

**PERFORMANCE OF ROMANIA'S MAIN AGRICULTURAL
SECTORS - INSTRUMENT FOR REGIONAL DEVELOPMENT
MANAGEMENT****Gavrilă-Paven I., Wainberg D.***

Abstract: Romanian agriculture is a sector that requires significant structural changes to become competitive on an international level. Integration into the European Union increased competition within the agrarian sector as a single market and, more broadly, in the global market. This research aims to analyze the comparative advantages of the main agriculture sectors at the Center Region level and compare them with the national level. The study underlines a specific regional development evolution in the case of the Center Region, as this region does not mirror the tendencies seen at the national level. The evolution of commercial flows can validate, in an objective way, the competitive sectors. This analysis intends to showcase strengths and opportunities for future development at the regional level, underlining the regions that have increased their specialization. All this information is important for stakeholders, who are responsible for designing and preparing the financial instruments used to support regional development. The research developed in the article can be used as an instrument for regional development management, helping to establish regional strategies for sustainable development. This instrument could also be used to achieve national objectives through the creation of strategic management documents for European regions. The article presents an analysis of the Center Region, Romania. The research is built on an analysis of the comparative advantages determined for the main agricultural sectors. Positive results were obtained by the Center Region at the national level, making it the first Romanian region to record positive results during the analyzed period for regional balance trade. The analysis identifies a regional development tendency for the Center Region that can be enhanced through efficient management at the regional level and supported through financing policies at the national level. The authors aim to empirically support the tendency shown by the evolution of comparative advantage for the Center Region as opposed to the tendency recorded at the national level, validating in this manner an instrument that can be used by the stakeholders to design regional development strategies. In this way, the competitive sectors can be objectively identified, validated through the evolution of commercial flows, and valorize through efficient management.

Key words: regional development management; comparative advantage; sector specialization; strategic management; regional development management

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Introduction

The European integration process, combined with the globalization process, has generated changes for the Romanian economy and all its sectors. The dimensions of international competition have generated unprecedented challenges for all economic sectors involved in international trade. Romanian agriculture sectors exhibit a high degree of fragmentation, with many individual producers, a relatively small number of industrial processors, and a low interest in representation in cooperatives or producers' organizations. In recent decades, agricultural production in many developing countries has changed its foundation from family farms to larger organizations that are more heavily integrated into the agricultural production and distribution chain (Alboiu, 2018; Boehlje, 2000). Romanian agricultural sectors require an integrated approach because the level of organization among producers is low. However, agriculture can be competitive if it is supported by coherent policies that are integrated into regional development strategies. These challenges demonstrate the relevance of determining competitiveness, at the regional level, for the main categories of agricultural goods. Such calculations can support the regional development policy and represent a basis for creating or adjusting financial instruments that can increase regional performances and benefit international trade activity. This information can contribute to efficient management at the regional level and help regions obtain support through financing policies at the national level in order to maximize regional competitive advantages.

An analysis of the strategies developed at the regional level for Romania reveals that these strategies do not examine the comparative advantage of different agricultural sectors, as they are based only on the overall outcomes for these sectors. The analysis conducted in certain areas of regional development for the Center Region, Romania, finds that the information related to competitiveness can contribute to efficient management at the regional level and financing policies at the national level. The instrument developed for this study could be used to achieve national objectives for sustainable development through strategic plans for European regions.

Literature Review

The agricultural sector constitutes an objective in economic and social terms for each country's strategic development, which necessitates designing support instruments to encourage, protect, promote, and maintain agricultural activity (Arisoy, 2020; Klomp and Haan, 2013; Dunmore, 1986). The agricultural sector is meant to receive protection against foreign competition through various instruments such as customs tariffs and quotas, subsidies, prohibitions, voluntary limitations, and other criteria (Moon and Pino, 2018). On the common market, however, these instruments are disrupting competition and the opportunity for each producer to participate fairly. In recent decades, protective policies in agriculture have been revisited and changed,

especially under the influence of the World Trade Organization, founded in 1995 (Arisoy, 2020; Russo et al., 2011). In the last few years, several developments have occurred in relation to export subsidies, customs tariffs, and domestic support, which function as instruments to support the agricultural sector (Moon and Pino, 2018; Pawlak, 2018; Fanelli, 2019; Horská et al., 2019; Berry et al., 2022). Therefore, related to regional development management, there are several references and instruments that can be recommended for general use in designing regional development strategies.

The instruments designed at the regional level to support and encourage agricultural activities should be developed according to the specific characteristics of each region and thus maximize the region's potential. Over time, there have been a few models developed that take into consideration the local context and several variables referring to local territories (Singh et al., 2009). At the national level, there are differences between the characteristics and geographical potential of different regions, which leads to differences in their contributions to the macroeconomic indicators at the regional and national levels.

The authors used the revealed comparative advantage (RCA) method for determining competitiveness at the regional level. The analysis included the determination of relative export performance and the relative import–export performance for the main groups of goods. The research is focused on the assessment of the RCAs held by the Center Region in Romania, compared with the other Romanian regions, for four categories of agricultural goods recorded by statistics, both nationally and regionally.

The method applied in this study is based on the Belassa RCA index (Belassa, 1965; Belassa, 1977). The authors compared the results obtained for determining the comparative advantage of the analyzed groups of goods using the relative export performance, determined based on the exports. The analysis was conducted for the Center Region at the county level, in order to potentially identify territorial peculiarities and establish the competitive sectors that require support through regional development strategies. The objective was to identify the agricultural sectors that bring added value to the Center Region. These sectors must be supported and stimulated through a regional development policy focused on creating and maintaining a business environment favorable to innovation and development, that will stimulate companies in identifying new ways to compete efficiently on the international market. The analysis uses the positive results recorded nationally by the Center Region as a starting point, as the Center Region was the only Romanian region to record positive results for the evolution of balanced trade during the analyzed period.

Regional Comparative Advantages—Regional Analysis Background

Romania holds both strong and weak positions in the European Competitiveness Report ranking, which focuses specifically on the manufacturing and services areas. The economic crisis from 2008–2010 did not cause the European Union to lose all its comparative advantages on the world market. The European Union still holds

about two-thirds of the industrial sectors, representing almost 75% of the global added value. These advantages refer to the sectors that are producing sophisticated goods, including those involving high knowledge intensity. Paradoxically, considering the Romanian natural potential, the percentage of the population employed in agriculture, and the reduced level of payment, Romania holds a weak position the index in this sector. Romania's neighbors, Bulgaria and Hungary, proved to be more competitive, which explains why inhabitants from the Romanian border cities are producing their goods abroad (Gavrilă-Paven, 2020; Cyrek, 2017). In contrast, the most competitive products at the international level include the tobacco industry and wood products (products with low levels of processing). According to the European Competitiveness Report from 2014, the index for comparative advantage for these sectors is 5.81 for the tobacco industry and 4.86 for wood products.

In 2016, a trend of accentuation of the current account deficit was recorded, which began in 2014, when the balance of goods and primary incomes began to deteriorate. Analyzing the groups of products from the Combined Nomenclature shows deficits including for agri-food products, which totaled 710 million euros at the national level. Considering the commercial partners from other countries, the deficit in the balance of goods was the result of intra-community trade (97.6 percent); the extra-community trade influence was only 2.4 percent (see Gavrilă-Paven, 2020).

Regarding economic structure, Romania has eight regions (level NUTS II). The Romanian development regions were established based on geographic and socio-economic similarities, in order to develop coherent regional development strategies. These strategies are instruments at the national level; they are designed to identify the competitive sectors, find suitable support to stimulate regional development, and diminish regional economic disparities. The Center Region is a competitive region at the national level that recorded significant evolution for the economic indicators, placing third overall at the national level.

Analyzing foreign trade activity at the level of the national economy is relevant to the tendency of diminishing the trade balance and its weight in GDP until 2014, which was followed by an increase in the trade balance deficit. However, in this framework, it is important to note that the Center Region was shown to increase the surplus of the trade balance in GDP, although at the national level, the result was a deficit, which was also generalized for the other seven development regions of Romania. This evolution must be closely analyzed with the evolution of the comparative advantages held by the Center Region nationally, in comparison with the other Romanian regions.

Table 1. Evolution of trade balance for Romania and Center Region during 2011–2022 (million EUR)

	2011		2012		2013		2014		2015		2016	
Exports—Romania	45292	100%	45069	100%	45706	100%	56322	100%	54596	100%	57386	100%
Exports—Center Region	5800	12.81%	6037	13.39%	6343	13.88%	7913	14.05%	7662	14.03%	8489	14.79%
Imports—Romania	54952	100%	54703	100%	55317	100%	58522	100%	62962	100%	67344	100%
Imports—Center Region	5578	10.15%	5733	10.48%	5959	10.77%	6560	11.21%	6876	10.92%	7627	11.33%
Trade Balance—Romania	-9660	-7.25%	-9634	-7.22%	-9611	-6.66%	-2201	-1.46%	-8366	-5.23%	-9958	-5.84%
Trade Balance—Center Region	222	1.52%	304	2.01%	383	2.40%	1353	8.22%	785	4.52%	861	4.46%

	2017		2018		2019		2020		2021		2022	
Exports—Romania	62644	100%	67723	100%	69002	100%	62174	100%	74705	100%	91952	100%
Exports—Center Region	9043	14.43%	10840	16.00%	10646	15.43%	9901	15.92%	10991	14.71%	12862	13.99%
Imports—Romania	75604	100%	82840	100%	86297	100%	80570	100%	98379	100%	126054	100%
Imports—Center Region	8770	11.59%	9899	11.95%	9989	11.58%	10105	12.54%	11622	11.81%	13839	10.98%
Trade Balance—Romania	12960	6.90%	15117	-	-17295	-	-18396	-	-23674	-	-34102	-
Trade Balance—Center Region	273	1.28%	941	-	657	-	-204	-	-631	-	-977	-

Source: INS Romania, Tempo Online Database, July 2023.

Note: Exports and imports are expressed in million euros, adjusted according to the inflation rate, to facilitate comparisons at the national and regional levels. The balance of FOB/CIF trade balance was calculated based on the value of FOB export and CIF import, as the difference between them. The FOB (Free on Board) price is the price at the border of the exporting country, which includes the value of the goods, all the transport costs to the point of embarkation, and all the taxes incurred for the cargo to be loaded on board. The CIF (Cost Insurance Freight) price represents the price at the border of the importing country, which includes both the components of the FOB price and the costs of insurance and international transport.

The analysis of the data presented at the national level as well as for the Center Region demonstrates the negative evolution of the balanced trade, as well as for the two elements, import and export. The diminishing of exports and imports was also influenced by the slight appreciation of the national currency. Against this background, the positive element of the appreciation (instability) of the Romanian currency has had a negative effect on exports. Many of the exporters have either tempered their business or, if they did not record losses, at most they had modest profits. Besides the effects of the financial–economic crisis, another element that has determined the evolution of exports and imports at a slower pace than imports is that the process of privatization and restructuring has caused the closing of some companies or autonomous companies; moreover, the quality of the resulting products did not satisfy the requirements of external beneficiaries. The massive reduction of the exchanges of intermediate goods, especially of the imports, was able to diminish the productive capacity of the industry, as well as other activities.

Research Methodology

Specialization indicates a focus on one narrow area of activity. In this context of product specialization, the RCA index is a relative measure that indicates a strong relation with some sectors. RCA was proposed by Belassa (1965). Since then, the measure has been applied in numerous reports and academic publications to determine trade specialization and capture production specialization. This method is based on the determination of the product groups that had a comparative advantage, based on the structure and its evolution of the commercial flows. The analysis determines the comparative advantage held by the Center Region nationally, by identifying the competitive groups of agricultural goods. The competitive sectors are determined objectively and are validated by the evolution of commercial flows. Based on the regional analysis of the comparative advantage, the competitive potential in a territory can be identified and financial instruments designed. The role of these financial instruments is to validate the decisions that support regional investment strategies and support the economic development of the agricultural sector. For determining at the regional and county level the relative export performance, the following formula was used:

$$RCA_{Regional} = \frac{X_{ri}}{X_{ni}} \cdot \frac{X_r}{X_n} \quad (1)$$

where

X_{ri} —the regional export for the i group of goods

X_{ni} —the national export for the i group of goods

X_r —regional export

X_n —national export

Using this method, one region can be found to have a comparative advantage nationally, for a certain category of goods i , when the index calculated is greater than 1. The higher the results obtained for this index compared to 1, the stronger the comparative advantage. If the results obtained are between 0 and 1, then the analyzed region holds no comparative advantage.

The data used in the research were monthly series of data describing the commercial flows at the regional level. Exports (FOB) and imports (CIF) were collected by sections, according to the International Trade Standard Classification (CSCI) Rev.4. The data included both intra-EU and extra-EU commercial flows, expressed in thousand euros. The data set can be consulted as a supplement for this article. The data used in the research were collected by the Romanian National Institute of Statistics according to international agreements in data collecting, so the results are comparable to similar studies conducted on this subject.

Since the RCA results are neutral (the results that are being obtained cannot be compared on both sides of 1), Laursen (2015) suggests generating the index through a transformation:

$$RSCA = \frac{RCA-1}{RCA+1} \quad (2)$$

and calling this measure the Revealed Symmetric Comparative Advantage (RSCA). This measure ranges from -1 to 1.

Like the RCA, the RSCA is a measure of specialization. It represents a way of transforming the RCA and measuring the relative performance of exports, not their competitiveness. For the purpose of this study, the values recorded show, regardless of a region's overall performance, that because regions usually specialize in specific groups of products, they will record high values for RCA and RSCA for some product groups and low values for others.

In his paper, Laursen argues that the index should always be made symmetric for econometric analysis applications. The ideas are supported by the fact that the RCA records values from both sides of unity: for values from 0 to 1, a region is not specialized in a certain sector (product group), and for the values from 1 to infinity, the region is specialized. According to this approach, using the RCA in regression analysis makes it possible to add additional weight to values above 1 compared to the results that are below 1.

Therefore, during the research, we applied the method developed for the RCA but also verified the significance of the data by using also the method proposed by Laursen. This step represents a second confirmation for the relevance of the sectors selected to be analyzed at the Center Region level compared to the national level.

Research Results

Table 2 shows the adjusted Balassa's comparative advantage measure RCA obtained, using the method described above, from equation (1), for the Center Region from 2011–2022. Among Romania's regions, it is evident that the Center Region is specialized in (among other things) raw hides, skins, leather, furs, and manufactures thereof. Areas of relative weakness include vegetable products and animal or vegetable fats.

Table 2. Revealed Comparative Advantage—Center Region (2011–2022)

Year	I.	II.	III.	VIII.
Average 2011	1.12	0.08	0.10	3.33
Average 2012	1.14	0.08	0.07	3.55
Average 2013	1.30	0.07	0.08	3.56
Average 2014	1.41	0.07	0.06	3.4
Average 2015	1.23	0.07	0.04	2.99
Average 2016	1.09	0.07	0.03	2.71
Average 2017	0.99	0.10	0.04	2.33
Average 2018	1.10	0.05	0.01	2.61
Average 2019	1.11	0.07	0.01	2.81
Average 2020	1.17	0.09	0.03	2.73
Average 2021	1.34	0.08	0.03	3.12
Average 2022	1.48	0.14	0.03	3.69

Source: Authors' own computation.

Note: I. Live animals and animal products; II. Vegetable products, III. Animal or vegetable fats; VIII. Raw hides, skins, leather, furs, and manufactures thereof.

The data set used for this analysis is available as supplementary data to the article and can be used for further research in this area. The results obtained in the present research confirm that the sector selected for analysis has different competitiveness at the regional level compared to the national level. The analysis shows the positive results obtained by the Center Region at the national level as the first Romanian region to record positive results, during the analyzed period, for regional balanced trade. The analysis indicates a certain regional development tendency for the Center Region that can be enhanced through efficient management at the regional level and supported through financing policies at the national level. The research developed in the article can therefore function as an instrument for regional development management, helping to establish regional strategies for sustainable development. This analysis can emphasize the benefits of adjusting the national policies at the regional level to maximize the potential of each region, rather than reducing them to uniform national strategies that are not suitable for each region. This instrument could be used to achieve objectives determined at the national level through strategic management plans for European regions.

Discussion

In support of the idea of attaining sustainable business performance, studies conducted on this topic are beginning to focus on the microeconomic aspects of the development, including various social and technological challenges (Haseeb, M. et al., 2019) and company strategy (Yanya M., and Mahamat N, 2020; Sigalas and Pekka-Economou, 2013; Badenhorst-Weiss and Weber, 2016). Other studies focus on supply chain risks, as purchased products are transformed into finished goods in

order to gain profit margin, reduce cost, and obtain appropriate quality (Christopher, 2016; Sütőová et al., 2018; Abe et al., 2015).

Regarding regional development, related studies usually track different sectors or financing programs and their influence on the efficiency of different companies (Sedliacikova, M. et al, 2023; Meyer, N., 2018). Some studies pertain to the regional development of urban areas (Dacko-Pikiewicz, Z., 2019).

The present study begins with the analysis of macroeconomic aspects, aiming to offer a managerial instrument for regional stakeholders and support the decisions made to support the regional and national development strategies. The RSCA is a measure of specialization. It represents a way of transforming the RCA and measuring the relative performance of exports, not the competitiveness. In the case of our research, the recorded values indicate that regardless of how weak or strong a region is performing overall, regions are often, by definition, specialized in specific groups of products, and they will therefore record high values for RCA and RSCA for some product groups and low values for others.

In his paper, Laursen argues that the index should always be symmetric for econometric analysis applications. The idea is supported by the fact that RCA records values from both sides of unity: for the values from 0 to 1, the region is not specialized in a certain sector (products group), and for the values from 1 to infinity, the region is specialized. According to this approach, using RCA in regression analysis is giving the possibility to add much more weight to values above 1 compared to the results recorded below 1.

Vollrath (1991) suggests that the logarithm applied for the RCA represents an objective solution to the asymmetry problem of the RCA index, but the adjusted index thus obtained is not defined in the case of a region with zero product in a sector. Because the RSCA index has similar properties to the logarithm solution, and because it can be defined in the case of zero product from a sector, we prefer this measure in our study.

Table 3. Revealed Symmetric Comparative Advantage (RSCA) determined for Center Region compared with national level (2011–2022)

Year	I.	II.	III.	VIII.
Average 2011	0.06	-0.85	-0.82	0.54
Average 2012	0.07	-0.85	-0.87	0.56
Average 2013	0.13	-0.87	-0.85	0.56
Average 2014	0.17	-0.87	-0.89	0.55
Average 2015	0.10	-0.87	-0.92	0.50
Average 2016	0.04	-0.87	-0.94	0.46
Average 2017	-0.01	-0.82	-0.92	0.40
Average 2018	0.05	-0.9	-0.98	0.45
Average 2019	0.05	-0.87	-0.98	0.48
Average 2020	0.08	-0.83	-0.94	0.46
Average 2021	0.15	-0.85	-0.94	0.51
Average 2022	0.19	-0.75	-0.94	0.57

Source: Authors' own computation.

This symmetric RSCA index is used in analyzing persistence and specialization trends of trade patterns. The specialization trends were tested using a regression equation developed and applied for the Center Region of Romania:

$$RSCA_i^t = \alpha_i + \beta_i RSCA_i^{t-1} + \varepsilon_i. \quad (3)$$

The superscripts t and $t - 1$ refer to two consecutive time periods: in the case of this study, two consecutive months. The RSCA, as the dependent variable, was recorded at time t for sector I and then tested in relation to the independent variable, which is the value of the RSCA in the previous month, $t - 1$. α_i and β_i are standard linear regression parameters, and ε_i is a residual term for the field i . In this case, the size of β_i is the image of the stability of a region's specialization model between the two periods. A low β_i indicates high turbulence, but if and β_i is not significantly different from 1, the model identified remains unchanged.

The value of the ratio β_i/R , where R is the sample correlation coefficient between the observed records analyzed and the observed predictor values, measures the increase or the diminishing of a region's specialization between the two periods. If $\beta_i/R > 1$, then the specialization increased; if $\beta_i/R < 1$, then the specialization diminished.

Table 4 presents the results of the estimations based on equation (3) using the RSCA obtained for 120 months of the study period. The results show a reduction in specialization in the vegetable products field for the Center Region ($\beta/R < 1$) within this period. The specialization in live animals and animal products remained constant ($\beta/R = 1$), but the region became more specialized in the other three fields. Here it indicates an increase of specialization, although it is subtle ($\beta/R > 1$).

Table 4. Regression on the persistence of RSCA product indices

	I.	II.	III.	VIII.
α	0.033	-0.376	-0.457	-1.127
β	0.621	0.558	0.504	0.412
R^2	0.380	0.278	0.255	0.131
β/R	1.007	1.058	0.998	1.140
p -value	0.000	0.000	0.000	0.000

Source: Authors' own computation.

Table 4 presents the results obtained through the Jarque-Bera test application for determining the normality of the error terms.

The regression shows that this study's predictor variables are statistically significant because their p -values equal 0.000.

In this manner, the RSCA can be a management instrument suitable for use in developing policies at the regional and national level. Such policies should aim to design financial mechanisms for supporting agricultural sectors according to the comparative advantages of each region.

This analysis explored the subject of regional development with the aim of underlining how measures of competitiveness can be supported through efficient management at the regional level and promoted through financing policies at the national level. This instrument could be used to promote national objectives for sustainable development at the national level through strategic documents for European regions.

Conclusion

The competitive categories of goods for the Center Region were determined based on the comparative advantage analysis using the methods presented above. Surprisingly, except for categories I and II, the Romanian economy is not competitive at an international level. However, for live animals and animal products, the Center Region is competitive at the national level (a finding confirmed by all determined results for both indices). This study's analysis found a reduction in specialization in the vegetable products field for the Center Region within this period, while the specialization in live animals and animal products remained constant (see Table 4). However, the Center Region became more specialized in the other two fields: III and VIII. For the last two categories, specialization marginally increased. Although this increase was not drastic, it should be supported through development strategies designed at the regional level.

In conclusion, the study's analysis reveals strengths and opportunities for future development in the Central Region of Romania, underlining the sectors that increased their specialization. This information is vital for stakeholders, who are responsible for designing and preparing financial instruments.

This analysis proposes a new approach to regional development management. The findings could serve as an instrument based on the comparative advantage of the

main agricultural sectors in order to provide guidance for regional strategies. In this manner, financing programs could be directed toward agricultural sectors that bring added value at the regional level and transform regions into competitive actors at the European level. This instrument could promote national objectives through strategic documents for European regions.

This research has its limits because the data refer to one region of a single country. However, the paper shows details for choosing this region as a case for demonstrating the efficiency of a new management instrument that could be used in the future for planning regional development. The results of the analysis conducted could be translated at the national level, but only in terms of verifying the similarities of comparable regions. In order to have general applicability, the research would need to be expanded to the national level and then, on another level, to be included in international comparisons between member states of the European Union.

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Appendix 1. RCA monthly calculated for the selected categories

2011	01	02	03	04	05	06	07	08	09	10	11	12
I.	1.09	1.03	1.22	0.80	1.21	1.27	1.24	1.07	1.01	1.08	1.32	1.12
II.	0.03	0.03	0.05	0.07	0.07	0.18	0.13	0.12	0.13	0.09	0.04	0.05
III.	0.07	0.03	0.05	0.01	0.04	0.23	0.06	0.13	0.16	0.16	0.13	0.09
VIII.	3.35	3.40	3.43	2.96	3.15	3.04	3.67	3.02	3.44	3.68	3.18	3.65
2012	01	02	03	04	05	06	07	08	09	10	11	12
I.	1.20	0.96	0.87	1.06	1.14	0.87	0.91	1.36	1.33	1.08	1.47	1.46
II.	0.04	0.04	0.06	0.04	0.06	0.10	0.10	0.10	0.10	0.15	0.07	0.06
III.	0.16	0.10	0.06	0.02	0.10	0.02	0.04	0.13	0.07	0.05	0.05	0.07
VIII.	3.75	3.52	3.64	3.17	3.48	3.38	3.76	3.90	3.79	3.19	3.34	3.67
2013	01	02	03	04	05	06	07	08	09	10	11	12
I.	1.18	1.07	1.04	1.15	1.09	1.15	1.38	1.28	1.24	1.40	1.64	1.93
II.	0.09	0.07	0.06	0.10	0.06	0.08	0.06	0.04	0.10	0.11	0.04	0.03
III.	0.08	0.04	0.05	0.12	0.17	0.09	0.10	0.05	0.04	0.06	0.04	0.11
VIII.	3.67	3.71	3.52	2.99	3.63	3.29	3.53	3.43	3.51	3.58	3.90	3.93
2014	01	02	03	04	05	06	07	08	09	10	11	12
I.	1.48	1.16	1.21	1.03	1.28	1.42	1.50	1.32	1.43	1.72	1.68	1.70
II.	0.04	0.03	0.04	0.07	0.07	0.26	0.05	0.05	0.05	0.06	0.06	0.07
III.	0.03	0.06	0.02	0.08	0.05	0.10	0.04	0.07	0.04	0.03	0.04	0.12
VIII.	3.57	3.64	3.66	3.28	3.07	3.12	3.79	3.20	3.54	3.39	3.43	3.15
2015	01	02	03	04	05	06	07	08	09	10	11	12
I.	1.65	1.38	1.13	0.98	0.94	1.21	1.26	1.19	1.30	1.37	1.15	1.28
II.	0.04	0.05	0.05	0.05	0.04	0.09	0.09	0.08	0.10	0.14	0.09	0.05

III.	0.01	0.02	0.07	0.08	0.02	0.03	0.04	0.02	0.02	0.04	0.02	0.08
VIII.	3.10	2.99	2.90	2.84	3.48	3.12	3.55	2.52	3.01	2.66	2.72	2.95
2016	01	02	03	04	05	06	07	08	09	10	11	12
I.	1.11	1.13	1.05	0.77	1.02	1.17	1.17	1.09	1.13	0.97	1.31	1.12
II.	0.08	0.05	0.04	0.06	0.07	0.04	0.07	0.07	0.09	0.12	0.09	0.05
III.	0.08	0.02	0.02	0.04	0.04	0.03	0.06	0.03	0.03	0.02	0.02	0.02
VIII.	2.60	2.72	3.01	2.80	2.58	2.94	2.94	2.20	2.71	2.79	2.51	2.68
2017	01	02	03	04	05	06	07	08	09	10	11	12
I.	1.01	1.15	0.81	0.85	0.89	0.93	1.07	0.98	1.13	1.03	0.97	1.03
II.	0.07	0.10	0.12	0.07	0.16	0.13	0.07	0.10	0.07	0.10	0.10	0.11
III.	0.01	0.17	0.02	0.03	0.04	0.04	0.02	0.02	0.02	0.06	0.02	0.01
VIII.	2.29	2.29	2.34	2.41	2.24	2.22	2.46	1.82	2.14	2.48	2.41	2.82
2018	01	02	03	04	05	06	07	08	09	10	11	12
I.	1.11	1.15	0.98	0.90	1.02	1.08	1.09	1.10	1.25	1.18	1.22	1.16
II.	0.04	0.03	0.06	0.03	0.04	0.06	0.05	0.04	0.05	0.09	0.08	0.06
III.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
VIII.	2.63	2.47	2.77	2.64	2.52	2.63	2.60	2.39	2.57	2.86	2.35	2.84
2019	01	02	03	04	05	06	07	08	09	10	11	12
I.	1.35	1.14	1.11	1.01	1.05	1.23	1.05	1.09	1.02	1.27	0.95	1.09
II.	0.05	0.04	0.05	0.05	0.05	0.04	0.06	0.03	0.06	0.10	0.13	0.11
III.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
VIII.	2.62	2.98	2.86	2.70	2.41	2.81	2.86	2.55	3.00	2.69	2.95	3.23
2020	01	02	03	04	05	06	07	08	09	10	11	12
I.	1.24	1.33	1.11	1.20	1.07	1.16	1.40	0.99	1.18	1.07	0.98	1.31
II.	0.04	0.04	0.05	0.04	0.06	0.08	0.09	0.08	0.13	0.13	0.18	0.13
III.	0.01	0.05	0.03	0.01	0.02	0.04	0.03	0.02	0.02	0.03	0.06	0.08
VIII.	2.84	2.52	2.81	2.67	2.98	2.09	3.05	2.18	2.71	2.86	2.82	3.23
2021	01	02	03	04	05	06	07	08	09	10	11	12
I.	1.07	1.26	1.15	1.00	1.25	1.31	1.37	1.53	1.54	1.64	1.36	1.65
II.	0.07	0.08	0.07	0.06	0.06	0.07	0.09	0.10	0.07	0.07	0.11	0.16
III.	0.06	0.04	0.02	0.05	0.02	0.01	0.03	0.04	0.03	0.02	0.02	0.05
VIII.	2.77	2.59	2.81	2.62	2.89	3.33	3.59	3.21	3.46	3.46	3.13	3.63
2021	01	02	03	04	05	06	07	08	09	10	11	12
I.	1.38	1.41	1.44	1.30	1.71	1.53	1.54	1.57	1.44	1.47	1.39	1.55
II.	0.05	0.09	0.05	0.09	0.11	0.15	0.13	0.13	0.21	0.17	0.18	0.27
III.	0.01	0.01	0.01	0.01	0.02	0.04	0.06	0.02	0.05	0.04	0.06	0.05
VIII.	3.22	3.22	3.67	3.66	3.43	3.88	4.11	3.47	3.85	3.83	3.58	4.30

Note: I—Live animals and animal products, II—Vegetable products, III—Animal or vegetable fats, and VIII—Raw hides, skins, leather, furs, and manufactures thereof.

WYDAJNOŚĆ GŁÓWNYCH SEKTORÓW ROLNICTWA W RUMUNII - INSTRUMENT ZARZĄDZANIA ROZWOJEM REGIONALNYM

Streszczenie: Rumuńskie rolnictwo to sektor, który wymaga istotnych zmian strukturalnych, aby stać się konkurencyjnym na poziomie międzynarodowym. Integracja do Unii Europejskiej zwiększyła konkurencję w sektorze rolniczym jako jednolitym rynku oraz szerzej na rynku globalnym. Badanie to ma na celu analizę porównawczą zalet głównych sektorów rolnictwa na poziomie Regionu Środkowego i porównanie ich z poziomem krajowym. Studium podkreśla specyficzną ewolucję rozwoju regionalnego w przypadku Regionu Środkowego, ponieważ ten region nie odzwierciedla tendencji obserwowanych na

poziomie krajowym. Ewolucja przepływów handlowych może w obiektywny sposób potwierdzić sektory konkurencyjne. Analiza ta ma na celu przedstawienie mocnych stron i możliwości przyszłego rozwoju na poziomie regionalnym, wyodrębniając regiony, które zwiększyły swoją specjalizację. Wszystkie te informacje są istotne dla interesariuszy, którzy są odpowiedzialni za opracowywanie i przygotowywanie instrumentów finansowych ukierunkowanych na wspieranie rozwoju regionalnego. Badania przedstawione w artykule mogą zostać wykorzystane jako instrument zarządzania rozwojem regionalnym, pomagając w tworzeniu regionalnych strategii zrównoważonego rozwoju. Instrument ten mógłby zostać również wykorzystany do osiągnięcia celów krajowych poprzez stworzenie dokumentów zarządzania strategicznego dla regionów europejskich. W artykule przedstawiono analizę Regionu Środkowego w Rumunii. Badanie opiera się na analizie przewag komparatywnych określonych dla głównych sektorów rolnictwa. Region Środkowy osiągnął pozytywne wyniki co uczyniło go pierwszym na poziomie krajowym regionem, który odnotował pozytywne wyniki w analizowanym okresie dla regionalnego salda handlu. Analiza identyfikuje tendencję rozwoju regionalnego Regionu Środkowego, którą można wzmocnić poprzez skuteczne zarządzanie na poziomie regionalnym i wsparcie polityki finansowania na poziomie krajowym. Celem autorów jest empiryczne wsparcie tendencji, jaką wykazuje ewolucja przewag komparatywnych Regionu Środkowego, w odróżnieniu od tendencji obserwowanej na poziomie krajowym, walidując w ten sposób instrument, który może zostać wykorzystany przez interesariuszy do projektowania strategii rozwoju regionalnego. W ten sposób można obiektywnie zidentyfikować konkurencyjne sektory, zweryfikować je na podstawie ewolucji przepływów handlowych i wzmocnić je poprzez skuteczne zarządzanie.

Słowa kluczowe: zarządzanie rozwojem regionalnym; przewaga komparatywna; specjalizacja branżowa; zarządzanie strategiczne; zarządzanie rozwojem regionalnym