

## CZEŚĆ I. ARTYKUŁY

## PART I. ARTICLES

### TRENDS OF COMPETITIVENESS IN THE AGRO-TRADE OF VISEGRAD COUNTRIES

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**Summary:** The accession to European Union (EU) in 2004 has resulted multiple kinds of agro-trade possibilities and difficulties for the Visegrad countries. The liquidation of customs and other trade barriers led immediately to an increased trade. The gradually growing trade intensity was much stronger in case of the old EU member states than in case of the neighbouring countries and occurred faster. The free flow of goods on the common international market was set and enhanced, and enabled trade expansions following the integration.

The objective of the paper the review of changes of trading processes within the examined country group following the Eastern enlargement. In addition, the key issue is to what products the comparative advantage principle could be applied, what products were able to realize competitive advantage in trade – in relation to Hungary.

**Key words:** agro-trade of Visegrad countries, export structure, competitiveness, agro-trade balance, export-import ratio

#### Introduction – general agro-trade effects

The agro-trade of Visegrad countries<sup>1</sup> - in trade policy aspect – was basically affected by two main events in the early 2000s. On the one hand, the favours implemented under the European Treaty concluded with the European Union (EU) before the accession and the revised version of favours, which considerably decreased barriers in bilateral trade with the member states of the EU15.<sup>2</sup> On the other hand, the EU membership has enabled free trade without restrictions among the new member states, according to the principles of common internal market. On the basis of EUROSTAT trade statistics data, the trade value with the EU15 clearly increased following the accession [EUROSTAT, 2012] (see Figure 1).

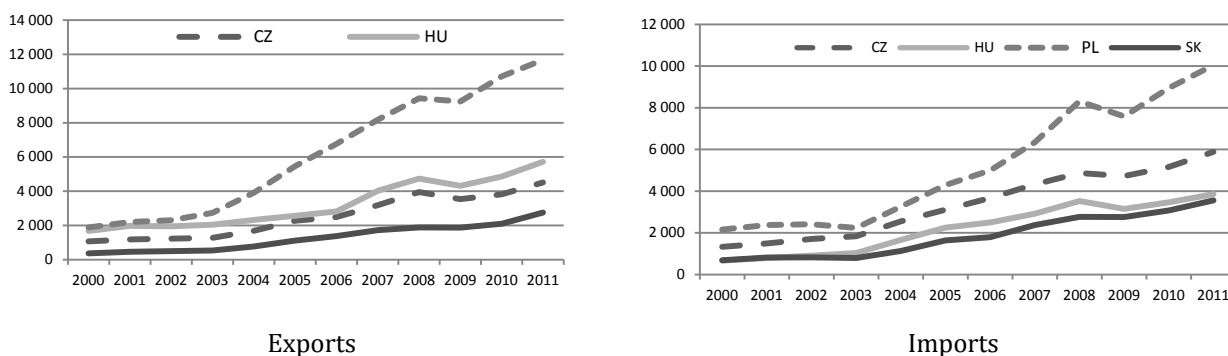
The countries which integrated after the enlargement in 2004 (EU12) had very different conditions concerning the role of agriculture in national economy: its level, volume of agricultural subsidies, production efficiency and competitiveness of the sector.

In spite of the fact that the trade policy approach was more liberal in regard to the EU15 because they headed towards the large and solvent market, basically very serious restrictions were applied in relations with the EU12, due to the tail effect of former trade policy trends. As a consequence, a distorted situation was created, which – in spite of efforts to address it<sup>3</sup> – clearly included the often unfavourable foreign trade effects, which made themselves full aware after the EU accession.

<sup>1</sup> The Visegrad Cooperation (Visegrad countries or the V4) is the regional organization of the Czech Republic (CZ), Hungary (HU), Poland (PL) and Slovakia(SK). The aim of this cooperation is to provide joint representation for the economic, diplomatic and political interests of these countries, harmonization of their actions in relation to the EU with special regard to agricultural policy, structural funds, common foreign and defence policy, as well as the Schengen Agreement.

<sup>2</sup> The EU has given substantial agro-trade favours by extending the Generalized System of Preferences (GSP), later it has created new condition system for agro-trade within the framework of Association Agreement concluded in 1991. The second amendment to the Agreement included the arrangement enhancing liberalization process prior to the accession. The mechanism of favours was extended under this framework: (a) system of customs-free quotes – “four zero solution”, (b) customs-free option without quantity restrictions – “double zero solution”, and (c) tools of traditional customs quotes. The degree of preferences considerably increased due to the measurements, the quantity limits decreased, thus, afterwards the preferential agricultural trade was in fact an equal part of internal market, the market competition (Halmay, 2007).

<sup>3</sup> Due to the trade agreements between the new member states, substantial integration was set up right before the accession both regarding the agricultural trade and agricultural markets. The Central European Free Trade Agreement (CEFTA) was ratified December 12, 1992, in Cracow and its main objective was to increase trade among members. Its actual expansion, however, was only moderate.



**Figure 1.** Agricultural exports and imports between Visegrad countries and the European Union (2000-2011, current prices, million euros)

**Rysunek 1.** Eksport i import rolny pomiędzy krajami Grupy Wyszehradzkiej i Unią Europejską (2000-2011 w cenach bieżących, w mln euro)

Source: Based on EUROSTAT 2012

### Material and methods

The article attempts to reveal the lessons that can be learnt from the example of Visegrád countries and distinguishes, basically, two reference points. On one hand, trade in goods between the different EU country groups, and, on the other hand, the special features of Visegrad countries. The data for the research were collected from EUROSTAT database, in SITC (Standard International Trade Classification<sup>4</sup>) system and covered the period from 2000 to 2011. The double digit distribution of SITC system was applied for the treatment of data.

It has become clear during the research, that, in general, a lot of difficulties and restrictions can affect the uniformity and reliability of data due to the database characteristics. The following difficulties and restrictions should be highlighted:

- Following the EU integration, in case of imports, the goods from countries outside the EU appear as goods from within the EU due to the EU border crossing and the location of an importing corporation in the EU.
- In case of exports, entry and exit summary customs declaration should be filled only for trade outside the EU, thus, the control of actual trade within the EU is impossible on the basis of customs declaration.<sup>5</sup>

<sup>4</sup> The Standard International Trade Classification, is a product classification of the United Nations used for external trade statistics (export and import values and volumes of goods). In cooperation with Governments and with the assistance of expert consultants, the United Nations Secretariat drew up the 1950 edition of the United Nations Standard International Trade Classification (referred to below as the "original" SITC). By 1960, many countries compiled international merchandise trade data according to the original SITC or national classifications correlated to it and major international organizations had adopted SITC as a basis for the reporting of international trade statistics. SITC is allowing for international comparisons of commodities and manufactured goods (UN, 2006).

<sup>5</sup> It should be noted that the document that follows the movement of goods is called accompanying document in the trade of excise goods. It had been used only in internal trade earlier, but following the EU-accession, the goods are accompanied by it as well; in the case of excise

- The series of VAT fraud within the EU has a significant distorting effect because the effect of fictitious trade within the EU is very uncertain in administration and, consequently, in statistics.
- Moreover, the black or illegal trade can be added to the above, because it has a strong effect on some special product groups.<sup>6</sup> But the avoiding trade should also be noted here, because it takes place legally at the EU level, but it does not appear in the statistical reports<sup>7</sup> of individual member states.

A number of methods, ratios and indices were applied in this research. The share of member countries in the export market ratio changes was explored:

$$MR_{E/I} = \frac{\sum_j^i x_t - \sum_j^i x_{t-1}}{\sum_j^i X_t - \sum_j^i X_{t-1}} \quad (1)$$

where  $MR_{E/I}$  is the ratio in the market proportion change,  $x_t, x_{t-1}$  is the value of the exports and imports of a given country in  $t$  and  $t-1$  year.  $X_t, X_{t-1}$  are the values of the total exports and imports of a given country in the two periods. The value of the ratio can be negative, which means that the trade decreases in case of a given country within the examined relation. Also, the structure of the index allows values above 100% or below -100%. It can be due to the temporary features that the value of the denominator is extremely low, thus, even a slight change may seem significant. It can distort the interpretation, therefore, the swinging values are maximized.

goods' trade between member states because the value added tax and the excise duty can be recovered on its basis (EUVONAL, 2012).

<sup>6</sup> The Hungarian cattle stock, which has excellent animal health record (free from bluetongue disease) has found a strong market in Turkey. In cases of some lots, however, some dealers exported calves to Turkey born outside of Hungary, but received Hungarian documents. As a result, Turkey has introduced sanctions.

<sup>7</sup> It is a difference in the reports of member states that data are reported in different trade values in each country. In the case of Hungary, it is the value of 100 million HUF annual trade.

The next index is the export-import balance, which clearly expresses the difference between the country's exports and imports:

$$B_{E/I} = x_{ij} - m_{ij} \quad (2)$$

where  $B_{E/I}$  is the sum of balance,  $x_{ij}$  is the sum of exports value of a given country, and  $m_{ij}$  is the sum of imports value.

The third applied index quantifies the export-import ratio. The ratio is the simplest export specification index which correlates the country exports to imports:

$$R_{E/I} = \frac{x_{ij}}{m_{ij}} \quad (3)$$

where  $R_{E/I}$  is the value of index,  $x_{ij}$  is the sum of exported goods, currently the sum of exports value of a given country, while  $m_{ij}$  is the sum of similar imports value.

The analysis also includes the calculation of Herfindahl-Hirschman-index (HHI) value of the examined country. In the course of the calculation, the export share of each product group is squared and the values received are summed. Formally, the index is formed as follows:

$$HHI = \sum_{i=1}^N S_i^2 \quad (4)$$

where  $S_i$  is the market share of a given  $i$  product group. Subsequently, the value of the index is between 0 and 1. The higher values indicate higher level of concentration.

The examination is completed with the calculation of the index developed by Béla Balassa for measuring the comparative advantage. The formula of  $B$  index is the following:

$$B = \frac{x_{ij} / \sum_i x_{ij}}{\sum_j x_{ij} / \sum_i \sum_j x_{ij}} = \frac{x_{ij} / \sum_j x_{ij}}{\sum_i x_{ij} / \sum_i \sum_j x_{ij}} \quad (5)$$

where  $x$  indicates exports,  $i$  is for the product group,  $j$  is the examined country, and, subsequently,  $x_{ij}$  is the product-level, while  $\sum_i x_{ij}$  is total exports of a given country,  $\sum_j x_{ij}$  indicates the product-level exports, and  $\sum_i \sum_j x_{ij}$  is the world or a country group total exports<sup>8</sup> (Balassa, 1965).

The  $B$  index assumes that the exports structure is equally sensitive to the relative costs and the differences between non-price factors (Fertő, 2003). Therefore, the comparative advantage is expected to deter-

mine the structure of exports. The reference point in the current research was the value of trade with the EU27. The examination of comparative advantages can be made using two approaches. On one hand, it can be analysed, how the share of a given product or product group within the exports relates to the export share on the reference market (the EU27). In other words, the regional comparison of relative values can be made. On the other hand, simultaneously, the other half of the formula examines the export ratio of source countries (the V4) within the EU 27 total exports. The comparative advantage can be detected if the export share of the product group is larger than the basis of comparison, or if the share of the examined country is bigger than its value within the total exports.

The numerator and denominator of Balassa index ranges from 0 to 1.<sup>9</sup> Accordingly, the value of the index can be within  $[0; \infty]$  interval.<sup>10</sup> If  $B > 1$ , a given country has a comparative advantage in case of the examined product; if the value of the index is between 0 and 1, it indicates a comparative disadvantage. The index was criticised for many shortcomings, see for example Fertő 2003, Fertő et al. 2005, or Jámbor et al. 2012. The criticism can be the consequence of the index's wide application, in international environment, where it served the comparison of very heterogeneous features and market regulations. In the opinion of the author of this study, in the case of EU27, (1) the geographical proximity, (2) similar macro-economic conditions, and (3) the nearly identical or simultaneously concluded trade policy agreements, results in the index predictive ability and applicability. Owing to the limits of the present study and the high number of reference points, the index was updated and the  $B$  value adjusted with the weighted average reflecting the importance of each product group in exports at national level, and the sum of these was calculated, according to the following formula:

$$B_1 = \sum \frac{x_{ij}}{\sum_j X_{ij}} * B_i \quad (6)$$

where  $x$  is the export,  $i$  is the product group,  $j$  is the examined country. Subsequently,  $x_{ij}$  is the product-level export of a given country,  $\sum_i x_{ij}$  is the total export, and  $B_i$  is the Balassa index of  $i$  product group.

## Findings

Concerning trade, it is obvious that the EU membership has resulted in a dynamic expansion of trade in the V4 countries. The foreign trade growth and - in

<sup>8</sup> In the original paper of Balassa, the  $i$  index indicated the combined export of 74 industrial products, while  $j$  index was for the sum of 11 developed industrial countries. In order to moderate the trade policy distortions, the  $B$ -index originally was limited only to the examination of industrial products.  $B$ -index presupposes that the export structure is sensitive both for the relative costs and the differences in non-price factors. Thus, the comparative advantage is expected to determine the structure of exports (Fertő, 2003).

<sup>9</sup> If  $X_{ij} / \sum_j X_{ij} = 1$  then it is a monopoly, the product is supplied only by a single examined country.

<sup>10</sup> The actual upper limit  $\sum_i \sum_j x_{ij} / \sum_i X_{ij}$  holds to infinity if  $\sum_i X_{ij}$  holds to zero, that is the economic weight of the country is not significant regarding the exports. (Poór, 2010)

some cases and regarding some product groups - the decline can be observed in the total agricultural trade (within and outside the EU27) The question is, to what extent can it be due to the potential market expansion of the examined countries.

In order to answer the question, the change is expressed in percentage terms reflecting how the change in case of each country group contributed to changes observed in the expansion of total trade.

On the basis of the data of  $MR_{E/L}$  index (formula 1), it can be concluded that in the case of total exports, the expansion was decisive with regard of the EU27. The strongest expansion was in Slovakia because 93% of the export growth was destined to the markets of the EU27. The value of the Czech Republic was lower (87%), the next in rank was Hungary (77%), then Poland (71%). The same value increased again by 3%, on average, for all countries in the period following the accession. Thus, it can be declared that in the case of the examined countries, the markets of the EU enabled

the expansion. In other words, the common internal market had a considerable impact on trade improvement, which also resulted in the concentration of common markets from the perspective of the V4.

If the research is extended, it can be seen in regards to the EU15 and V4 that the growth is very strong on the market of the old member states (Table 1). In some cases, the expansion of trade exceeded 100% (2002, CZ, HU), which was due, partly, to the limited changes of annual base value mentioned above, partly to the fact that the expansion of trade on the markets of the EU15 could, in total, adjust the decline taking place on other markets (e.g., outside the EU27).

Considering the results, it is confirmed that the accession to the EU in 2004 resulted in a sound and strong growth of the market. The highest growth values were observed in Slovakia. It leads to the conclusion that as the result of the permanent – and in some years even – expansion of the low base, the value of growth steadily increased and the market relations were less affected.

**Table 1.** The total export growth rate by country group (extra the EU27) \* (2001-2011)

**Tabela 1.** Stopa wzrostu eksportu ogółem w krajach Grupy Wyszehradzkiej w latach 2001-2011

In EU15 relation											
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Czech Rep.	41%	100%	18%	58%	43%	50%	50%	50%	25%	18%	34%
Hungary	58%	100%	100%	86%	47%	32%	52%	25%	17%	16%	44%
Poland	46%	74%	66%	76%	61%	58%	69%	50%	10%	59%	44%
Slovakia	36%	3%	0%	52%	36%	11%	29%	12%	-100%	-20%	21%
In V4 relation											
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Czech Rep.	49%	100%	5%	44%	42%	61%	45%	44%	67%	63%	55%
Hungary	-3%	100%	-26%	22%	17%	35%	14%	21%	16%	39%	38%
Poland	9%	32%	6%	14%	16%	21%	9%	19%	19%	10%	12%
Slovakia	60%	88%	48%	47%	56%	75%	76%	61%	100%	94%	75%

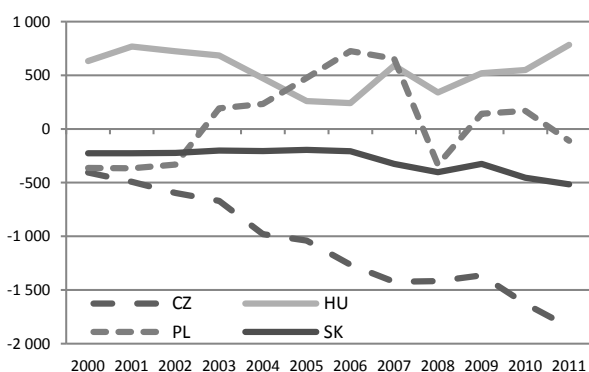
Source: Based on EUROSTAT 2012 data.

\* For reasons of simplicity and applicability, in some cases the extreme values were indicated as 100% and -100%.

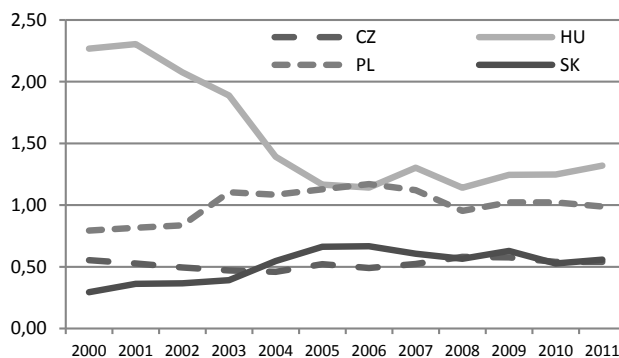
Reviewing the agro-trade balance (formula 2), the situation of Visegrad countries is much clearer (see Figure 1). In general, it can be declared that the balance of Hungary remained positive throughout the period, in spite of the fact that a stronger decline could be observed after 2004. In case of Poland, the balance of the index improved after the accession, while in the case of the other two countries, the integration has further worsened the negative value of the index. The export-import ratio has changed similarly.

The tendencies of export-import ratio<sup>11</sup> produce interesting result regarding trade (Formula 3). Given the values shown in Figure 2, it can be observed that the value of the ratio decreased in Hungary – in other words, the values of exports and imports come closer - in the examined relation, but the exports dominance could be maintained. The accession had a strong influence and the value of the index increased because the value of exported goods grew due to the emerging new markets.

<sup>11</sup> It should be noted for the application of the ratio that the decline of demand and import can also distort the value of the index.



Agro-trade balance



Export-import ratio

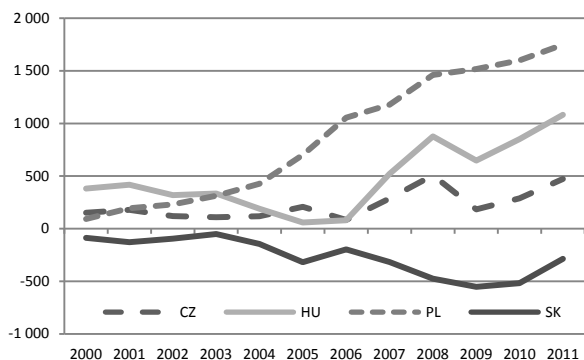
**Figure 2.** Agro-trade balance and export-import ratio of Visegrad countries with the EU15 (2000-2011; current prices, million euros)

Source: Based on EUROSTAT 2012 data

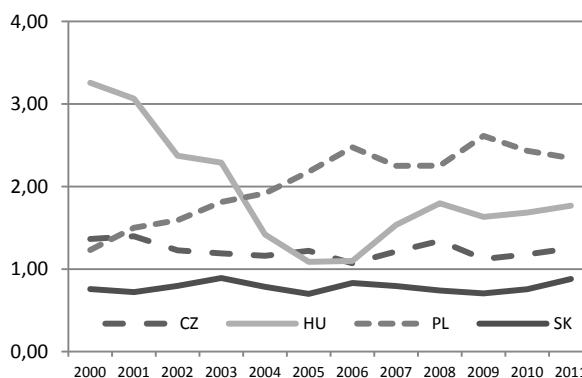
**Rysunek 2.** Bilans handlu rolno-spożywczego i relacja eksportu do importu w krajach Grupy Wyszehradzkiej z krajami UE-15 (2000-2011 w cenach bieżących, w mln euro)

Źródło: opracowanie własne na podstawie danych EUROSTAT 2012.

However, the picture is completely different for the new member states (the EU12) (Figure 3).



Agro-trade balance



Export-import ratio

**Figure 3.** The agro-trade balance and export-import ratio of Visegrad countries with the EU12 (2000-2011, current prices, million euros)

Source: Based on EUROSTAT 2012 data

**Rysunek 3.** Bilans handlu rolno-spożywczego i relacja eksportu do importu w krajach Grupy Wyszehradzkiej i krajami UE-12 (2000-2011 w cenach bieżących, w mln euro)

Źródło: opracowanie własne na podstawie danych EUROSTAT 2012.

The „opening of borders” in 2004 resulted in a significant export increase of the V4 towards the EU12, thus, improving both the balance and the ratio values. The situation of Poland is noticeable, because the values rapidly ascended at the start, in 2004, and gradually improved Poland’s export position compared to the V4 countries. Parallel with this phenomenon, Hungary and the Czech Republic could also show considerable activity in the markets of each other, but Slovakia was clearly lagging in this process and could not increase its trade in relation to the EU12.

When reviewing the individual countries, it can be detected that the exported product structure can be explained by the effects of the EU membership. It can be measured by the ratio of products in trade. The Herfindahl-Hirschmann index can be used for determining the concentration of markets in the economic analyses.

The values of examined countries (CZ, HU, SK, PL) and country groups (EU27, EU15, EU12, V4) are shown in Table 2.

**Table 2.** The Herfindahl–Hirschman-index values in the V4 exports to selected countries and country groups (2000-2011)**Tabela 2.** Indeks Herfindahla-Hirschmana dotyczący eksportu krajów Grupy Wyszehradzkiej w latach 2000-2011.

<b>Czech Republic</b>											
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
HU	0,1072	0,0893	0,0850	0,0862	0,0817	0,0747	0,0840	0,0946	0,0928	0,0898	0,0885
PL	0,1336	0,1142	0,1469	0,1850	0,1223	0,0856	0,0738	0,0765	0,0847	0,0785	0,0741
SK	0,0780	0,0729	0,0820	0,0816	0,0672	0,0705	0,0710	0,0711	0,0682	0,0715	0,0664
EU27	0,0679	0,0675	0,0689	0,0673	0,0694	0,0652	0,0694	0,0694	0,0656	0,0658	0,0632
EU15	0,1062	0,1015	0,0902	0,0746	0,0911	0,0892	0,0902	0,0918	0,0874	0,0889	0,0795
EU12	0,0673	0,0642	0,0723	0,0759	0,0643	0,0621	0,0626	0,0639	0,0618	0,0620	0,0598
V4*	0,0678	0,0654	0,0738	0,0776	0,0635	0,0619	0,0620	0,0634	0,0617	0,0626	0,0604
<b>Hungary</b>											
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
CZ	0,0809	0,0861	0,0908	0,1041	0,0869	0,0908	0,0893	0,0816	0,0897	0,0835	0,0828
PL	0,0878	0,1002	0,0860	0,1029	0,1051	0,1300	0,1156	0,1199	0,1522	0,1108	0,1032
SK	0,0794	0,1193	0,0770	0,0758	0,0758	0,0880	0,1164	0,0892	0,0974	0,0853	0,0990
EU27	0,0973	0,1035	0,0954	0,0913	0,0873	0,0884	0,0818	0,1167	0,0971	0,0905	0,0906
EU15	0,1347	0,1309	0,1141	0,1077	0,1010	0,1012	0,0968	0,1347	0,1084	0,1111	0,1088
EU12	0,0722	0,0847	0,0790	0,1000	0,0773	0,0809	0,0748	0,1045	0,0998	0,0790	0,0803
V4*	0,0731	0,0794	0,0760	0,0814	0,0820	0,0873	0,0831	0,0845	0,0930	0,0732	0,0799
<b>Poland</b>											
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
CZ	0,1175	0,1130	0,1047	0,1032	0,0929	0,0953	0,0905	0,0868	0,0871	0,0932	0,0935
HU	0,1503	0,1386	0,1253	0,1281	0,1050	0,0969	0,0932	0,0911	0,1038	0,1245	0,0913
SK	0,1336	0,1334	0,1202	0,1150	0,0924	0,1036	0,1019	0,0864	0,0793	0,0893	0,0977
EU27	0,0770	0,0727	0,0757	0,0787	0,0708	0,0757	0,0776	0,0768	0,0760	0,0721	0,0732
EU15	0,0975	0,0871	0,0874	0,0896	0,0760	0,0798	0,0822	0,0809	0,0802	0,0726	0,0737
EU12	0,0926	0,0932	0,0931	0,0885	0,0817	0,0818	0,0793	0,0778	0,0755	0,0810	0,0832
V4*	0,1230	0,1167	0,1043	0,1023	0,0901	0,0875	0,0833	0,0800	0,0796	0,0876	0,0903
<b>Slovakia</b>											
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
CZ	0,0747	0,0783	0,0791	0,0877	0,0851	0,0838	0,0770	0,0782	0,0745	0,0726	0,0684
HU	0,1342	0,1012	0,0887	0,1028	0,0952	0,0930	0,0853	0,0858	0,0886	0,0866	0,0964
PL	0,1907	0,2278	0,2008	0,1965	0,1518	0,1395	0,1809	0,1419	0,1124	0,1250	0,0993
EU27	0,0651	0,0683	0,0685	0,0701	0,0731	0,0756	0,0756	0,0780	0,0727	0,0711	0,0742
EU15	0,1141	0,1321	0,1091	0,0809	0,0892	0,0910	0,0928	0,1080	0,1122	0,1166	0,1011
EU12	0,0701	0,0728	0,0742	0,0782	0,0786	0,0751	0,0741	0,0746	0,0689	0,0651	0,0716
V4*	0,0696	0,0721	0,0739	0,0775	0,0806	0,0747	0,0740	0,0753	0,0686	0,0653	0,0717

Source: Based on EUROSTAT 2012 data.

\* Under the V4, we mean the trade within the country group, which is realized with the other three partners.

The values in the Table 2 clearly show that exports cannot be regarded as concentrated in any of the countries. The concentration cannot be detected in the median of product categories that the examined markets had exclusive role. It meets the preliminary expectations, because in the case of the EU27, due to the common internal market competition - especially in the case of the easily replaceable products - the strong market effects are against market concentration, thus, strengthening the position of consumers. The strongest values can be found in the Czech-Polish, Slovak-Polish and Hungarian-Polish relations. But in the case of the former, it concerns the period prior to the accession - which was subsidized and/or protected by trade agreements - while in case of the latter, it concerns the period after the integration. It can be declared that the accession has significantly rearranged the introduction of goods on the market, referring to the changes of trade barriers and, in some cases, intensifying the process of trade creation. The data also confirm a concentration on geographical basis. In the case of 3 (CZ, HU, SK) out of the 4 examined countries the values in the EU12 and V4 relation strongly converge, which means

that in their cases, the geographical conditions and location substantially affect the export of agricultural products, so the trade out of V4 only slightly influences the concentration of product groups. Essentially, these countries trade mostly within the region. A considerable deviation between the EU12 and V4 values can be detected only in the case of Poland, probably because of the strong and traditionally determinant presence, which can be observed in regards to the Baltic States.

The general competitive values of individual products and countries can give some important information in addition to the analysis of concentration. Quite a few indices and evaluations are available for the quantification of comparative advantage. One of them can be connected with Béla Balassa, who pioneered the measuring of comparative advantage. The index has had several versions during the last decade, but in the present research, the effects of competitiveness in trade of the V4 are analysed on the basis of the original formula.

The values of index *B* adjusted at the level of countries are included in Table 3, which also describes how the value of competitiveness changed at a country level.

**Table 3.** The aggregated values of Balassa index examined for the selected relations of V4 countries, (2000-2011)

**Tabela 3.** Zagregowane wartości indeksu Balassy w relacji do krajów Grupy Wyszehradzkiej z wybranymi grupami krajów UE (2000-2011)

Czech Republic												
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
HU	2,956	2,163	1,821	1,619	1,394	1,502	1,456	1,651	1,654	1,655	1,672	1,624
PL	2,100	2,094	2,137	2,268	1,998	1,779	1,517	1,416	1,596	1,500	1,444	1,422
SK	1,584	1,493	1,432	1,503	1,424	1,493	1,360	1,429	1,453	1,553	1,384	1,389
EU27	1,044	1,045	1,030	1,031	1,016	1,012	1,006	1,004	1,004	1,005	1,005	1,005
EU15	1,364	1,262	1,228	1,200	1,149	1,146	1,104	1,137	1,169	1,174	1,130	1,166
EU12	1,266	1,278	1,218	1,175	1,161	1,241	1,139	1,156	1,192	1,233	1,154	1,161
V4*	1,266	1,293	1,223	1,221	1,170	1,258	1,148	1,172	1,209	1,263	1,179	1,187
Hungary												
CZ	2,649	2,922	2,341	2,310	2,226	2,576	2,779	2,437	2,383	2,445	1,722	1,602
PL	1,655	1,894	1,729	1,902	2,241	2,718	2,063	1,551	1,469	1,603	1,539	1,386
SK	1,960	1,749	2,054	2,037	2,054	1,783	2,556	2,023	1,697	2,080	1,846	1,676
EU27	1,047	1,036	1,038	1,034	1,024	1,024	1,016	1,008	1,007	1,007	1,012	1,017
EU15	1,233	1,149	1,129	1,155	1,089	1,095	1,085	1,094	1,105	1,097	1,088	1,087
EU12	1,434	1,355	1,397	1,423	1,381	1,332	1,363	1,244	1,182	1,182	1,145	1,141
V4*	1,751	1,799	1,846	1,850	1,934	1,951	1,894	1,682	1,475	1,564	1,453	1,333
Poland												
CZ	2,049	1,861	1,641	1,601	1,398	1,288	1,224	1,160	1,289	1,307	1,228	1,363
HU	2,737	2,517	2,333	2,512	2,054	2,059	1,792	1,711	1,756	1,668	1,406	1,319
SK	2,487	2,557	1,965	2,007	1,466	1,327	1,357	1,262	1,340	1,335	1,272	1,301
EU27	1,094	1,088	1,057	1,062	1,017	1,017	1,027	1,014	1,007	1,013	1,011	1,014
EU15	1,299	1,270	1,193	1,178	1,077	1,075	1,086	1,061	1,041	1,033	1,035	1,042

EU12	1,827	1,751	1,568	1,508	1,373	1,279	1,177	1,145	1,136	1,190	1,173	1,214
V4*	2,200	2,031	1,727	1,740	1,469	1,373	1,262	1,209	1,251	1,256	1,202	1,252
<b>Slovakia</b>												
CZ	1,272	1,248	1,198	1,231	1,197	1,206	1,208	1,159	1,169	1,404	1,298	1,411
HU	1,915	1,683	1,369	1,495	1,191	1,379	1,355	1,196	1,357	1,264	1,166	1,163
PL	2,633	3,023	2,558	2,369	1,923	2,087	1,910	1,970	1,816	1,709	1,501	1,513
EU27	1,023	1,020	1,018	1,017	1,010	1,005	1,004	1,001	1,001	1,002	1,001	1,001
EU15	1,866	1,836	1,778	1,697	1,388	1,202	1,205	1,283	1,326	1,294	1,227	1,195
EU12	1,098	1,120	1,075	1,059	1,070	1,062	1,044	1,047	1,048	1,050	1,024	1,021
V4*	1,107	1,123	1,080	1,076	1,086	1,062	1,040	1,046	1,051	1,059	1,036	1,039

Source: Based on EUROSTAT 2012 data

\* Under V4, we mean the trade within the country group, which is realized with other three partners.

It can be observed in the examination of countries, that there were higher values during the period prior to the accession to the EU. In case of the Czech Republic and Slovakia, the competitiveness considerably decreased compared to 2000 and stabilized at or below the level observed around the accession. The situation of Poland<sup>12</sup> on the market of the other V4 member countries changed (the decrease) much slower, but even so it could not approach the Hungarian figures in value, because, on the one hand, these were the highest aggregated values, and, on the other hand, in case of e.g. the Czech Republic, the relatively strong values could be maintained until the world crisis of 2008. (It should be added, however, that in case of Poland the process started to stagnate almost right after the integration.)

More or less similar tendencies can be observed within the country groups. In general, it can be concluded that the pace of changes is much slower than it could be seen in regards to the examined countries. In the case of the Czech Republic and Slovakia, the process basically shows a slowly decreasing tendency. It should be highlighted that Slovakia had actually realized a competitive disadvantage by 20% in one year after the accession and 30% in two years. It seems that the membership in the EU was less successful in this respect. Although, it can be observed for all the examined countries, but to a lesser extent. The trend had changed much less only in the case of Hungary. It can be concluded on the basis of research results that significant value differences could not be detected by the end of the period concerning the competitiveness of trade between the member states or state groups.

## Conclusions

<sup>12</sup> In the case of Poland, it should be noted that its competitiveness is strongly affected by the internal consumption, sound macro-economic and state budget situation, determinant and permanently expanding German and Ukrainian relations in regards to trade. These result that the convergence of the Polish economy is outstanding within the V4 comparison. (Kerner, 2012)

The calculations have proved that value of agricultural trade of the V4 countries considerably expanded due to the changes of the last 12 years. Within that period, the expansion on the EU27 markets is a key factor and it was also strengthened by the favourable process on the markets of the EU15 and V4. It can also be declared that the trade balance in the case of EU15 was positive only in HU and PL, while in the trade within the V4, only SK could produce values, which, though negative, show an improving tendency. Another conclusion is that the market concentration of some products of selected countries decreased owing to the effects of common internal market operations and the strengthening of internal market competition. According to the research outcomes, this process accompanies the decline of comparative advantage and strong convergence of values in some relations. Therefore, the EU accession has created market and numerous possibilities, but – according to this research - it has not caused the improvement of the competitive values of the considered countries.

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## TRENDY KONKURENCYJNOŚCI W HANDLU ROLNO-SPOŻYWCZYM KRAJÓW GRUPY WYSZEHRADZKIEJ

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**Streszczenie:** Przystąpienie do Unii Europejskiej w 2004 roku krajów Grupy Wyszehradzkiej wywołało w ich międzynarodowym handlu rolno-spożywczym wiele nowych możliwości jak i trudności. Likwidacja ceł i innych barier skutkowałą natychmiastowym wzrostem aktywności handlowej. Stopniowo wzrastająca intensywność obrotów handlowych ze starymi krajami członkowskimi UE była znacznie silniejsza w stosunku do krajów bliskiego sąsiedztwa i przebiegała szybciej. Proces ten ułatwił ekspansję obrotów dzięki swobodnemu przepływowi towarów na wspólnotowym jednolitym rynku, co sprawiło zarówno rezultat jak i sposób pogłębionej integracji.

Celem pracy jest dokonanie przeglądu i ocena zmian w procesach handlowych w obrębie grupy krajów Wyszehradzkich po rozszerzeniu Unii Europejskiej na Wschód. Dodatkowo chodziło o wskazanie kluczowych kwestii dotyczących struktury produktowej obrotów oraz korzyści komparatywnych jakie przynosi zagraniczna wymiana towarami rolno-spożywczymi zwłaszcza dla Węgier.

**Słowa kluczowe:** handel rolno-spożywczy krajów Grupy Wyszehradzkiej, struktura eksportu, konkurencyjność, bilans handlu rolno-spożywczego, wskaźnik eksportu do importu

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