

## EU ACCESSION IMPACTS ON THE COMPARATIVE ADVANTAGES IN AGRICULTURAL TRADE: ROMANIA'S CASE

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### Summary

*The research aims at evaluating the accession impacts on Romania's agriculture by analysing the comparative advantages in trade relations with EU. The method used the calculation of the trade specialization degree index constructed from the original Lafay index and adapted on the agricultural sector. While providing a rank of products by their level of specialization on the international market, the research results indicate a decrease of the specialization level and a loss in the trade diversification of the Romanian products. The assessments reveal that certain products previously expressing an export potential, have suffered in the post-accession period an important decline in their commercial specialization: such is the case of live animals and animal products, which, although still have positive trade balance, the net export amounts registered significant declines. The results identified similar loss for oilseeds, milk and dairy products.*

**Key words:** *agricultural trade, comparative advantages, EU accession*

**JEL:** *Q17, F14, F15*

### Introduction

Several methods frequently used in the analysis of foreign trade models are based upon the calculation of the trade comparative advantage indices, relevant for the assessment of competitiveness of certain products or economic sectors, in relation to the structure and evolution of commercial flows, or of the specialization level of traded products.

A wide literature in the domain has been developed (Banse et al, 1999; Brasili, 2008; Gorton, Davidova, 2001). Competitiveness is a relative concept, for the reason that being determined by endogen and exogenous factors, to whom depends how well the economic sectors/entities/products perform comparing to international competitors, will have any influence on it. On

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one hand, improving competitiveness relates to the use of own resources to amplify the value of output, on the other hand, factors such as policies and financial mechanisms, for instance, the exchange rate, belong to the broader macroeconomic context.

As no country could be net exporter in all the products (Porter, 1990), the benefits of international trade reside in providing the needed goods. Products specialization should take place where the country is relatively more productive, while imports, in less productive than foreign trade partners.

While the theory of comparative advantage indicates that specialization is a precondition for gathering gains from trade (Kowalski, 2011), any substantive interference with this process, including sectoral or macroeconomic politics, can reduce these gains.

Within this framework of ideas, the research objective was to identify the advantages, or disadvantages, of the Romanian agri-food products on international markets, based upon the method of evaluation the specialization level of traded products relative to the EU.

The appraisal of the level of specialization is a commonly used method in the foreign trade studies, as the indices are relevant for the assessment of competitiveness of certain products, or economic sectors, in relation to the structure and evolution of commercial flows. Thus, the empiric results reside in assessments of Romania's competitiveness in external agri-food trade experienced in the period pre-and post-EU accession.

The investigations highlight the opportunities of products with expressed export potential, respectively, the sensitive areas affected by net imports of product groups, aiming to contribute to the improvements in the national sector performance in the context of growing competition of foreign producers.

### **Researching Method**

The present research was based upon the calculation of the Lafay index that measures the specialization degree of a certain country in a certain sector. According to previous authors (Latruffe, 2010; Zaghini, 2003), the method of appraisal the commercial advantages of a country or sector in the foreign trade can be used to analysis its external competitiveness.

The Lafay index has a larger coverage area, as in its original form it takes into consideration the trade shares in each sector in relation to GDP, but it can assess the contribution of each product in relation to the corresponding importance in trade: the comparative advantage of a country  $i$  in producing a product  $j$  is measured by the share of trade balance of product  $j$  in total trade, multiplied by the share of total trade of product  $j$  in total country trade.

The specialization index gives the possibility to thoroughly asses the comparative advantages, taking into consideration both the export and import flows and the differences between the trade balances of each product compared to the total trade balance. The index representativeness and the distortions of the analysis depend upon the data aggregation level.

The positive values of Lafay index reveal the existence of comparative advantage for a certain product  $j$ . The higher the value of the index, the higher is its specialization level or the comparative advantage. The negative values reveal a comparative disadvantage (without meaning that the sector is not important for the national economy).

The method has been used to evaluate the level of specialization of Romanian agri-food products in the international trade relations. In such purpose, the index has been adapted to measure the contribution of each Romanian agricultural product, at 2 digit aggregation level corresponding to the Combined Nomenclature (CN), to the total agri-food trade. The study-case material was based on empiric evidences of Romania's agri-food trade flows within the period 2006-2010, using the EUROSTAT trade statistics online database.

### Results of Research

Under the influence of the developments in the domestic economy subsequent to the EU accession, the period 2007-2009 was reflected in the country's foreign trade by an intensification of both import and export flows, yet Romania remains deficient in agri-food products since 1990. The total agricultural trade experienced a 44% growth compared to 2007, i.e. from 4.4 to 6.4 billion Euros in 2008 and 6 billion Euros in 2009.

In the pre-accession period, the agri-food trade between Romania and the Member States developed under the influence of the European Agreement on agriculture and EU became Romania's main trade partner. In the year 2007, Romania obtained the membership status, while the agri-food exports on the intra-Community market contributed to the increase of 9.7% in Romania's gross value added obtained in agriculture (Rusali, 2012).

In the post-accession period, the Romanian agri-food sector experienced a growing openness to foreign markets, significantly more important than indicators derived from national development. Romania is highly dependent on external agri-food markets, sharing 83% in 2009 and the indicator reflects the low performance facing international competitiveness, while EU is the major trade partner.

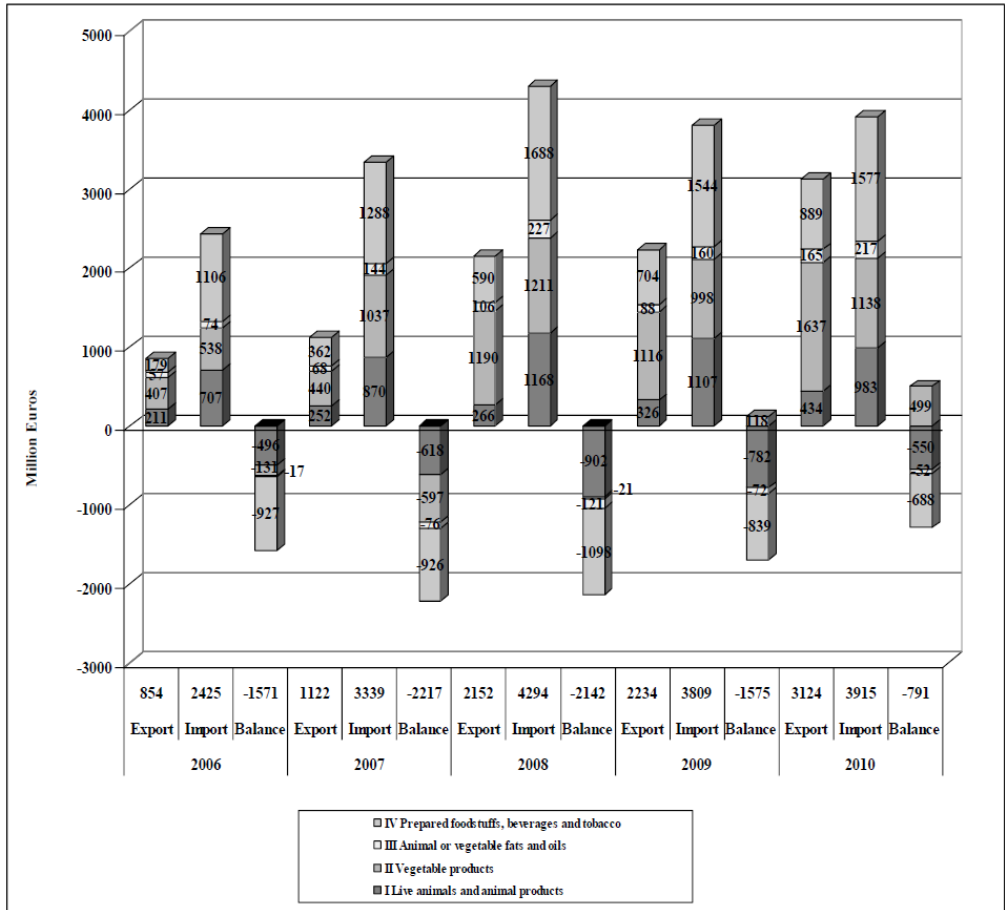
Trade policy and exchange rate in recent years have favored high levels of coverage of imports by exports, although lower than at national economy level; in the year 2010 it amounted to 80%.

According to the statistics presented in Fig. 1, the total agricultural trade increased continuously, from 3.28 billion Euros in 2006 to 7.04 billion Euros in 2010, while the trade unbalance tended to recover, after the deep historic deficit of -2.2 billion Euros in 2007, to -791 million Euros in 2010.

The results of research provide evaluations and dynamics of the trade specialization of Romanian agricultural and food products.

The calculation of the Lafay index, adapted on the agricultural sector, allows the rank of the products with comparable advantages on foreign markets. Table 1 presents the indices calculated on products aggregated by chapters of NC, in the period 2006-2010.

**Figure 1.** Dynamics and structure of Romania’s agricultural trade (in period 2006-2010)



Source: processing of National Institute of Statistics data, <http://insse.ro>

Romania’s agri-food foreign trade describe a specialization pattern on cereals, live animals, oil seeds, as well pre-accession some produces as fats and oils, vegetables and beverages, corresponding to the products evidenced with highest level of the indices.

The indices reflect the recent main changes in Romania’ agri-food foreign trade pattern; the method is useful in designing a dynamic perspective chart based on their evolution.

The evolution of the indices estimated for the analyzed period shows a decreasing trend of the specialization level and a loss of commercial diversification of the Romanian agri-food products groups for almost all products aggregated by chapters, except for tobacco following the year 2007. As well, positive changes were identified, in the year 2010, on meat, products of the milling industry, sugar and residues of food industry.

**Table 1.** Trade specialization index of Romania's agri-food products (in period 2004-2010)

CN Code - Denomination	2006	2007	2008	2009	2010
01 - Live Animals	6.39	5.60	2.35	2.45	-3.96
02 - Meat and edible meat offal	-7.86	-5.54	-7.12	-4.75	0.78
04 - Dairy produce	0.62	-0.66	-1.74	-1.51	-0.42
05 - Products of animal origin	-0.17	-0.19	-0.26	-0.30	-0.09
06 - Live trees and other plants	-0.54	-0.58	-0.94	-1.00	-0.03
07 - Edible vegetables, roots, tubers	0.36	-0.24	-0.63	-0.91	-0.67
08 - Edible fruits & nuts	-0.92	-1.54	-1.47	-1.36	-0.90
09 - Coffee, tea, mate & spices	-1.41	-1.03	-1.28	-1.37	-0.07
10 - Cereals	5.92	2.00	10.59	10.11	3.91
11 - Products of the milling industry	-0.71	-0.95	-0.98	-0.73	0.15
12 - Oil seeds & oleaginous fruits	7.05	5.27	8.11	4.96	-0.68
13 - Lacs, gums, resins, o. veg. saps	-0.15	-0.13	-0.17	-0.17	-0.01
14 - Vegetable products nes e.g. plaiting	0.11	0.06	0.02	0.01	-0.09
15 - Animal or vegetable fats & oils	1.38	0.63	0.27	-0.82	-0.47
16 - Preparations of meat	0.53	0.34	0.12	0.02	-0.31
17 - Sugars & sugar confectionery	-2.27	-1.49	-2.54	-2.47	0.30
18 - Cocoa & cocoa preparations	-0.50	-0.66	-0.79	-1.06	-0.04
19 - Preps. of cereals, flour, starch etc.	-0.12	-0.40	-1.05	-1.13	-0.50
20 - Preps. of vegetables, fruits, plants	-1.20	-0.94	-1.38	-1.16	-0.23
21 - Miscellaneous edible prep.	-1.64	-1.81	-2.20	-1.97	-0.09
22 - Beverages, spirits & vinegar	0.02	0.05	-0.24	-0.57	-0.51
23 - Residues & food industry waste	-1.04	-0.71	-2.01	-2.03	0.14
24 - Tobacco & tobacco products	-3.88	2.92	3.35	5.77	3.80

Source: author's calculations, using EUROSTAT agricultural trade statistics database

Products that have been obtained positive values higher than one, indicating the rank revealed by the indices, are those belonging to chapters: 01 - live animals (8.6), 12 - oilseeds (3.8), 15 - fats and oils (2.8), 07 - vegetables (1.6), 04 - dairy products, eggs, honey (1.3), 22 - drinks and alcohols (0.92). At the same time, those products that have maintained their position in the hierarchy within the period 2006-2009, although with decreasing values of the indices, were those included in chapters 01 - live animals, 14 - other vegetable products, 10 - cereals, 12 - oil seeds and 16 - meat, while 15 - fats and oils, only until 2007.

The chapter 24 - tobacco and tobacco products, shows a significant start over since 2007, together with the products of chapter 02 - meat, in 2010, although to a lesser extent.

In the year 2010, the indices show the lowest values on the great majority of products, indicating a loss of trade advantage comparing to some valuable segments of Romania's agri-food sector that previously have proved performances.

According to the assessments, products of chapters 01 - live animals and 12 - oilseeds suffered in the year 2010 a dramatic weakening of their external performance. As well,

concerning the products of chapter 04 - milk, dairy products, whose decline has occurred since 2007, their trends indicate a continued loss of external competitiveness.

### Conclusions

The topic discussed help expand scientific approaches of assessment the potential, needs and prospects for increasing competitiveness in the agricultural sector.

Romania's foreign agricultural trade had suffered within the past two decades inflections and periods of decline under the interrelated pressures of the internal political and economical reforms, of the adaptation to the EU agricultural and trade policies and integration on the Common Market and in facing the market competition especially of more advanced economies; the changes required by adoption of the CAP have increased the pressure both, on farmers and on food industry in facing market developments.

The results indicate a disadvantage of the Romanian agricultural products, with a decreasing trend of the trade specialization indices.

The evaluations reveal that certain products with previously expressed export potential in the post-accession period, have suffered an important decline in their commercial specialization, such is the case of live animals and animal products, which, although still have positive trade balance, the net export amounts registered significant declines; the results identified similar loss for oilseeds, milk and dairy products.

### Literature

1. Banse, M., Gorton, M., Hartel, J., Hughes, G., Köckler, J., Möllman, T., Münch W. (1999): *The Evolution of Competitiveness in Hungarian Agriculture: From Transition to Accession*, Most-Most Economic Policy in Transitional Economies, Vol. 9, p. 307–318.
2. Brasili C., Fanfani, R., Rastoin, J. L. (2008): *Knowledge, Sustainability and Bioresources in the further Development of the Agri-food System*, Bologna: Ed. BUP.
3. Gorton, M., Davidova, S. (2001): *The International Competitiveness of CEEC Agriculture*, the World Economy, vol. 24, p. 185–200.
4. Kowalski, P. (2011): *Comparative Advantage and Trade Performance: Policy Implications*, OECD Trade Policy Papers, No. 121, OECD Publishing.
5. Latruffe, L. (2010): *Competitiveness, Productivity and Efficiency in the Agricultural and Agri-Food Sectors* (Working Paper, No. 30), Paris, OECD Publishing.
6. Porter, M. (1990): *The Competitive Advantage of Nations*: 20, New York: The Free Press.
7. Rusali, M. (2012): *Competitivitatea agriculturii – determinanti si inflexiuni ale performantelor externe romanesti in contextul Pietei Comune*, in *Economia agroalimentara si dezvoltarea rurala in Romania – implicatii ale PAC asupra securitatii alimentare*. Coord. - P.I. Otiman, F. Toderoiu, Elena Sima, Bucuresti, Editura Academiei, Bucuresti 2012.
8. Zaghini, A. (2003): *Trade Advantages and Specialisation Dynamics in Acceding countries* (Working Paper, No. 249), Frankfurt am Main, European Central Bank.

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