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Importance and competitive advantage of the European Union countries in trade in agri-food products

Abstract. The aim of the paper was to show the importance and competitive advantage of the EU countries in trade in agri-food products. It was proved that old member states of the EU, especially Holland, Germany and France, play a dominant role in the agri-food trade. Although agri-food products occupy an important position in the total trade structure of the Central and East European countries, their significance in the exchange of agri-food products in the Community is incomparably smaller.

Key words: agri-food products, exports, imports, export specialisation, intensity of exports and imports, intra-EU trade, extra-EU trade.

Introduction

In the conditions of market economy, competing with other entities is understood as mutual rivalry aimed at gaining advantage related with functioning on the domestic and international market [Misala 2007]. It is an inseparable element of functioning of each business entity and at the same time it is one of the most essential economic mechanisms. Economic sciences usually define competition as a process of rivalry between business entities in the market, which pursue their goals by presentation of a more favourable offer than other market participants in terms of price, quality or other traits affecting one's decision about the transaction [Kamerschen, McKenzie & Nardinelli 1991]. The range of competition may be diversified. It is possible to talk about competing on a regional, national or international scale [IMD… 1997]. Due to the fact that competitiveness is by nature a relative, valuating notion which defines a certain desirable state, it is usually referred to the international market and evaluated on it. In this context, a high significance in creating competitive advantage and increasing the level of employment and people's income[2] is attributed to the results achieved in foreign trade. As Ezeala-Harrison [1999] notes, 'the export of uncompetitive products, which are not accepted by consumers on an international scale, makes achievement of a large share in the global market impossible and in consequence, it makes an increase in income and employment impossible'. These two determinants of competitiveness are also stressed in the definition at the mezoeconomic level. According to Singh [1977] and Devine [1996], an efficient sector which is simultaneously competitive, is the one that is able not only to satisfy the demand on the domestic market, but also on international markets. At the same time, it can obtain funds to

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[2] In the research on competitiveness based on the economic growth theory, the international competitiveness of a country is defined as 'the potential to achieve the economic policy goals, especially the income and employment increase, simultaneously maintaining balance of payment transactions' [Fagerberg 1988].

cover necessary import expenses and to maintain a socially acceptable level of production, employment and exchange rate.

Definitions of competitiveness deriving from the international trade theory also provide a clear reference to the position of a country in the global economy or in the economy of a particular region and to the results achieved in foreign trade. They define competitiveness as the ability to maintain or increase market shares [van Duren, Martin & Westgren 1991; Lubiński 1995; Kennedy et al. 1997; Pitts & Lagnevik 1998]. They list such measures of assessment of competitiveness level as the balance of trade, terms of trade, relative prices or shares in the world trade or regional trade. In the light of the abovementioned theories, it is possible to decide that the international competitive position of an agri-food sector can be assessed on the basis of the home country under analysis significance in the regional or world trade in agri-food products. Hence, the aim of the paper is to show the importance and competitive advantage of the EU countries in trade in agri-food products.

Material and research method

This study uses the most recent available statistics from the resources of the Statistical Office of the European Communities (Eurostat). The analysis compares the shares of individual countries in trade in the EU agri-food products, the intensity of exports and imports of agri-food products assessed on the basis of their trade value per hectare of utilised agricultural area (UAA) and export specialisation measured by means of the specialisation index value (SI). The export specialisation index (SI) compares the share of product *i* in the *k* country's exports with the share of this product in the world (*w*) or regional export:

$$SI_k = \frac{X_{ik}}{X_k} : \frac{X_{iw}}{X_w} \tag{1}$$

High values of the index are considered to be desirable. Otherwise, it is possible to draw a conclusion about an unsatisfactory competitiveness of a given economy or its sector [Jagiełło 2003].

Importance of the EU countries in the intra- and extra-EU trade in agri-food products

The old member states of the Community play a dominant role in the EU foreign trade in agri-food products. In 2011 they represented about 90% of the total turnover in this group of products (Table 2). Holland, Germany and France were the biggest exporters and importers of agri-food products both in the intra-EU exchange and in the trade with third countries. In 2011, Holland exported more than 73.5 EUR billion worth of agri-food products, Germany gained a revenue 60.4 EUR billion on their exports and France attained 57.2 EUR billion (Table 1). These values corresponded to about 18%, 15% and 14% of the total agri-food exports in the Community (Table 2). In that year, Germany had the highest import expenses, as it paid 74.1 EUR billion to purchase foreign food which was nearly 18% of the total unionist imports of the kind. Holland and France spent 48.4 EUR billion and 45.1 EUR billion on these imports respectively. This corresponded to nearly 12% and 11% shares in the total value of agri-food products imported to the EU.

Italy, Spain and Belgium also noted intensive trade exchange in the agri-food sector. Its turnover ranged in these countries between 29 and 39 EUR billion, which amounted to about 7-9% of the exports and imports value of this group of products from/to the EU. Apart from them, the United Kingdom was also a significant importer of agri-food products, as it spent more than 46 EUR billion to purchase agri-food products abroad. It is necessary to note that Holland was the largest net exporter of agri-food products in the Community and generated a surplus of 25.2 EUR billion in the balance of trade. France, Spain and Denmark were the most significant countries among the other largest net exporters. On the other hand, the United Kingdom was the largest net importer, as it generated a deficit of 23.8 EUR billion in the agricultural foreign trade in 2011. The UK was followed by Germany (13.7 EUR billion deficit), Italy (8.5 EUR billion) and Sweden (5.5 EUR billion).

Of the new member states, Poland was the most significant in the structure of exports and imports of agri-food products from/to the EU. However, its share in the total turnover of the Community reached only 3.7% of exports and 3% of imports. The role of the other countries from the region of Central and Eastern Europe as well as Cyprus and Malta was marginal and except for the Czech Republic and Hungary their share in the trade did not exceed 1%.

It is worth noting that intra-EU turnover prevails in the agri-food trade in the EU member states. It is also noteworthy that a particular significance is ascribed to the intra-EU exchange in the countries of Central and Eastern Europe. Except for Lithuania, Latvia and Estonia, the share of intra-EU exports in the total exports value was higher than 70% in this region. Apart from Slovenia and Romania, the share of intra-EU food imports in the total imports value reached more than 80%. It is necessary to remember that reaching higher stages in the process of European integration contributes to the growth of mutual exchange between the Community member states, but simultaneously it may have influence on decreased dynamics of external trade. In view of those facts it is possible to state that the of the countries with high economic potential, which are characterised by competitive advantage in regional global markets. Holland, Germany, France, the United Kingdom, Italy, Spain and Belgium can be included in this group, because in 2011 they generated more than 75% of the total value of agri-food trade in the Community.

Table 1. Intra- and extra-EU trade in agri-food products in 2011, EUR million

Country	Intra-EU trade					Extra-EU trade					Total trade		
	exports		imports		balance	exports		imports		balance	exports	imports	balance
	EUR million	share in total exports	EUR million	share in total imports	EUR million	EUR million	share in total exports	EUR million	share in total imports	EUR million	EUR milion		
Austria	7 739	78.7	8 858	85.7	-1 119	2 099	21.3	1 483	14.3	616	9 838	10 341	-503
Belgium	27 060	86.3	21 952	74.9	5 108	4 301	13.7	7 362	25.1	-3 061	31 361	29 314	2 047
Bulgaria	2 444	74.0	1 819	80.5	625	857	26.0	441	19.5	416	3 301	2 260	1 041
Cyprus	152	62.0	776	79.6	-624	93	38.0	199	20.4	-106	245	975	-730
Czech Republic	4 510	91.8	5 883	92.8	-1 373	403	8.2	458	7.2	-55	4 913	6 341	-1 428
Denmark	11 477	70.5	7 390	68.5	4 087	4 792	29.5	3 397	31.5	1 395	16 269	10 787	5 482
Estonia	720	69.4	1 146	92.6	-426	317	30.6	91	7.4	226	1 037	1 237	-200
Finland	898	55.2	3 463	79.2	-2 565	728	44.8	909	20.8	-181	1 626	4 372	-2 746
France	38 144	66.7	35 472	78.6	2 672	19 038	33.3	9 669	21.4	9 369	57 182	45 141	12 041
Germany	47 101	78.0	55 783	75.3	-8 682	13 299	22.0	18 281	24.7	-4 982	60 400	74 064	-13 664
Greece	3 123	73.3	4 886	78.2	-1 763	1 140	26.7	1 365	21.8	-225	4 263	6 251	-1 988
Holland	59 149	80.4	27 819	57.5	31 330	14 385	19.6	20 554	42.5	-6 169	73 534	48 373	25 161
Hungary	5 720	82.5	3 855	90.9	1 865	1 215	17.5	386	9.1	829	6 935	4 241	2 694
Ireland	7 033	78.5	5 473	87.3	1 560	1 928	21.5	794	12.7	1 134	8 961	6 267	2 694
Italy	20 631	68.5	28 017	72.5	-7 386	9 499	31.5	10 634	27.5	-1 135	30 130	38 651	-8 521
Latvia	898	59.0	1 551	89.3	-653	625	41.0	185	10.7	440	1 523	1 736	-213
Lithuania	1 960	58.4	2 315	83.5	-355	1 394	41.6	456	16.5	938	3 354	2 771	583
Luxem-bourg	929	97.1	1 809	95.4	-880	28	2.9	88	4.6	-60	957	1 897	-940
Malta	37	25.2	441	88.4	-404	110	74.8	58	11.6	52	147	499	-352
Poland	11 680	78.0	10 041	81.1	1 639	3 294	22.0	2 338	18.9	956	14 974	12 379	2 595
Portugal	3 310	68.9	6 571	75.5	-3 261	1 491	31.1	2 138	24.5	-647	4 801	8 709	-3 908
Romania	2 897	72.6	3 524	79.6	-627	1 095	27.4	903	20.4	192	3 992	4 427	-435
Slovakia	2 753	96.3	3 554	97.1	-801	106	3.7	107	2.9	-1	2 859	3 661	-802
Slovenia	948	71.2	1 445	63.4	-497	384	28.8	835	36.6	-451	1 332	2 280	-948
Spain	25 364	76.8	17 442	60.2	7 922	7 672	23.2	11 521	39.8	-3 849	33 036	28 963	4 073
Sweden	4 565	74.1	7 714	66.4	-3 149	1 597	25.9	3 903	33.6	-2 306	6 162	11 617	-5 455
United Kingdom	14 321	64.3	32 231	70.0	-17 910	7 952	35.7	13 822	30.0	-5 870	22 273	46 053	-23 780
EU-15	270844	75.1	264880	71.4	5 964	89 949	24.9	105920	28.6	-15 971	360 793	370 800	-10 007
EU-12	34 719	77.8	36 350	84.9	-1 631	9 893	22.2	6 457	15.1	3 436	44 612	42 807	1 805
EU-27	305563	75.4	301230	72.8	4333	99842	24.6	112377	27.2	-12535	405405	413607	-8202

Source: [ComExt-Eurostat… .2012].

Table 2. Shares in intra- and extra-EU trade in agri-food products in 2011, %

Country	Intra-EU trade		Extra-EU trade		Total trade	
	exports	imports	exports	imports	exports	imports
Austria	2.5	2.9	2.1	1.3	2.4	2.5
Belgium	8.9	7.3	4.3	6.6	7.7	7.1
Bulgaria	0.8	0.6	0.9	0.4	0.8	0.5
Cyprus	0.0	0.3	0.1	0.2	0.1	0.2
Czech Republic	1.5	2.0	0.4	0.4	1.2	1.5
Denmark	3.8	2.5	4.8	3.0	4.0	2.6
Estonia	0.2	0.4	0.3	0.1	0.3	0.3
Finland	0.3	1.1	0.7	0.8	0.4	1.1
France	12.5	11.8	19.1	8.6	14.1	10.9
Germany	15.4	18.5	13.3	16.3	14.9	17.9
Greece	1.0	1.6	1.1	1.2	1.1	1.5
Holland	19.4	9.2	14.4	18.3	18.1	11.7
Hungary	1.9	1.3	1.2	0.3	1.7	1.0
Ireland	2.3	1.8	1.9	0.7	2.2	1.5
Italy	6.8	9.3	9.5	9.5	7.4	9.3
Latvia	0.3	0.5	0.6	0.2	0.4	0.4
Lithuania	0.6	0.8	1.4	0.4	0.8	0.7
Luxembourg	0.3	0.6	0.0	0.1	0.2	0.5
Malta	0.0	0.1	0.1	0.1	0.0	0.1
Poland	3.8	3.3	3.3	2.1	3.7	3.0
Portugal	1.1	2.2	1.5	1.9	1.2	2.1
Romania	0.9	1.2	1.1	0.8	1.0	1.1
Slovakia	0.9	1.2	0.1	0.1	0.7	0.9
Slovenia	0.3	0.5	0.4	0.7	0.3	0.6
Spain	8.3	5.8	7.7	10.3	8.1	7.0
Sweden	1.5	2.6	1.6	3.5	1.5	2.8
United Kingdom	4.7	10.7	8.0	12.3	5.5	11.1
EU-15	88.6	87.9	90.1	94.3	89.0	89.7
EU-12	11.4	12.1	9.9	5.7	11.0	10.3
EU-27	100.0	100.0	100.0	100.0	100.0	100.0

Source: own calculations on the basis of data from Table 1.

Agri-food foreign trade intensity and export specialisation in the EU countries

In 2011, Holland and Belgium were characterised by the highest intensity of agri-food trade per hectare of UAA (Table 3). The value of exports of agri-food products in these countries reached 38.4 EUR thousand per hectare of UAA and 22.8 EUR thousand per hectare of UAA respectively, i.e. about 16 and 10 times more than the average value in the EU countries. On the basis of the SI values, it is possible to conclude that Holland realised export specialisation in agri-food products and the significance of its exports volume in the overall commodity trade was 70% higher than the average value in the Community countries (SI=1.7; Table 3). The imports value of agri-food products reached in Holland 25.3 EUR thousand per hectare of UAA and in Belgium it was 21.3 EUR thousand per hectare of UAA, so it was more than 10 times and nearly 9 times higher than the average value in the EU countries respectively.

Only Malta had more intensive imports of agri-food products due to its small area of UAA. In 2011, the expenses on agri-food products purchased abroad reached there as much as 48.9 EUR thousand per hectare of UAA and it was 20 times more than the average value in the EU countries. It is necessary to note that imports of agri-food products to this country was a necessity and it resulted from the absence of possibility to satisfy the internal demand with domestic production. International tourism is a significant sector of Malta's national economy, whereas agricultural production can chiefly be found on terraced slopes and irrigated lowland, where cereals, vegetables and citrus fruit are grown and cattle and goats are bred. Due to the poor quality of soil and a fresh water shortage, most agri-food products are imported from continental Europe. In consequence, this country did not undertake export specialisation in agri-food products and the share of its exports in the total commodity trade was 50% lower than the Community average (SI=0.5).

Denmark, Cyprus and Greece were distinguished for their highest level of export specialisation in the EU (SI=2 or SI=2.1). These countries play a minor role in the Community agri-food trade, but this group of products was an important source of their revenue from exports. At the same time, Denmark was characterised by a relatively high intensity of agri-food turnover. In 2011, the value of exports per hectare of UAA was in Denmark 2.5 times higher than the average value in the Community, whereas the imports value was 1.5 times higher than the Community average. Also Cyprus noted a nearly 3 times higher value of import expenses per unit of UAA than the EU average.

Luxembourg, Germany, Austria and Slovenia were also characterised by higher of exports intensity of agri-food products than the average value in the Community. In these countries in 2011, the revenue from exports ranged from 2.7 to 7.3 EUR thousand per hectare of UAA and it was from 16% to more than 3 times higher than the EU average, though none of those countries realised export specialisation in agri-food products. The share of agri-food products in the total trade volume was in those countries 20-40% lower than the average value in the Community (SI). Sweden, Austria, Italy and the United Kingdom together with Luxembourg and Slovenia were characterised by significant values of imports of agri-food products per hectare of UAA. The imports of agri-food products per unit of UAA ranged in these countries from 2.9 to 4.7 EUR thousand, i.e. 19-95% more than the average value in the EU countries.

The values of exports and imports of agri-food products per hectare of UAA ranged in the EU countries of Central and Eastern Europe from 0.3 EUR thousand in Romania to 1.9 EUR thousand in Slovakia. In most of these countries, it was from 40% to 60% lower than the average value in the countries of the Community. However, agri-food products occupied a significant position in the total trade structure of those countries. Export specialisation in this sector could be seen in Lithuania, Latvia, Bulgaria and Poland ($1.2 \leq SI \leq 1.8$).

Table 3. Agri-food trade intensity and export specialisation in the EU countries in 2011

Country	Export intensity		Import intensity		SI
	EUR thousand per hectare of UAA	EU-27=100%	EUR thousand per hectare of UAA	EU-27=100%	
Austria	3.1	131.3	3.2	135.3	0.8
Belgium	22.8	971.2	21.3	889.8	1.0
Bulgaria	1.1	46.1	0.7	30.9	1.7
Cyprus	1.7	71.4	6.7	278.6	2.0
Czech Republic	1.4	59.4	1.8	75.2	0.5
Denmark	6.1	260.1	4.1	169.0	2.1
Estonia	1.1	48.7	1.4	56.9	0.9
Finland	0.7	30.2	1.9	79.6	0.3
France	2.1	88.6	1.6	68.5	1.4
Germany	3.6	151.8	4.4	182.5	0.6
Greece	1.0	44.5	1.5	64.0	2.0
Holland	38.4	1 634.9	25.3	1 054.1	1.7
Hungary	1.6	69.8	1.0	41.8	0.9
Ireland	2.2	92.1	1.5	63.2	1.1
Italy	2.4	100.6	3.0	126.5	0.9
Latvia	0.9	36.5	1.0	40.8	1.7
Lithuania	1.3	53.9	1.0	43.6	1.8
Luxembourg	7.3	311.7	14.5	605.5	0.7
Malta	14.4	613.4	48.9	2 041.0	0.5
Poland	1.0	41.2	0.8	33.4	1.2
Portugal	1.4	58.8	2.5	104.6	1.2
Romania	0.3	12.4	0.3	13.4	0.9
Slovakia	1.5	62.8	1.9	78.9	0.5
Slovenia	2.7	116.0	4.7	194.6	0.6
Spain	1.3	56.5	1.2	48.5	1.6
Sweden	1.9	82.2	3.6	151.8	0.5
United Kingdom	1.4	58.8	2.9	119.1	0.7
EU-27	2.3	100.0	2.4	100.0	x

Source: [ComExt-Eurostat… 2012; Eurostat…, 2011], own calculations.

Concluding remarks

The aim of the paper was to show the importance and competitive advantage of the EU countries in the foreign trade in agri-food products. It is possible to observe that the old EU member states, especially Holland, Germany, France, the United Kingdom, Italy, Spain and Belgium play a dominant role in the agri-food trade due to their competitive potential, its quality and effectiveness of its use. However, agri-food products are not a significant source of export revenue in all of those countries. The countries with a high level of economic development are more often characterised by specialisation in industrial products exports, diversified products with higher value added. Their production requires more advanced manufacturing technologies. It is necessary to note that the higher technological potential of farms gives the countries of the EU-15 a comparative advantage mainly in capital-consuming directions of production which depend on technological progress. However, due to usually large resources of cheap labour force in Central and Eastern Europe, the agriculture gains there an advantage in labour consuming branches of production, which stands in agreement with the Heckscher-Ohlin-Samuelson theorem on resource abundance. Although agri-food products occupy an important position in the total foreign trade structure in the Central and East European countries, their significance in the exchange of agri-food products within the Community is incomparably smaller. In comparison with other countries of the Community, Malta is distinguished for its very high import intensity, which is necessary to satisfy the demand of the home market, although the share of this country in the EU agri-food trade is marginal.

References

ComExt-Eurostat. [2012]. [Available at:] http://epp.eurostat.ec.europa.eu/newxtweb/. [Accessed: 18.05.2012].

Devine P. [1996]: Competitiveness and the Objectives of Communities. [In:] Competitiveness, Subsidiarity and Industrial Policy. P. Devine, Y. Katsoulacos & R. Sugden (eds.). Routledge, London, New York.

Duren van E., Martin L., Westgren R. [1991]: Assessing the Competitiveness of Canada's Agrifood Industry. *Canadian Journal of Agricultural Economics* vol. 39, no. 4.

Eurostat. Agricultural Statistics. [2012]. [Available at:] http://epp.eurostat.ec.europa.eu/portal/page/portal/agriculture/ data/database. [Accessed: 13.10.2011].

Ezeala-Harrison F. [1999]: Theory and Policy of International Competitiveness. Praeger Publishers, Westport, London.

Fagerberg J. [1988]: International competitiveness. *The Economic Journal* vol. 98, no. 391.

IMD World Competitiveness Yearbook 1997. [1997]. IMD, Lausanne.

Jagiełło M. [2003]: Wskaźniki międzynarodowej konkurencyjności gospodarki. Studia i materiały, no. 80. Instytut Koniunktur i Cen Handlu Zagranicznego, Warszawa.

Kamerschen D.R., McKenzie R.B., Nardinelli C. [1991]: Ekonomia. Fundacja Gospodarcza NSZZ „Solidarność", Gdańsk.

Kennedy P.L., Harrison R.W., Kalaitzandonakes N.G., Peterson H.Ch., Rindfuss R.P. [1997]: Perspectives on Evaluating Competitiveness in Agribusiness Industries. *Agribusiness* vol. 13, No. 4.

Lubiński M. [1995]: Konkurencyjność gospodarki: pojęcie i sposób mierzenia. [In:] Międzynarodowa konkurencyjność gospodarki Polski – uwarunkowania i perspektywy. M. Lubiński i T. Smuga (eds.). Raporty – Studia nad konkurencyjnością. Instytut Rozwoju i Studiów Strategicznych, Warszawa.

Misala J. [2007]: Międzynarodowa zdolność konkurencyjna i międzynarodowa konkurencyjność gospodarki narodowej. Podstawy teoretyczne. Wydawnictwo Politechniki Radomskiej, Radom.

Mroczek W. [2009]: Handel zagraniczny Niemiec. *Wspólnoty Europejskie* no. 5(198).

Mucha-Leszko B., Kąkol M., Białowąs T. [2009]: Analiza handlu towarami Unii Europejskiej w latach 1995-2008 i ocena konkurencyjności. [In:] Pozycja Unii Europejskiej w handlu międzynarodowym – dynamika i struktura obrotów, konkurencyjność, główni partnerzy. B. Mucha-Leszko (ed.). Wydawnictwo Uniwersytetu Marii Curie-Skłodowskiej, Lublin.

Pitts E., Lagnevik M. [1998]: What determines food industry competitiveness? [In:] Competitiveness in the food industry. W.B. Traill & E. Pitts (eds.). Blackie Academic & Professional, London.

Singh A. [1977]: UK industry and the world economy: a case of de-industrialisation. *Cambridge Journal of Economics* vol. 1, no. 2.