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STRUCTURE AND PERFORMANCE OF THE INTERNATIONAL AGRI-FOOD TRADE – A COMPARATIVE ANALYSIS IN THE NEW MEMBER STATES

GAVRILESCU CAMELIA¹

Abstract: *In the post-accession period, a common feature of the international agri-food trade of the new Member States was a significant increase in the volume and value of export and import flows, thus contributing to the increase in intra- and extra-Community trade. Despite these increases in total trade flows, only four of the 13 new Member States managed to record trade surpluses. This paper analyzes changes in the structure, volume, value and geographical orientation of international agri-food trade of these states, and trade performance is analyzed in terms of trade balance indicators (structure and value).*

Keywords: *agri-food trade, NMS (New Member States), trade balance*

JEL Classification: F14, Q17

INTRODUCTION

The latest EU enlargements (2004 - EU-25, 2007 - EU-27, 2013 - EU-28) have had a significant positive impact on EU agri-food trade. The value of trade has increased in real terms, keeping the EU in the top players in the world agri-food market. For all the new member states, the accession to the EU represented an extraordinary opportunity, and for Romania it meant an unprecedented expansion of its agri-food trade. The severe sanitary-veterinary and quality requirements that condition the presence on the Single Market and on international markets have been an essential incentive for the alignment of food production standards, including for new investments in processing companies in the field.

In the last two decades, which cover the pre-accession and post-accession periods, the trade policies, geographical orientation and structure of Romania's agri-food exports and imports have changed significantly. Imbalances between the actors of the agri-food supply chains have led to the emergence of areas of polarization of power in the market, and, inevitably, to important dysfunctions in the functioning of supply chains.

The expansion of Romanian trade, although very significant, was uneven in terms of exports and imports, fueling a constantly negative agri-food trade balance (with a brief exception in 2013-2014). The analysis by product groups and as a geographical orientation of trade shows significant deficits in commodities (meat, dairy products, vegetables, fruits), partially offset by significant surpluses in basic agricultural products (cereals, oilseeds), which translates into an inadequate trade structure: export of raw materials and import of processed products.

This paper aims to analyze the changes in the structure, volume, value and geographical orientation of Romania's international agri-food trade compared to some of the new neighboring Member States, as well as former countries with a centrally planned economy: Bulgaria, Czech Republic, Hungary and Poland. These elements significantly influence the presence and competitiveness of the products of the five countries studied on the EU and international markets, as well as the evolution of trade between them, taking into account that all were members of COMECON until 1991 (at the dissolution of the organization), then members of CEFTA since 1992 (Poland, Czech Republic and Hungary), respectively from 1997 (Romania) and 1999 (Bulgaria). Exit from CEFTA coincided for each of these five countries with entry into the EU.

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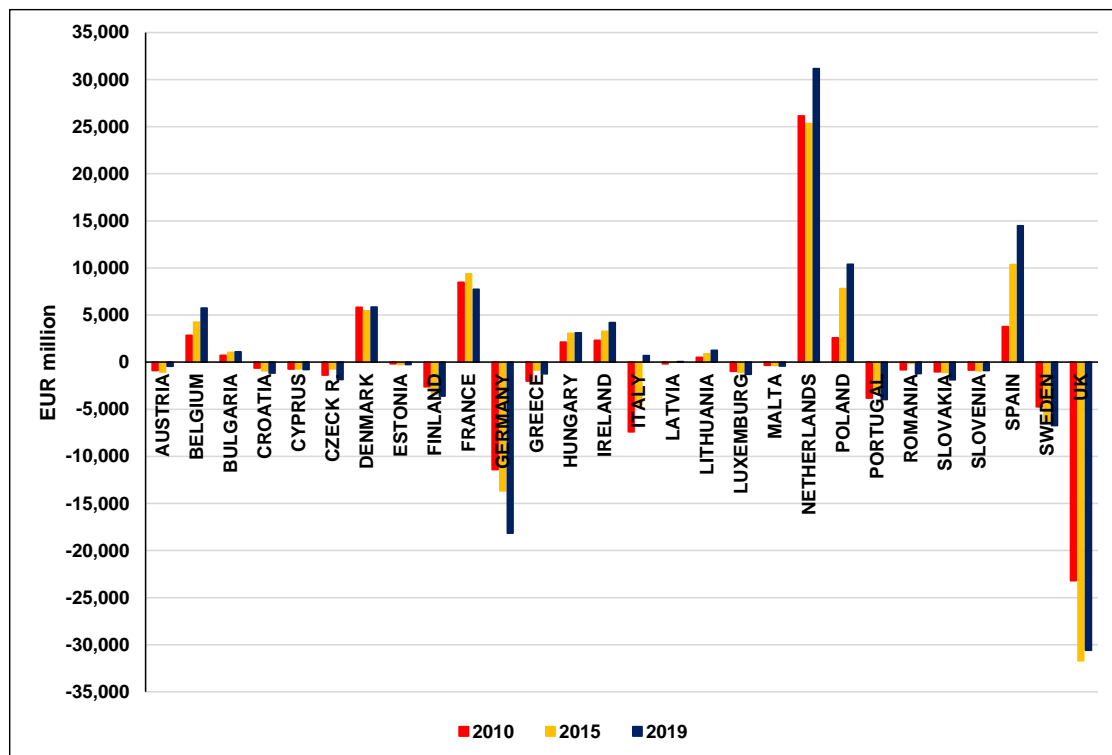
MATERIAL AND METHOD

In this paper, the analysis was made on agri-food trade flows: the value of imports and exports, and the structure by product groups of exports, imports and agri-food trade balance. For calculations, data from Comext (EU-specific trade database), included in Eurostat (HS classification, chapters 01-24) at 2 digits, were used.

RESULTS AND DISCUSSIONS

The analysis of the agri-food trade balance of EU Member States shows that in the last decade, only 10 countries have positive balances: Belgium, Bulgaria, Denmark, France, Hungary, Ireland, Lithuania, the Netherlands, Poland and Spain. (figure 1). Of these, the Netherlands stands out, with a trade surplus exceeding 30 billion euros (in 2019), double that of the next ranked (Spain). Romania is in the group of countries with agri-food trade deficit (over -2 billion euros in 2019), but far from the countries with maximum deficit - Great Britain (over -30 billion euros), respectively Germany (over -15 billion euros) all in 2019.

Figure 1 – Agri-food trade balance in EU Member States

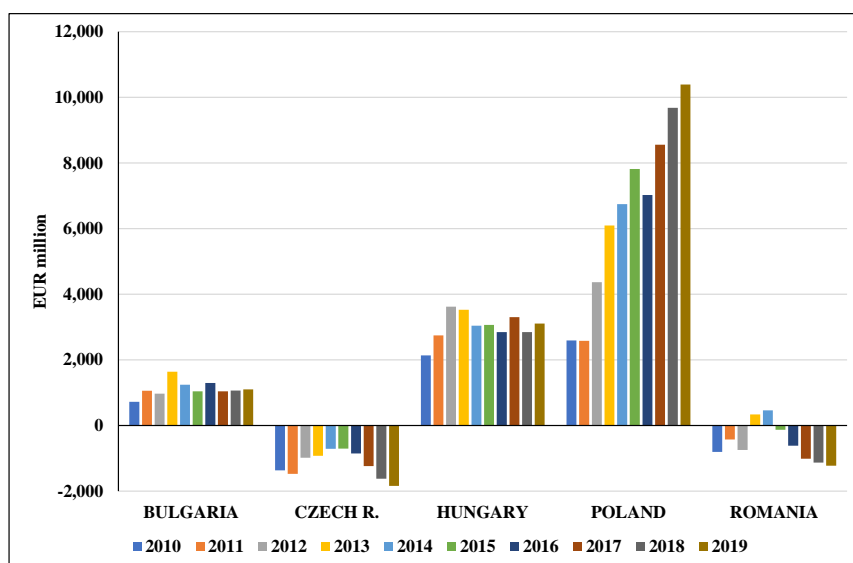


Source: calculations using Comext data

It is noteworthy that of the 13 countries that have joined the EU since 2004, only Bulgaria, Hungary, Lithuania and Poland have agri-food trade surpluses. The value of surpluses varied between 2000 and 2019 in the case of Bulgaria and Hungary (Figure 2). The surplus steadily increased in the case of Poland, while the Czech Republic and Romania showed somewhat similar variations in the trade deficit: the deficit gradually declined in the post-crisis period (2010-2015), only to increase again accentuated starting with 2016 and reaching maximum values in 2019.

Table 1 shows the dynamics of agri-food trade in the 5 new Member States studied. Compared to the last year before accession (fixed base), it is observed that Romanian exports showed the largest expansion (an increase of 8.4 times in 2019 as compared to 2006), followed by Poland, with an increase of 7.9 of the value of exports.

Figure 2 – Agri-food trade balance in 5 New Member States



Source: calculations using Comext data

Table 1 - Agri-food trade dynamics in 5 New Member States (as compared to the last pre-accession year = 1)

	2003	2006	2010	2015	2019
Romania export		1	3.6	6.9	8.4
Romania import		1	1.6	2.5	3.5
Bulgaria export		1	2.5	3.6	4.6
Bulgaria import		1	2.1	3.0	4.1
Czech R. export	1	1.8	2.7	4.8	5.0
Czech R. import	1	1.6	2.3	3.3	3.9
Hungary export	1	1.3	2.1	2.8	3.3
Hungary import	1	1.9	2.5	3.3	4.3
Poland export	1	2.2	3.4	6.0	7.9
Poland import	1	1.8	3.1	4.5	5.9

Source: calculations using Comext data

Regarding the value of imports, they increased only 3.5 times (the growth index was the lowest in the case of Romania, the lowest index among the 5 analyzed countries). Although the export growth index was much more than double the import growth index, the agri-food trade balance remained continuously negative (with a very short exception, 2013-2014).

At the time of joining the EU, Romania had a non-competitive agri-food sector, from a structural and production point of view. Romania's international trade, both general and agri-food, was also uncompetitive compared to other EU Member States, both old Member States (EU-15) and new Member States (EU-13).

Foreign and domestic capital investments in the agricultural and food sectors, as well as those made through pre-accession programs (SAPARD) and post-accession programs (NRDP - National Rural Development Programs) have resulted in significant increases in terms of volume, efficiency, and quality of agricultural and food products.

Free access to the EU Single Market has favored Romanian exports and required raising the level of food quality and safety required by EU rules. Although Romanian products have encountered various non-tariff barriers (especially in the category of phytosanitary and sanitary-veterinary ones), exports increased spectacularly in the post-accession period. At the same time,

free access to the EU Single Market has allowed unrestricted access of Community products to Romanian markets, putting pressure on less developed and less competitive domestic markets. Thus, Romanian products faced on the domestic markets a significant competition of imported products, in terms of prices (lower) and quality (higher and more diversified products). It is important to mention that there has been unfair competition from counterfeit products, which are sold at very low prices and which pose problems for Romanian producers who come to market with good quality products, but at prices that reflect the quality of raw materials and compliance with standards quality.

International trade in agri-food products reflects the efficiency and competitiveness of the domestic agri-food sector. There are a number of factors that have contributed to the increase in imports and the agri-food trade deficit.

Among the factors *intrinsic* to the sector, we should mention:

- Inadequate structure of the agricultural production sector: small farms, lack of association, poor ability to concentrate and capitalize.
- Fracturing of agri-food chains, throughout the production / collection / processing / sales chain.
- Unfavorable structure of agricultural production: the ratio between vegetable and animal production:
- Polarized structure of the food industry: the existence of very large processing enterprises, and at the opposite pole, small, local processing units - the area of medium-sized enterprises is very poorly represented.
- The development of modern retail (supermarkets and hypermarkets) meant the increase of imports, due to the lack of concentration of supply from Romanian agricultural producers.
- Lack of coherent, simple and favorable legislation for Romanian producers.

There are also a number of *social and demographic factors* which in turn have contributed to the increase in imports and the agri-food trade deficit:

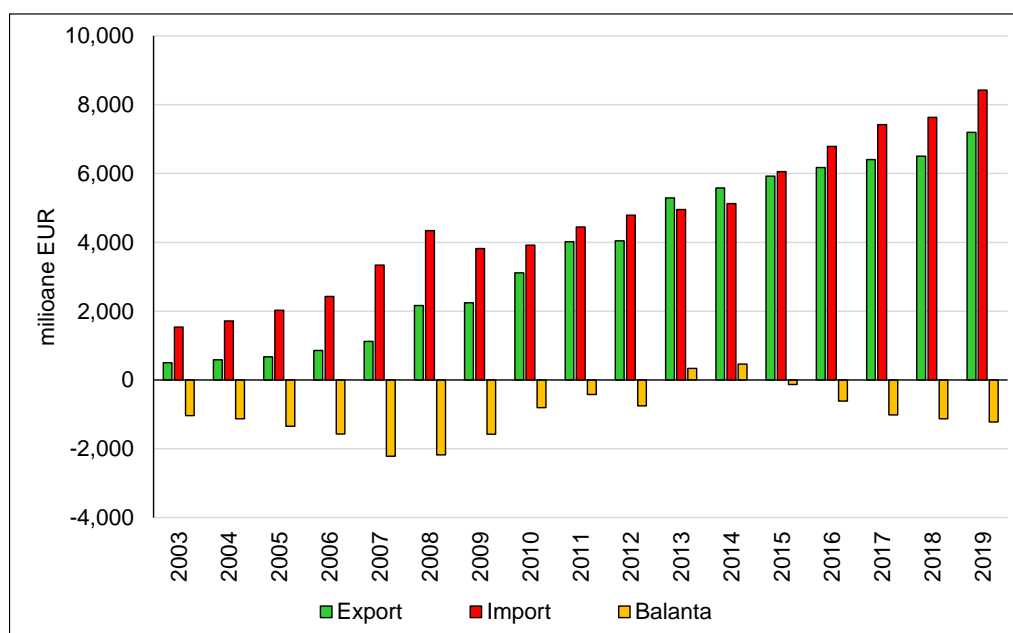
- Lack of professionalization of farmers and workers in agriculture and food industry.
- Changing in the pattern of food consumption: with the increase in household income, access to information and mobility of people, consumer demand has diversified, and refined, as increased demand for high quality products.
- De facto decline in the active and employed population in agriculture: starting from a poorly developed infrastructure and continuing with the perceived lack of opportunities in rural areas, we have witnessed in the last two decades an important phenomenon of migration (to urban) and emigration (to developed countries in the EU) of the young population (of the active age groups). To this is added the phenomenon of aging rural population.
- The increase in demand for agri-food products is also a consequence of the increase in the population's income, as well as the decrease in VAT on food products.

Figure 3 shows an overview of the total agri-food trade of Romania in the period 2003-2019. There is a steady upward trend in both the value of exports and imports. The maximum values of the trade deficit were recorded in the first two years after accession (2007-2008), when we witnessed a process of adaptation to the new "rules of the game"; similar phenomena occurred in the other new Member States immediately after their accession to the EU.

By separating the agri-food trade by major destinations / origins, the image changes. Thus, one can see that in trade with the EU, the balance has been constantly negative (over 500 million euros per year). In relation to non-EU countries, since 2010, the balance has been consistently positive. This is due to the penetration of the Mediterranean and Middle East markets, where Romania exports large quantities of cereals, oilseeds and live animals, partially compensating the trade deficit registered on the relationship with the EU (Gavrilescu et al., 2017; Gavrilescu, 2018).

Exports are mainly oriented towards the EU (their share varied between 60-79%); in the last 7 years they stabilized, around an average of approx. 66% (figure 4).

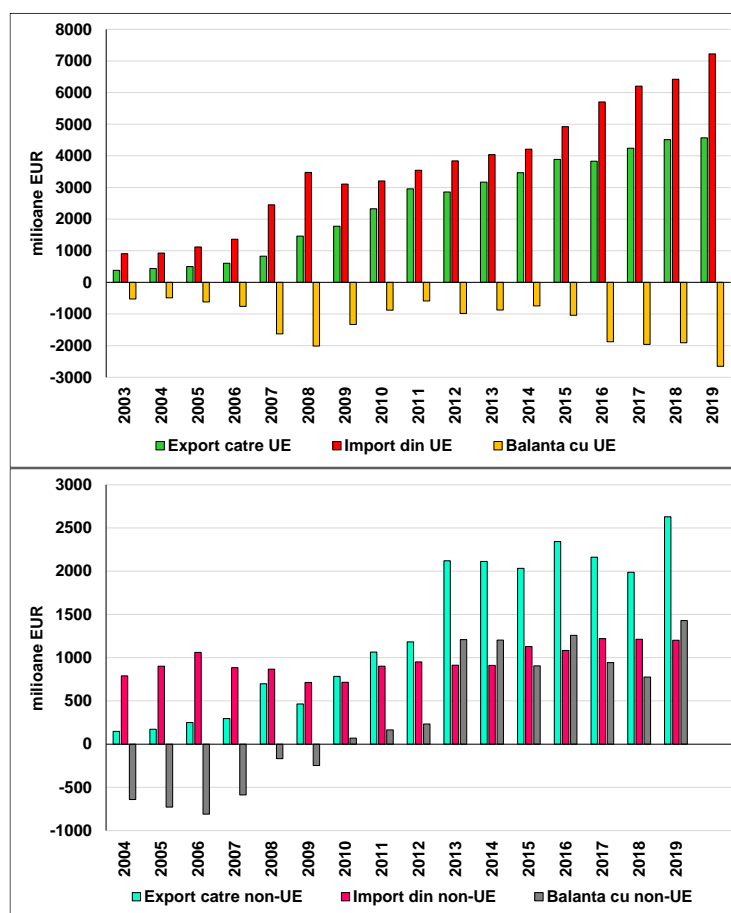
Figure 3 – Romanian total agri-food trade (2003-2019)



Source: calculations using Comext data

On the other hand, due to the principle of Community preference, the EU is the main source of imports; if before accession the share of EU imports was around 55%, after accession it increased and stabilized somewhere between 80-86% (figure 4).

Figure 4 – Romania: agri-food trade with EU and non-EU countries



Source: calculations using Comext data

In order to understand and analyze in comparison the results of the Romanian agri-food trade with those of the other (selected) new Member States, we cannot limit ourselves only to the commercial values, but we must also have an image of their agri-food sector. Table 2 presents a selection of relevant indicators for the 5 states analyzed.

Table 2 – Selected indicators – comparison among the 5 analyzed Countries

Item	Year	Bulgaria	Czech R.	Hungary	Poland	Romania
Population (1000 persons)	2019	7,000	10,649	9,772	37,972	19,414
GVA in agriculture, forestry and fishing (% of total GVA)	2019	3.7	2.1	4.1	2.5	4.5
No. of agricultural holdings, o.w.	2016	202,720	26,530	430,000	1,410,700	3,422,030
UAA < 5 ha (%)	2016	82.7	18.7	81.4	54.3	91.8
Average area per holding (ha UAA)	2016	22.0	130.2	10.9	10.2	3.7
Agriculture in % of total employment	2019	6.5	2.6	4.7	9.0	19.1
General trade balance (EUR million)	2019	2,078	13,421	5,287	27,816	-8,615
Agri-food trade balance (EUR million)	2019	1,165	-1,921	3,129	10,241	-1,183
Crop output (% of total)	2019	74.9	59.2	61.0	47.6	77.0
Animal output (% of total)	2019	25.1	40.8	39.0	52.4	23.0

Source: ec.europa – country factsheets

It should be noted first that Romania has by far the largest number of farms, not only among the 5 countries, but throughout the EU. Thus, it results in a very small average size of the farm (3.7 ha), compared to Hungary and Poland (which have an average area almost 3 times larger). We also see the largest share of small farms (less than 5 ha); Bulgaria and Hungary have a similar structure in this respect. The very large share of the population employed in agriculture should be emphasized: 19.1% in Romania, compared to 4.7% in Hungary, 6.5% in Bulgaria and 9% in Poland.

The ratio between vegetable and animal production in Romania is similar to that in Bulgaria, both countries having a predominantly vegetable (cereal) orientation of agricultural production. The largest share of animal production in Poland and Hungary is found in their meat exports.

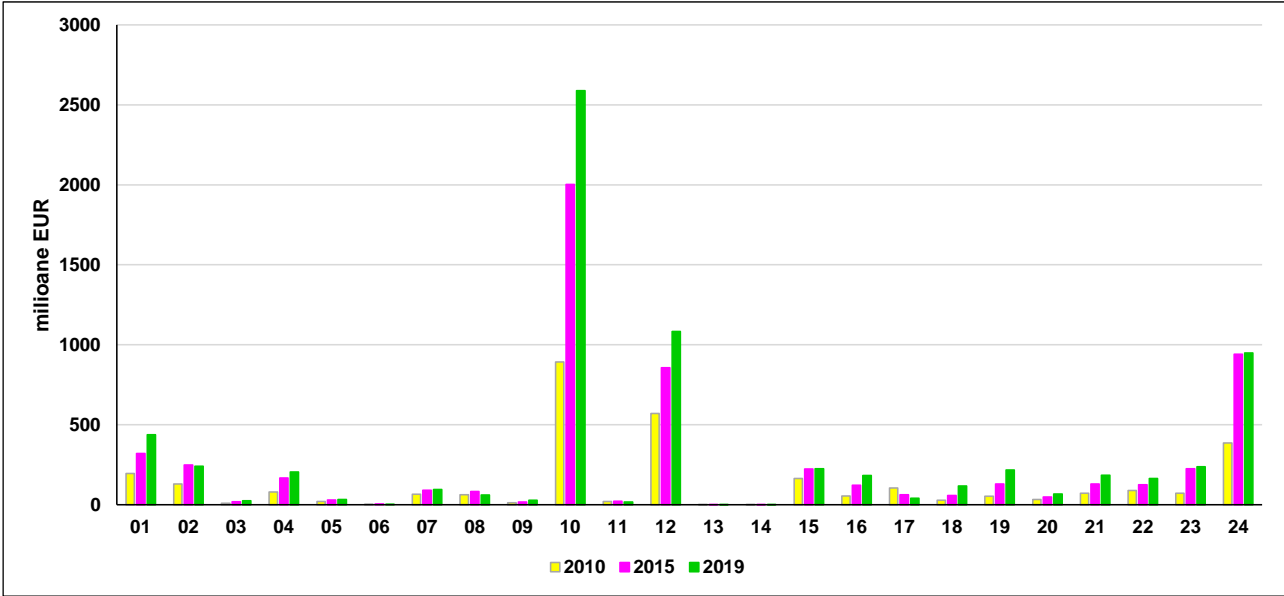
In terms of general trade, Romania is the only country analyzed that has a negative overall balance. In the agri-food trade, Bulgaria, Hungary and Poland have positive balances, while Czech Republic and Romania have negative balances.

Analyzing the structure of agri-food exports by product groups, it is observed in the case of Romania an accentuated imbalance between the product groups: massive exports of cereals (HS-10), oilseeds (HS-12), tobacco products (HS-24) and live animals (HS-01) (figure 5).

Figure 6 shows the export structures of Bulgaria and the Czech Republic, and Figure 7 shows the exports of Hungary and Poland.

Bulgaria is also a major exporter of cereals and oilseeds, while the Czech Republic has a much more diversified structure: predominant dairy products (HS-04) and food industry products (HS 15-24).

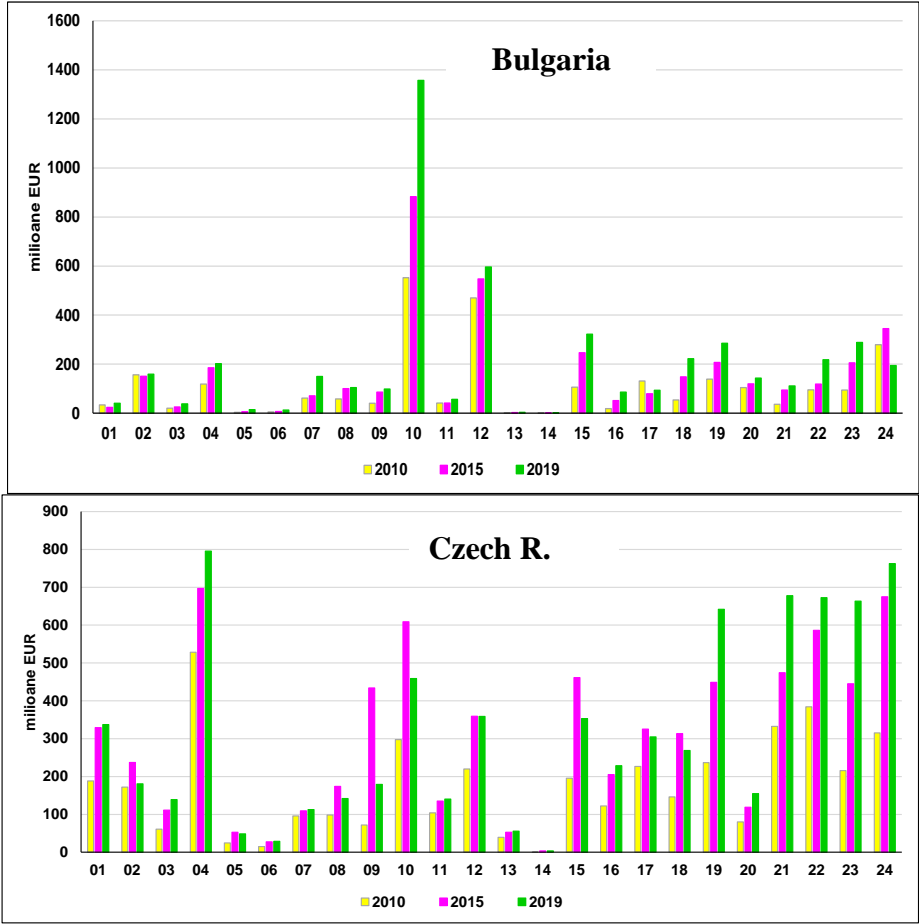
Figure 5 – Structure of the Romanian agri-food exports by product groups



Notes: chapters 01-24 in Combined Nomenclature (which include all agri-food products): **01-live animals**; 02-meat & offal; 03-fish & seafood; 04-milk, dairy products, eggs & honey; 05-other animal products; 06-live plants; 07-vegetables; 08-fruit; 09-coffee, tea & spices; **10-cereals**; 11-products of the milling industry; **12-oilseeds**; 13-lacs, gums & resins; 14-other crop products; 15-oils & fats; 16-meat & fish preparations; 17-sugar & confectionery products; 18-cocoa & cocoa products; 19-bakery & pastry products; 20-vegetables & fruit preparations; 21-miscellaneous food preparations; 22-beverages; 23-animal feed; **24-tobacco & tobacco products**.

Source: calculations using Comext data

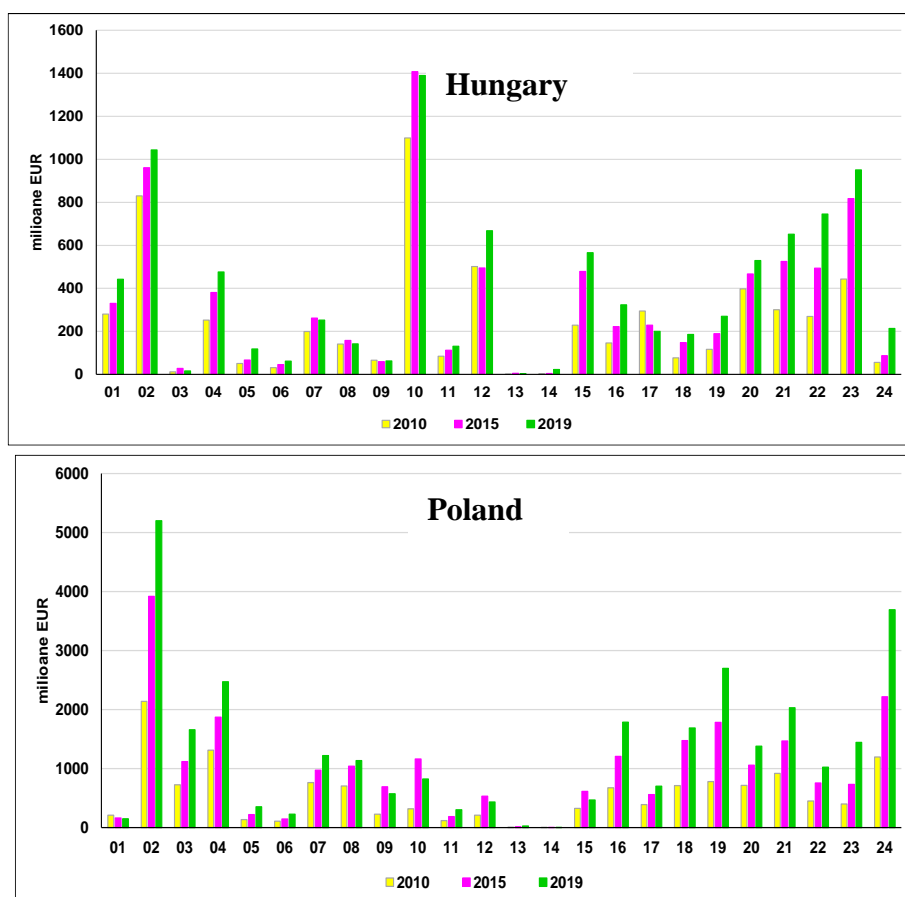
Figure 6 – Structure of the Bulgarian and Czech agri-food exports by product groups



Source: calculations using Comext data

Notes: idem figure 5

Figure 7 - Structure of the Hungarian and Polish agri-food exports by product groups



Source: calculations
using Comext data

Notes: idem figure 5

Hungary is also an exporter of cereals, but also mass-exports products of animal origin: meat (HS-02), dairy products (HS-04), and processed products: canned vegetables and fruits (HS-20), various food preparations (HS-21) and wines (HS-22).

Poland's exports have a completely different structure: animal products predominate: meat (HS-02), fish (HS-03), dairy products (HS-04), and a wide range of processed products (HS 16-24). There are low exports of cereals and oilseeds.

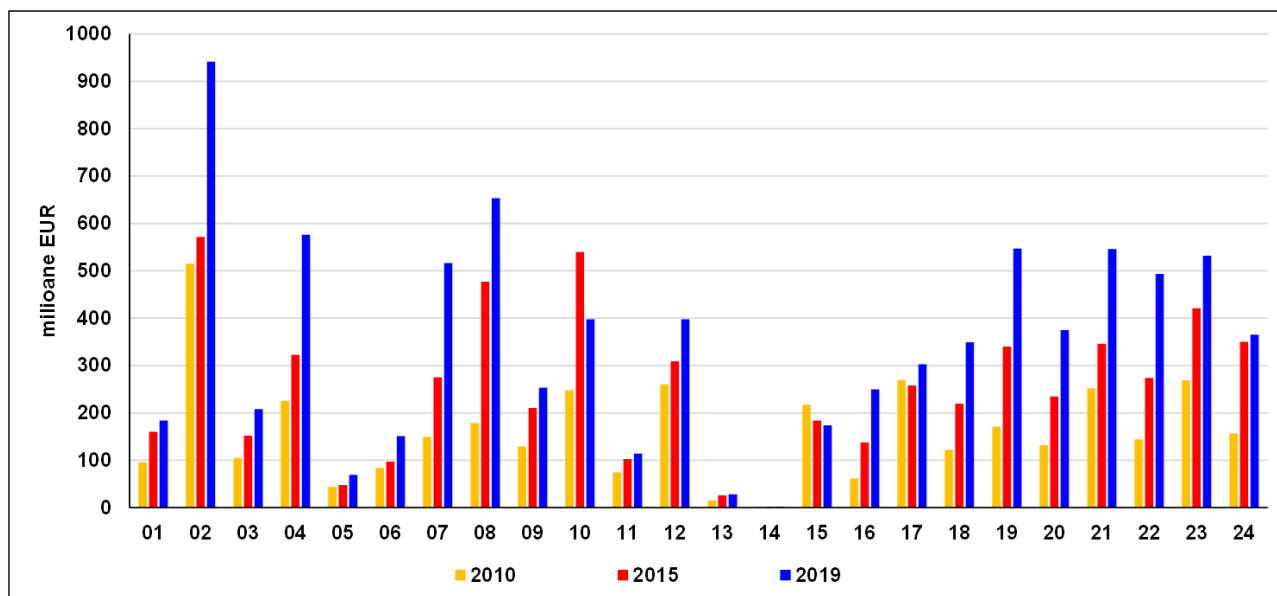
The structure of Romanian agri-food imports is much more diversified (figure 8). Imports of meat (HS-02), dairy products (HS-04), vegetables (HS-07), fruits (HS-08) predominate. Significant imports of processed products (HS-15-24) are also recorded: bakery and pastry products (HS-19), canned vegetables and fruits (HS-20), various food preparations (HS-21), beverages (HS - 22) and animal feed (HS-23), including soybean meal and pet food.

Bulgarian and Czech imports have relatively similar structures (Figure 9), with a high share of processed products, but also significant imports of meat (HS-02) and dairy products (HS-04).

Hungary and Poland also have similar import structures (Figure 10). In the case of all 5 countries, the presence of a very diverse range of imported products is observed as a common feature, as opposed to exports which are generally much more concentrated on a narrower range of products.

It should be noted that all 5 countries have high values of imports fruit and negative balances, but these results come from the high value of imports of Mediterranean (especially citrus) and tropical (mainly bananas) fruits.

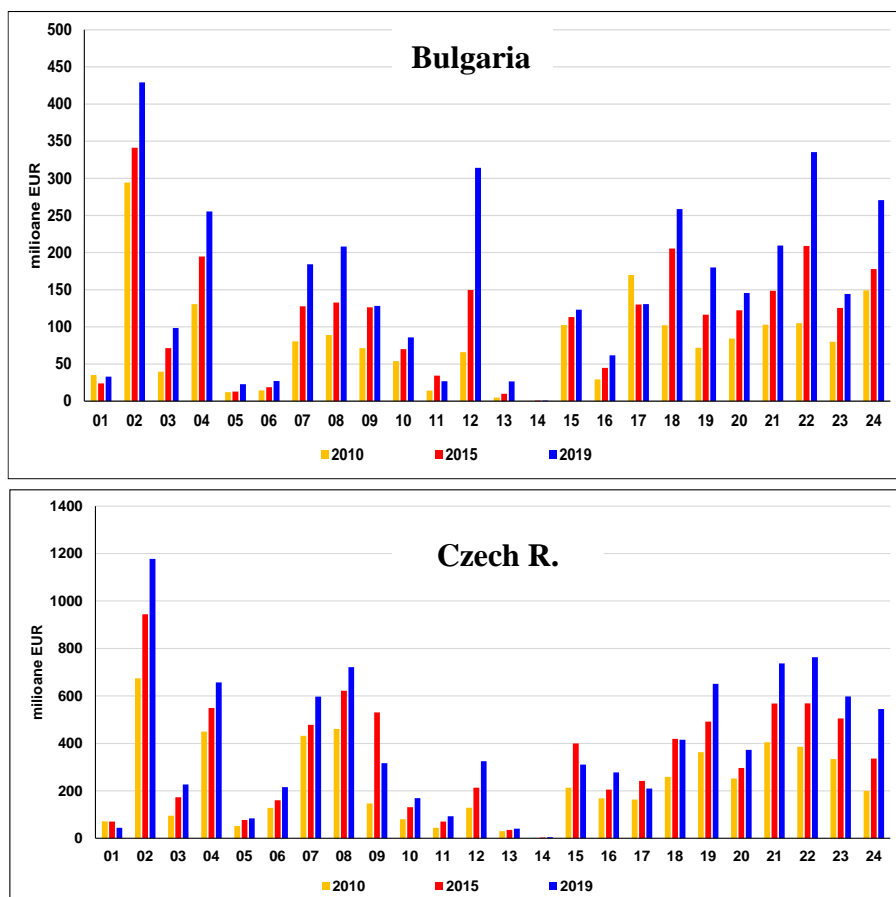
Figure 8 - Structure of the Romanian agri-food imports by product groups



Notes: chapters 01-24 in Combined Nomenclature (which include all agri-food products): 01-live animals; 02-meat & offal; 03-fish & seafood; 04-milk, dairy products, eggs & honey; 05-other animal products; 06-live plants; 07-vegetables; 08-fruit; 09-coffee, tea & spices; 10-cereals; 11-products of the milling industry; 12-oilseeds; 13-lacs, gums & resins; 14-other crop products; 15-oils & fats; 16-meat & fish preparations; 17-sugar & confectionery products; 18-cocoa & cocoa products; 19-bakery & pastry products; 20-vegetables & fruit preparations; 21-miscellaneous food preparations; 22-beverages; 23-animal feed; 24-tobacco & tobacco products.

Source: calculations using Comext data

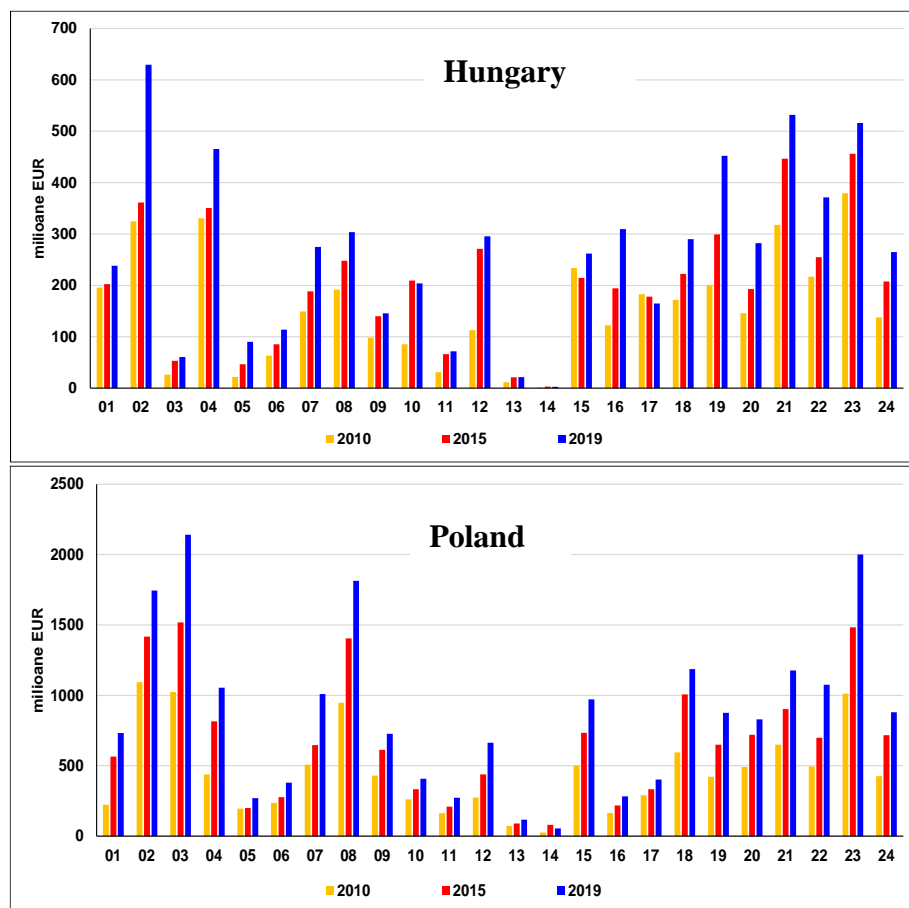
Figure 9 - Structure of the Bulgarian and Czech agri-food imports by product groups



Source: calculations using Comext data

Notes: idem figure 5

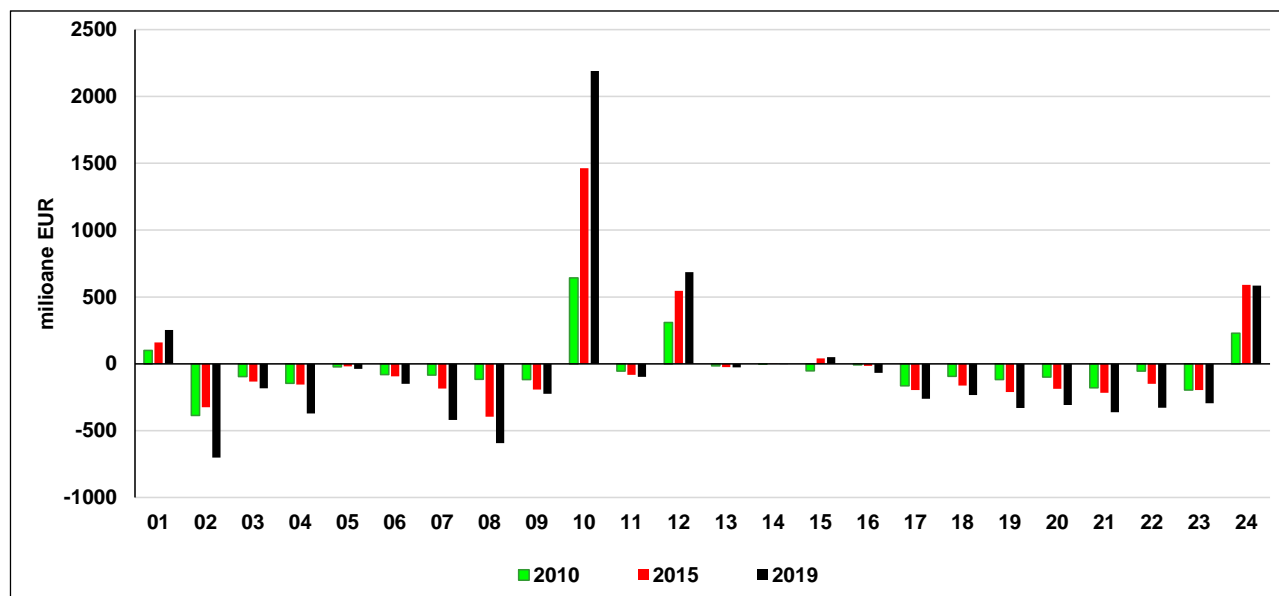
Figure 10 Structure of the Hungarian and Polish agri-food imports by product groups



Source: calculations using Comext data

Notes: idem figure 5

Figure 11 – Structure of the Romanian agri-food trade balance by product groups



Notes: chapters 01-24 in Combined Nomenclature (which include all agri-food products): 01-live animals; 02-meat & offal; 03-fish & seafood; 04-milk, dairy products, eggs & honey; 05-other animal products; 06-live plants; 07-vegetables; 08-fruit; 09-coffee, tea & spices; 10-cereals; 11-products of the milling industry; 12-oilseeds; 13-lacs, gums & resins; 14-other crop products; 15-oils & fats; 16-meat & fish preparations; 17-sugar & confectionery products; 18-cocoa & cocoa products; 19-bakery & pastry products; 20-vegetables & fruit preparations; 21-miscellaneous food preparations; 22-beverages; 23-animal feed; 24-tobacco & tobacco products.

Source: calculations using Comext data

For Romania (2019), there are 4 groups of products with a significant trade surplus: cereals (HS-10), over EUR 2.3 billion; oilseeds (HS-12), EUR 686 billion; tobacco and tobacco products (HS-24) (EUR 584 million) and live animals (EUR 253 million) (Table 3). Cumulatively, they represent over 70% of the total value of Romanian agri-food exports. This very high concentration of exports on a small group of products is unfavorable due to the vulnerability to fluctuations in international markets.

Out of 24 groups of agri-food products, Romania shows trade deficits in 19 groups, compared to only 9 groups in the case of Hungary, 11 groups in Poland, 14 groups in the Czech Republic and 16 in the case of Bulgaria.

For Romania, the largest deficits occur in meat (HS-02) (over 700 million euros), fruits (HS-08) (over 590 million euros), vegetables (EUR 420 million), dairy products (EUR 370 million), food preparations (HS-21) (EUR 362 million). Significant deficits (over 200 million euros) are observed for most processed products.

Table 3 –Agri-food trade balance by product groups (2019) – comparison (EUR million)

HS code	Product group	Bulgaria	Czech R.	Hungary	Poland	Romania
1	Live animals	7,78	292,95	203,94	-583,94	252,99
2	Meat	-269,90	-997,10	414,56	3,453,12	-701,09
3	Fish	-60,10	-87,59	-44,93	-486,00	-183,46
4	Milk & dairy	-53,52	138,87	11,18	1,413,91	-370,60
5	Other animal products	-8,00	-35,07	27,92	81,49	-37,11
6	Live plants	-14,53	-186,84	-51,89	-152,45	-148,78
7	Vegetables	-34,89	-484,20	-22,25	209,02	-420,26
8	Fruit	-103,81	-579,20	-161,29	-678,89	-592,62
9	Coffee & tea	-29,57	-137,35	-82,50	-153,51	-224,98
10	Cereals	1271,16	289,97	1185,62	416,22	2190,80
11	Milling products	29,82	47,05	59,25	27,58	-96,84
12	Oilseeds	281,96	34,33	372,27	-230,57	686,37
13	Lacs & resins	-23,46	15,12	-18,05	-91,83	-26,85
14	Other crop products	-0,27	-1,78	20,09	-51,49	-0,48
15	Oils & fats	199,53	42,84	303,71	-505,30	50,60
16	Meat preparations	24,20	-49,17	13,71	1501,91	-66,80
17	Sugar & confectionery	-37,05	95,16	35,36	296,65	-262,04
18	Cocoa & products	-36,15	-146,98	-103,84	499,34	-232,98
19	Bakery & pastry prod.	105,41	-8,76	-182,12	1,822,72	-330,71
20	Vegetable & fruit preparations	-2,89	-218,10	247,16	548,80	-307,66
21	Food preparations	-98,07	-59,70	119,77	852,91	-362,05
22	Beverages	-116,96	-91,34	374,77	-52,18	-329,26
23	Animal feed	144,02	65,77	434,73	-559,49	-295,17
24	Tobacco & products	-76,04	217,54	-51,20	2,808,64	584,35
	Total agri-food products	1098,67	-1843,59	3105,96	10.386,64	-1224,64

Source: calculations using Comext data

CONCLUSIONS

In the post-accession period, all 5 analyzed countries (Bulgaria, the Czech Republic, Hungary, Poland and Romania) registered a significant expansion of their agri-food trade; of all, Romania registering the largest relative increase in the value of exports (of 8.5 times in 2019 compared to 2006).

In the agricultural sector, Romania has the lowest average farm area (3.7 ha) and the largest share of employment in agriculture (19.1%), both negatively influencing productivity and efficiency.

In the trade area, Romania and the Czech Republic show negative agri-food balances, while Bulgaria, Hungary and Poland have managed to maintain positive balances in the post-accession period.

Romania's exports are very concentrated - a narrow range of products (4 product groups account for 70% of total exports), which causes a significant vulnerability to disruption of international markets. Exports consist mainly of agricultural basic products (cereals, oilseeds, live animals). The range of imported agri-food products is much wider, a feature similar to the other analyzed countries.

Regarding the agri-food trade balance, Romania has an unbalanced structure; only 5 out of 24 product groups have a positive balance, compared to at least 8 groups in the other countries.

Romania is a net importer of basic products: meat, dairy products, vegetables, fruits, processed products, while: Hungary and Poland are net exporters of meat, Poland net exporter of vegetables, Czech Republic, Hungary and Poland net exporters of dairy products, Hungary and Poland net exporters of food and canned vegetables and fruits.

The future targets of Romania's agri-food trade should be: diversification of exports; reducing the share of processed products in imports and increasing it in exports; promoting exports of high quality products (PDO, PGI, TSG), organic products and high quality wines; reduction of staple food imports.

However, these targets cannot be achieved without major restructuring in the agricultural production sector and the food industry.

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