impact on exports, as well as on economic and sustainable development. Food products have a greater impact on exports than primary agricultural products, according to the beta coefficients. Innovation, import of high technology, and expenditure on research and development (statistical significance was not recorded only in the first two models for innovation and import of high technology) have a

positive impact on export, and on economic and sustainable development (except for import of high technology in the last two models).

Table 4. Robustness check - the impact of agricultural and food sector on exports, economic and sustainable development of the most innovative countries and the Republic of Serbia

Label	Dependent v	Dependen GDF		Dependent variable HDI		
	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
Intercept	-55017598789.37	-55347390777.80	2999.45	2988.95	***0.77	***0.77
	(-0.17)	(-0.18)	(0.23)	(0.23)	(62.98)	(63.04)
Exp_agr	***7358277.30 (19.25)		***0.16 (4.65)		***0.01 (3.40)	
Exp_food		***8186189.91 (17.35)		****0.18 (4.56)		***0.01 (3.62)
Ino	86629181871.29	119596969046.93	**31047.30	**31664.38	***0.11	****0.11
	(0.25)	(0.36)	(2.21)	(2.26)	(7.73)	(7.72)
ICT_imp	1208711215.23	873028774.86	*319.02	*314.08	*0.00	*0.00
	(0.61)	(0.40)	(1.69)	(1.66)	(-1.49)	(-1.47)
R&D	***54765336581.10	***55919223298.56	*2165.11	*2170.79	***0.01	***0.01
	(3.72)	(3.50)	(1.56)	(1.56)	(3.30)	(3.35)
Adjusted R ²	0.77	0.73	0.20	0.20	0.51	0.51
F-statistic	***111.26	***90.54	***9.23	***9.07	***34.35	***35.03

Source: Authors' research

Note: *, **, *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively

Given that the agricultural and food sectors, viewed separately, once again record a statistically significant positive impact on exports, and on economic and sustainable development, we can say that the results are robust to changes.

DISCUSSION

The agri-food sector has a positive impact on exports, as well as on economic and sustainable development, thus confirming the hypotheses set in this research. Consequently, the focus should be on the processing of primary agricultural products, given the greater importance of food exports over primary agricultural products. The processing of products should improve the quality and increase the value added of agricultural products.

In addition to the agri-food sector, research and development expenditures, as a prerequisite for the introduction of innovations, have a statistically significant positive impact on the dependent variables in all observed models. Also, innovativeness has a positive impact on the dependent variables (statistical significance was not recorded only for exports).

That is why the Republic of Serbia, like other developing countries where agri-food sector and its exports are more important for economic development compared to developed countries, should follow developed and innovative countries, and harmonise with them. The Republic of Serbia should implement structural transformations, which would lead to a redistribution of economic activity to the sectors of agriculture, industry and services, which follows the process of modern economic growth (Herrendorf et al., 2014). Structural transformation could be understood as the process by which the economy changes its economic activity and sectoral specialisation from agricultural to industrial, and finally service sectors, with economic growth (Jena & Barua, 2020). However, until the appropriate level of development is achieved, special attention must be paid to the agricultural sector, given its great importance for the economic development of developing countries. Low agricultural productivity can significantly delay industrialisation, and poor agricultural technology causes the country's per capita income to lag far behind the leaders. Improvements in agricultural productivity can accelerate industrialisation and, therefore, have large effects on a country's relative income (Gollin et al., 2002).

Economic development strategies should be based on export diversification. Export diversification facilitates structural transformation and favours development and economic growth through technology spill-over effects between sectors (Mania & Rieber, 2019). There is a need for diversification and greater value addition of agricultural products before export, in order to encourage maximum benefits from exports. This will ensure a sustainable positive contribution of agricultural exports to economic growth (Ijuo & Andohol, 2020).

CONCLUSION

A country's exports and the trade openness of an economy have a positive impact on economic development (Dimovski et al., 2022). Exports especially contribute to the economic development of developing countries, in contrast to developed countries where economic development is achieved through research and development expenditures. The reason for this is insufficient research and development expenditures in developing countries (Todorović & Kalinović, 2022). Increasing exports is not possible without new equipment and modern technology. Therefore, in the implementation of economic policy measures, greater attention must be paid to the financing of production for export, as well as export promotion (Kovačević, 2006). In this context, research and development expenditures, as well as technological innovations, have a positive impact on export performance and economic development (Zhao & Li, 1997).

Creating a highly productive export-oriented agricultural sector of the economy and increasing the efficiency of agricultural production is possible on the basis of encouraging innovations and investments (Vasilchenko & Sandu, 2020).

By introducing innovations and increasing the productivity of the primary sector, the degree of processing and finalisation of primary agricultural products can be significantly increased, thus increasing their value added and competitiveness. This is especially important for developing countries, considering that the agri-food sector in those countries is of great importance for economic development, of greater importance than in developed countries; but, on the other hand, their products are not sufficiently competitive on the international market.

REFERENCES

- Alemayehu, S., & Tilahun, S. (2021). Agricultural Export and Economic Growth Nexus: A Case Study of Ethiopia. *International Journal of Rural Development, Environment and Health Research (IJREH)*, 5(2), 1-5. doi:10.22161/ijreh.5.2.1
- Andrade, D., Pasini, F., & Scarano, F. R. (2020). Syntropy and innovation in agriculture. *Current Opinion in Environmental Sustainability*, 45, 20–24. doi:10.1016/j.cosust.2020.08.003
- Bakari, S., & Mabrouki, M. (2017). The effect of agricultural exports on economic growth in South-Eastern Europe: An empirical investigation using panel data. *Journal of Smart Economic Growth*, 2(4), 49-64.
- Dawson, P. J. (2005). Agricultural exports and economic growth in less developed countries. *Agricultural Economics*, *33*(2), 145–152. doi:10.1111/j.1574-0862. 2005.00358.x
- Dimovski, J., Radivojević, V., & Mitić, G. (2022). Trade openess functioning to promote economic prospects: an analysis of the new EU member states. *Teme*, 46(4), 887-902. https://doi.org/10.22190/TEME210423047D
- DiPietro, W. R., & Anoruo, E. (2006). Creativity, innovation, and export performance. *Journal of Policy Modeling*, 28(2), 133–139. doi:10.1016/j.jpolmod.2005.
- Đurić, D., Ristić, J., Đurić, D., & Vujanić, I. (2017). Export of agricultural and food products in the function of economic growth of Republic of Serbia. *Economics* of Agriculture, 64(3), 887-900. doi: https://doi.org/10.5937/ekoPolj1703887D
- FAO (2015). Guidelines on International Classifications for Agricultural Statistics.

 Retrieved from http://www.fao.org/3/ca6409en/ca6409en.pdf (09/09/2020)
- Gollin, D., Parente, S., & Rogerson, R. (2002). The Role of Agriculture in Development. American Economic Review, 92(2), 160–164. doi:10.1257/000282802320189177
- Golovko, E., & Valentini, G. (2011). Exploring the complementarity between innovation and export for SMEs' growth. *Journal of International Business Studies*, 42(3), 362–380. doi:10.1057/jibs.2011.2
- Henson, S., & Loader, R. (2001). Barriers to Agricultural Exports from Developing Countries: The Role of Sanitary and Phytosanitary Requirements. World Development, 29(1), 85–102. doi:10.1016/s0305-750x(00)00085-1
- Herrendorf, B., Rogerson, R., & Valentinyi, Á. (2014). Growth and Structural Transformation. *Handbook of Economic Growth*, 2, 855–941. doi:10.1016/b978-0-444-53540-5.00006-9

- Ijuo, O. A., & Andohol, J. (2020). Agricultural Exports and Economic Growth in Selected West African Countries. World Academics Journal of Management, 8(1), 29-39.
- ITC (2020). Trade Map. Retrieved from https://www.trademap.org/(09/01/2020)
- Jena, D., & Barua, A. (2020). Trade, structural transformation and income convergence: The case of EU. *Journal of Public Affairs*, e2565. doi:10.1002/pa.2565
- Kovačević, R. (2006). Possibilities and limitations of export growth as a factor in the balance of payments of the Republic of Serbia. *International Problems*, 18(4), 492-512.
- Mania, E., & Rieber, A. (2019). Product export diversification and sustainable economic growth in developing countries. Structural Change and Economic Dynamics. 51, 138-151. doi:10.1016/j.strueco.2019.08.006
- Marković, M., Krstić, B., & Rađenović, Ž. (2019). Export competitiveness of the Serbian agri-food sector on the EU market. *Economics of Agriculture*, 66(4), 941-953. https://doi.org/10.5937/ekoPolj1904941M
- Matkovski, B., Đokić, D., Zekić, S., & Jurjević, Ž. (2020). Determining Food Security in Crisis Conditions: A Comparative Analysis of the Western Balkans and the EU. Sustainability, 12(23), 9924. doi:10.3390/su12239924
- Matkovski, B., Zekić, S., Đokić, D., Jurjević, Ž., & Đurić, I. (2022). Export Competitiveness of Agri-Food Sector during the EU Integration Process: Evidence from the Western Balkans. *Foods*, 11(1), 10. https://doi.org/10.3390/foods11010010
- Mitrović, S., Mitrović, A., & Cogoljević, M. (2017). Contribution of Agriculture to the Development of Serbia. *Economics of Agriculture*, 64(2), 805-819. doi: https://doi.org/10.5937/ekoPolj1702805M
- Mizik, T. (2021). Agri-Food Trade Competitiveness: A Review of the Literature. Sustainability, 13, 11235. https://doi.org/10.3390/su132011235
- Pingali, P. (2007). Agricultural growth and economic development: a view through the globalization lens. Agricultural Economics, 37, 1–12. doi:10.1111/j.1574-0862. 2007.00231.x
- Şahin, L. & Kutluay Şahin, D. (2021). The Relationship Between High-Tech Export and Economic Growth: A Panel Data Approach for Selected Countries. *Gaziantep University Journal of Social Sciences*, 20(1), 22-31. doi: 10.21547/jss.719642
- Sanjuán-López, A. I., & Dawson, P. J. (2010). Agricultural Exports and Economic Growth in Developing Countries: A Panel Cointegration Approach. *Journal of Agricultural Economics*, 61(3), 565–583. doi:10.1111/j.1477-9552.2010.00257.x
- Sarin, V., Mahapatra, S. K., & Sood, N. (2022). Export diversification and economic growth: A review and future research agenda. *Journal of Public Affairs*, 22(3), e2524. doi:10.1002/pa.2524
- Seok, J. H., & Moon, H. (2021). Agricultural exports and agricultural economic growth in developed countries: Evidence from OECD countries. *The Journal of International Trade & Economic Development*, 30(7), 1004–1019. doi:10.1080/09638199.2021. 1923780
- Shabanov, V. L., Vasilchenko, M.Y., Derunova, E. A., & Potapov, A. P. (2021). Formation of an Export-Oriented Agricultural Economy and Regional Open Innovations. *Journal of Open Innovation: Technology, Market, and Complexity*, 7(1), 32. https://doi.org/10.3390/joitmc7010032
- SORS (2019). *International Trade in Goods*. Belgrade: Statistical Office of the Republic of Serbia.
- Stegic, M. (2016). Foreign trade exchange of agro-industrial products between the Serbia and EU. *Economics: theory and practice*, 9(1), 1-18.

- Todorović, M., & Kalinović, M. (2022). The contribution of development factors to economic growth on various GDP levels the middle-income trap. *Teme*, 46(4), 1029-1049. https://doi.org/10.22190/TEME220520054T
- UN Comtrade Database (2020). *International Trade Statistics Database*. Retrieved from https://comtrade.un.org/data/ (08/08/2020)
- UNDP (2020). Human Development Reports. Retrieved from http://hdr.undp.org/en/indicators/137506 (09/01/2020)
- Vasilchenko, M., & Sandu, I. (2020). Innovative-investment development of agriculture in the conditions of formation of the export-oriented economic sector: system approach. Scientific Papers: Management, Economic Engineering in Agriculture & Rural Development, 20(1), 599-612.
- WIPO (2020). World Intelectual Property Indicators 2020. Retrieved from https://www.wipo.int/publications/en/details.jsp?id=4526 (09/01/2020).
- World Bank (2020). *Indicators*. Retrieved from https://data.worldbank.org/indicator (09/01/2020)
- WTO (2020). Statistics on Merchandise Trade Data Portal. Retrieved from https://data.wto.org/ (09/01/2020)
- Zekić, S., & Matkovski, B. (2015). Trade analysis of Serbian agri-food products. In: Subić, J., Kuzman, B., & Jean Vasile, A. (eds). Sustainable agriculture and rural development in terms of the Republic of Serbia strategic goals realization within the Danube region (pp. 464-480). Belgrade: Institute of Agricultural Economics.
- Zhao, H., & Li, H. (1997). R&D and export: An empirical analysis of Chinese manufacturing firms. *The Journal of High Technology Management Research*, 8(1), 89–105. doi:10.1016/s1047-8310(97)90015-8

ЗНАЧАЈ ИЗВОЗА ПОЉОПРИВРЕДНО-ПРЕХРАМБЕНОГ СЕКТОРА ЗА ПРИВРЕДНИ РАЗВОЈ: СЛУЧАЈ ИНОВАТИВНИХ ЗЕМАЉА И РЕПУБЛИКЕ СРБИЈЕ

Милош Димитријевић, Лела Ристић, Данијела Деспотовић Универзитет у Крагујевцу, Економски факултет, Крагујевац, Србија

Резиме

Пољопривредно-прехрамбени сектор представља битан сегмент спољнотрговинске размене. Јачање пољопривредно-прехрамбеног сектора може се остварити ефикаснијом производњом, истраживањем и иновацијама. Диверзификација извоза је посебно значајна за убрзавање стопе привредног раста земаља у развоју, које углавном извозе сировине и пољопривредне производе. Због тога се сматра да земље у развоју треба да се усмере ка производима виших фаза прераде. Извоз пољопривредних производа има већи значај за економски раст у земљама у развоју у односу на развијене земље. Иако Србија има највећи ниво компаративних предности у пољопривредно-прехрамбеном сектору у овом региону, потребно је да бројним напорима повећа извозну конкурентност овог сектора. Улога пољопривреде у земљама Западног Балкана је израженија од просека земаља ЕУ, а пољопривреду притом карактеришу питања неуравнотежене секторске производње, фрагментисана структура пољопривредних газдинстава, релативно ниски приноси и неповољна структура извоза. Стратешке правце развоја Републике Србије треба усмеравати ка повећању извоза пољопривредно-прехрамбених производа,

променом структуре и вишим нивоом финализације, како би се повећала конкурентност и додата вредност производа. Пољопривредно-прехрамбени сектор има статистички значајан позитиван утицај, како на извоз, тако и на привредни и одрживи развој, чиме се потврђују хипотезе овог истраживања. За Републику Србију је значајно да спроводи структурне трансформације, чиме би дошло до прерасподеле економске активности на секторе пољопривреде, индустрије и услуга, што прати процес савременог економског раста. Међутим, док се не постигне виши ниво развоја, посебна пажња мора се посветити пољопривредном сектору, с обзиром на његов велики значај за привредни развој Републике Србије, односно, земаља у развоју. Ниска пољопривредна продуктивност може значајно да успори развој, а застарела пољопривредна технологија доводи до тога да се у економском смислу далеко заостаје за лидерима. Сходно томе, стратегија економског развоја треба бити заснована на диверзификацији извоза. Притом, диверзификација извоза доприноси структурној трансформацији и погодује развоју и економском расту. Наиме, постоји потреба за диверзификацијом и већом додатом вредношћу пољопривредних производа пре извоза, како би се подстакле максималне користи од извоза. Стварање високопродуктивног извозно оријентисаног пољопривредног сектора привреде и повећање ефикасности пољопривредне производње могуће је на основу подстицања иновација и инвестиција у пољопривреди. Увођењем иновација и повећањем продуктивности аграрног сектора, може се значајно подићи степен прераде и финализације примарних пољопривредних производа, а самим тим и њихова додата вредност и конкурентност.