Development of agricultural trade and competitiveness of the commodity structures of individual countries of the Visegrad Group

Miroslav SVATOŠ, Luboš SMUTKA

Department of Economics, Faculty of Economics and Management, Czech University of Life Science in Prague, Prague, Czech Republic

Abstract: The paper analyzes the development of the value, commodity and territorial structure and competitiveness of agricultural trade of the countries of the Visegrad Group in 1993–2008. Over the years, there has been a sharp increase not only to the volume, but also to the value of the traded agricultural products. The territorial structure of both exports and imports has narrowed to a decisive extent, primarily to the trade with the countries of the EU27. The commodity structure of agricultural trade has adapted very strongly both to the world and especially to the European market and it has furthermore reacted to the changes in the structure of the individual national markets. In the course of the years, the commodity structure has profiled so that there has been a limitation of aggregation with a strong comparative advantage on the market of the EU countries in relation to the aggregations that did not held this advantage. The analysis that has been performed indicates that the process of the accession to the EU has been reflected positively in the results of agricultural trade especially in the case of Poland. In the case of the Czech Republic and Slovakia, the entry into the EU likewise has not led to a worsening of the results in the area of agricultural trade. Only in the case of Hungary, one does find serious structural problems after the entry into the EU in the case of agricultural trade. It can be assumed that these problems can be attributed for the most part to the Hungary's current economic problems.

Key words: competitiveness, Visegrad Group, agricultural trade, commodity structure, value

The agricultural sector plays a key role both with respect to its main function, which is to secure food security, and with respect to the non-production functions it serves in the economy and in society (Asuming-Brempong 2004; Jeníček 2009). The last 20 years affected agricultural sector in many European countries including the members of the Visegrad Group. The volume of their agricultural production was significantly reduced, but the volume and value of their trade activities had been constantly growing (Bielik et al. 2010).

During the last two decades (specifically in from 1990 to2008), agricultural trade in the countries of the Visegrad Group passed through a series of changes that influenced its shape and character. The agricultural trade development was influenced especially by the globalization and integration processes (Horská et al. 2011).

The globalization and internationalization of agrarian trade are closely associated with the development and application of the information and communication infrastructure and technologies, which considerably reduce transaction costs and contribute to the trade in differentiated goods (Tang 2006).

The empirical results confirm that the information and communication infrastructure development has a significant impact on the bilateral trade in agricultural commodities (Bojnec and Fertő 2011). Many authors consider the ability of a successful adaptation in relation to the new development trends as a sign of competitiveness (Pokrivčak and Ciaian 2004; Ciaian and Swinnen 2006; Pokrivčák and Drábik 2008; Pokrivčák 2009; Qineti et al. 2009). The ability of the Visegrad Group members to compete in the European and world market is the main subject of this paper.

In the case of all analyzed countries, in recent years there has been a significant increase of the exports and imports value and volume. In spite of their having much in common, there are differences among the countries of the Visegrad Group. The full manifestation of individual differences began to be apparent especially after the entry of those countries into the EU. In the recent years, there have occurred major changes in the commodity and especially territorial

structure of agricultural trade in the case of the individual countries of the Visegrad Group. The Czech Republic, Poland, Slovakia and Hungary changed their trade orientation especially towards the trade with the countries of the EU27 (in the case of Poland, the dependence is less significant, in view of its activities in the markets of the CIS countries). In the case of the individual analyses of countries regarding the resultant value of agricultural trade, the countries of the EU27 have a share of over 75%. In the past years, their share has increased both with respect to agricultural exports and with respect to agricultural imports of the individual countries of the Visegrad Group (UN Comtrade 2010).

Also the commodity structure has begun to change very dynamically. While back in the 1990s, the pillars of the Visegrad Group agricultural exports still consisted mainly of labour-intensive products with a low added value, after the entry into the EU, there is an apparent growth of the share of finished products with a higher level of added value. This development trend is visible mainly in Poland and Slovakia. In the case of the Czech Republic and Hungary, the value and volume of unprocessed products are constantly growing (Qineti and Smutka 2011). In the case of agricultural imports of products with a higher level of added value, right from the beginning of the 1990s there has been a strong, constant growth of that share. It can be said in general that in the case of the Visegrad Group countries, the unit prices of agricultural imports have over the long term exceeded the unit prices of agricultural exports, resulting especially in the case of the Czech Republic, Slovakia and Hungary in worsening of the balance of agricultural trade (UN Comtrade 2010). In spite of these facts, in the period since the entry into the EU, especially in the case of Poland and Slovakia, there has been a significant increase of the prices of exports per 1 kilogram (Table 10).

A characteristic feature of the commodity and territorial structure of agricultural trade of the Visegrad Group countries is its relatively narrow diversity (Pokrivčák and Drábik 2008). On the one hand, this might reflect the tendency of the individual countries to specialize in the commodities with comparative advantage, but on the other hand, such a narrow composition of trade represents a great risk if unexpected market deterioration occurs. In the individual countries, the commodity structure is very concentrated – see Table 8 (the core of value, especially of exports, has always consisted of a limited number of aggregations – Poland represents an exception in this regard). The territorial structure of agricultural trade is also typically very narrowly specialized on trade with only few mainly European countries that consti-

tute the core of the trading partners of the Visegrad Group countries (i.e. the Czech Republic – 7 European countries (Germany, Slovakia, Poland, Italy, Hungary, Austria and the Great Britain) represent 80% of the total export and cc 70% of the total imports; Hungary – 8 European countries participate (Germany, Austria, Italy, Poland, Slovakia, the Czech Republic, Romania and Slovenia) by cc 70% in the Hungarian agrarian foreign trade value; Poland – 8 European countries (Germany, Italy, the Netherlands, the Great Britain, the Czech Republic, Slovakia, Hungary and Russia) represent over 70% of the agrarian foreign trade total value; Slovakia – 7 European countries (Germany, Italy, Austria, the Czech Republic, Poland, Hungary and Romania) represent over 80% of the agrarian foreign trade value). In this respect, however, it is necessary to emphasize that the territorial structures of agricultural trade of the individual countries have not yet been settled and that competitiveness in the respective markets will play an important role in the determination of their long term pattern.

OBJECTIVE AND METHODOLOGY

The objective of this paper is to identify the changes in the agricultural export competitiveness of the Visegrad Group countries (the Czech Republic, Slovakia, Hungary and Poland, hereinafter designated as the Visegrad Group) in the period 1993–2008. The authors aim at finding out if there are similarities or differences in the agrarian foreign trade development trends and competitiveness among the selected countries. On the basis of the analysis performed, the development trend and the position of agricultural foreign trade in the Visegrad Group countries are identified Also the competitiveness of agricultural exports of the individual countries is analyzed for the purpose of identifying the fundamental development trends and tendencies. Last but not least, the paper focuses on differences existing between the individual countries of the Visegrad Group with respect to the main developmental tendencies in the area of the formation of, in particular, the commodity structure of agricultural exports.

In spite of the availability of the data for 2009 and 2010, these two year have finally been excluded from the analysis because of the incompleteness and also because of the occurrence of outliers probably caused by the uneven effects of the economic crisis.

The central source of the data was the database of the UN COMTRADE which permits monitoring the development of trading of goods (including agricultural products and food) according to the Standard

Table 1. A list of aggregations representing the commodity structure of trade in agricultural products and food

SITC code	Aggregation	SITC code	Aggregation
001	LIVE ANIMALS	056	VEGTABLES, PRPD, PRSVD, NES
011	BOVINE MEAT	057	FRUIT, NUTS EXCL. OIL NUTS
012	OTHER MEAT, MEAT OFFAL	058	FRUIT, PRESERVED, PREPARED
016	MEAT, ED. OFFL, DRY, SLT, SMK	059	FRUIT, VEGETABLE JUICES
017	MEAT, OFFL. PRPD, PRSVD, NES	061	SUGARS, MOLASSES, HONEY
022	MILK AND CREAM	062	SUGAR CONFECTIONERY
023	BUTTER,OTHER FAT OF MILK	071	COFFEE, COFFEE SUBSTITUTE
024	CHEESE AND CURD	072	COCOA
025	EGGS, BIRDS, YOLKS, ALBUMIN	073	CHOCOLATE, OTH. COCOA PREP
034	FISH, FRESH, CHILLED, FROZN	074	TEA AND MATE
035	FISH, DRIED, SALTED, SMOKED	075	SPICES
036	CRUSTACEANS, MOLLUSCS ETC	081	ANIMAL FEED STUFF
037	FISH ETC. PREPD, PRSVD. NES	091	MARGARINE AND SHORTENING
041	WHEAT, MESLIN, UNMILLED	098	EDIBLE PROD.PREPRTNS, NES
042	RICE	111	NON-ALCOHOL. BEVERAGE, NES
043	BARLEY, UNMILLED	112	ALCOHOLIC BEVERAGES
044	MAIZE UNMILLED	121	TOBACCO, UNMANUFACTURED
045	OTHER CEREALS, UNMILLED	122	TOBACCO, MANUFACTURED
046	MEAL, FLOUR OF WHEAT, MSLN	411	ANIMAL OILS AND FATS
047	OTHER CEREAL MEAL, FLOURS	421	FIXED VEG. FAT, OILS, SOFT
048	CEREAL PREPARATIONS	422	FIXED VEG. FAT, OILS, OTHER
054	VEGETABLES	431	ANIMAL,VEG. FATS, OILS, NES

Source: Czech Statistical Office (2010)

International Trade Classification (SITC). The data are presented in the current USD prices.

The analysis portrays the agricultural trade of the Visegrad Group countries by the commodity and territorial structures against the world and EU agricultural trade. Table 1 provides a list of the followed commodity aggregations. The subjects of the analysis are in particular the changes in the values of exports and imports and the coverage of imports by exports. A large part of the research is devoted to the assessment of comparative advantages of the selected commodities with respect to the main trading partners (regions) of the Visegrad Group.

Because competitiveness refers to various concepts such as establishing a global standard, developing new technology, products or a comprehensive business environment, the term causes often confusions for the readers. Therefore, a prudent definition is provided: competitiveness of the individual agricultural aggregations is understood as the degree of comparative advantage within the agricultural sector (at the EU level and the world level).

Since the aim of the research is to analyze the agricultural export competitiveness, the well known RCA1 index was chosen as the most appropriate instrument for it.

The concept of the RCA1 index is based on the Balassa Index[1] (Balassa 1965). Balassa (1965, p. 116) summarised the problem as follows: "Comparative advantages appear to be the outcome of a number

[1]The idea to determine a country's 'strong' sectors by analyzing the actual export flows was pioneered by Liesner (1958). Since the procedure was refined and popularized by Bela Balassa (1965, 1989), it is popularly known as the Balassa Index. Alternatively, as the actual export flows 'reveal' the country's strong sectors, it is also known as the *Revealed Comparative Advantage*. Many countries are, for example, producing and exporting cars. To establish whether a country, say Japan, holds a particularly strong position in the car industry, Balassa argued that one should compare the share of car exports in the Japan's total exports with the share of car exports in a group of the reference countries' total exports. The Balassa

of factors, some measurable, others not, some easily pinned down, others less so. One wonders, therefore, whether more could not be gained if, instead of enunciating general principles and trying to apply these to explain the actual trade flows, one took the observed pattern of trade as a point of departure". Hence, he advanced to measure the 'revealed' comparative advantage of certain countries for certain exporting commodities by the means of what has become known as the Balassa Index or the index of the Revealed Comparative Advantage (RCA).

The modified index of revealed comparative advantage (RCA1 – global/regional level)

$$RCA1 = (X_{ij}/X_{nj})/(X_{it}/X_{nt})$$

where:
X = represents exports
i = represents the analyzed country
j = represents the analyzed sector of the economy (sector of industry or commodity)
n = represents the group of countries or world
t = represents the sum of all sectors of the economy or the sum of all commodities or the sum of all branches

The RCA1 index analyzes the export of the commodity "j" in the case of country "i" in proportion to the total exports of the given country and the corresponding total exports of the analyzed group of countries or of the whole world (Hinloopen and Marrewijk 2001; Utkulu and Seymen 2004). A comparative advantage is then proven if the RCA1 index value is greater than 1. If, however, the result of the calculated index is less than 1, it may be asserted that the given country has a competitive disadvantage in the case of the given commodity or group of commodities (Qineti et al. 2009).

The results of the processed analysis are showed in two graphs: The first graph is constructed for the period 1993–1998 and the other one illustrates the individual countries competitiveness in the period 2004–2008. In the first period, there was no pre-accession preferential access of the Visegrad Group countries to the EU markets, while in the second period, these countries were already fully integrated in the EU common market. The x axis represents the RCA1 index value for the world market and the y axis represents the RCA1 index value for the market of the EU27 countries. On the basis of the calculated values, the individual aggregations of agricultural trade are distributed into 4 quadrants. If aggregations have an apparent competitive advantage only in the world market, they are located in the upper-left quadrant (quadrant I). Aggregations with an apparent competitive advantage only in the market of the EU27 countries are found in the bottom-right quadrant (quadrant III). If an aggregation has no competitive advantage, it is depicted in the bottom-left quadrant (quadrant II). Finally, the most important group of aggregations with an apparent competitive advantage both in the market of the EU27 and in the world market is found in the upper-right quadrant (quadrant IV).

The above mentioned analysis of the individual agrarian trade aggregations competitiveness both in the EU and the world market is accompanied by the analysis of the individual aggregations' share development in the total agrarian export value and their inter-annual growth rate value development. The individual aggregations are again divided into four quadrants. Such a division of the commodity structure of agricultural exports of the individual countries was inspired by the BCG matrix concept (Kotler 2007). A modified version of the BCG matrix terminology and interpretation has been applied, where the commodities placed in its upper right corner are called stars (represented by a high share in the final value of agricultural trade and a rapid growth rate of its export value); those placed in the upper left corner are called cash cows (with a higher than average share in the total aggregate value of the agricultural exports, but a low growth rate of their exports value); the commodities placed in the lower right corner are called problem children (or sometimes question marks, which are characterized by a low share in the value of agricultural trade, but on the other hand, the annual export growth levels are very high); in the last quadrant, the last commodity groups left are the dogs (those are the aggregations with an export growth rate below the average and a share in the final value of the agricultural exports also below average (low)).

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index is therefore essentially a normalized export share. More specifically, if BI^A_j is country A's Balassa index for industry j, this is defined as to:

$$BI^A_j = \frac{\text{share of industry } j \text{ in country } A \text{ exports}}{\text{share of industry } j \text{ in references country } A \text{ exports}}$$

If $BI^A_j > 1$, country A is said to have a revealed comparative advantage in the industry j, since this industry is more important for the country A's exports than for the exports of the reference countries.
Hinloopen and van Marrewijk (2001) discuss the empirical distribution of the Balassa index, while Hinloopen and van Marrewijk (2006) show empirically that the Balassa index is theoretically sound.

RESULTS AND DISCUSSION

In 1993–2008, there came about a very sharp rise in the value of agricultural trade of the individual Central European countries (Table 2). The turnover of agricultural trade of the analyzed Visegrad Group countries during the monitored period increased from ca. USD 9 billion to approximately USD 60 billion. The average value of the turnover of agricultural trade of the monitored countries increased year-on-year by ca. 13.6%. The values of agricultural exports and imports in the monitored period increased at approximately the same rate.

If we focus on the development of the value of agricultural trade (Tables 3) of the individual Central European countries that became the EU members in 2004 and that share very close historical, political and economic ties, the following may be said:

The nominal value of agricultural exports of the Czech Republic during the monitored period of 1993–2008 increased by more than 440% (i.e. from USD 1 billion to ca. USD 4.8 billion), in the case of Hungary, there has been observed the growth of the nominal value of trade by ca. 320% (i.e. from ca. USD 1.7 billion to ca. USD 7.1 billion), Polish agricultural exports increased in nominal value approximately ten times (i.e. from ca. USD 1.5 billion to ca. USD 16 billion), and Slovakia has exhibited an increase of the agricultural exports nominal value in 1994–2008 by more than 530% (i.e. from just under USD 400 million to ca. USD 2.4 billion).

Speaking about agricultural trade, it should be mentioned that not only agricultural export increased its nominal value significantly. The nominal value of the individual countries' agricultural imports was also constantly growing. In the case of the Czech Republic, one may see the most dynamic increase of the nominal value of agricultural imports among all of the analyzed countries. During the monitored period of 1993–2008, the value of agricultural imports rose from USD 981 million to ca. USD 6.5 billion (i.e. by more than 620%), Hungarian imports increased in nominal value from ca. USD 1.7 billion to USD 4.7 billion (i.e. by more than 580%), during those years Polish imports increased from ca. USD 2 billion to USD 13 billion (i.e. ca. 550%), and finally with Slovak agricultural imports one finds an increase in the nominal value of agricultural imports from ca. USD 560 million to ca. USD 4 billion (i.e. by ca. 600%).

A characteristic feature of the agricultural foreign trade of such countries as the Czech Republic, Slovakia, Hungary and Poland is a very strong orientation towards the European market, and particularly towards the market of the EU27 countries. In 1993–2008, the share of the current EU member states in the turnover of agricultural trade of the individual analyzed countries increased constantly. At the beginning of the 1990s, the countries of the present EU27 represented ca. 60% of the turnover of agricultural trade of the aforementioned countries, but by 2008 the share of the countries of the present EU in the turnover of agricultural trade of the aforementioned countries was ca. 80%.

With respect to the balance of agricultural trade of the Visegrad Group countries, the following can be said. With the exception of Hungary (where the gradual reduction of coverage of exports by imports can be seen), the situation regarding the development of the balance of agricultural trade is stabilized in all

Table 2. Development of the value of the turnover and the balance of agricultural trade of the Czech Republic, Hungary, Poland and Slovakia in 1993–2008

	Turnover (mil. USD)						Trade balance (mil. USD)				
	Czech Republic	Hungary	Poland	Slovakia	Visegrad group		Czech Republic	Hungary	Poland	Slovakia	Visegrad group
1993	2 010	2 381	3 623	900	8 914	1993	48	1 003	−535	−226	290
1995	2 931	3 404	5 022	1 213	12 570	1995	−425	1 732	−448	−201	658
1997	2 917	3 565	6 593	1 216	14 291	1997	−603	1 615	−261	−392	359
1999	2 644	2 943	5 427	1 087	12 101	1999	−616	1 187	−639	−345	−413
2001	2 857	3 297	5 798	1 254	13 206	2001	−513	1 277	−344	−416	4
2003	4 057	4 390	7 739	1 691	17 877	2003	−809	1 338	607	−377	759
2005	6 978	6 293	14 483	3 453	31 207	2005	−1 000	959	2 233	−639	1 553
2007	10 361	9 506	23 025	5 274	48 166	2007	−1 623	1 932	2 877	−984	2 202
2008	12 627	11 820	29 736	6 336	60 519	2008	−1 573	2 410	2 530	−1 606	1 761

Source: UN Comtrade (2010) + own calculations

the remaining three Visegrad countries (in the case of the Czech Republic, the coverage of imports by exports varies at the level of ca. 70–80%, in the case of Slovakia at the level of ca. 60–70%, while in the case of Poland, the value of the coverage of imports by exports has increased during the monitored years, and it varies at present at the level of ca. 120–130% – for details see Table 4).

On the basis of many research studies concerning the agricultural trade of the VISEGRAD GROUP

Table 3. Selected aspects of the territorial structure of agricultural exports and import (in mil. USD) of the Visegrad Group countries in 1993–2008 (growth rate calculated with a chain index)

	Czech Republic			Hungary			Poland			Slovakia		
	EU15 1995	EU12 2007	World incl. EU27	EU15 1995	EU12 2007	World incl. EU27	EU15 1995	EU12 2007	World incl. EU27	EU15 1995	EU12 2007	World incl. EU27
EXPORT												
1993	399	352	1 029	838	239	1 692	971	87	1 544			
1995	523	430	1 253	1 068	412	2 568	1 203	130	2 287	83	304	506
1997	381	410	1 157	1 015	519	2 590	1 173	288	3 166	86	206	412
1999	347	448	1 014	969	503	2 065	1 164	385	2 394	66	243	371
2001	397	543	1 172	1 050	532	2 287	1 325	493	2 727	83	285	419
2003	601	750	1 624	1 383	639	2 864	2 107	748	4 173	127	448	657
2005	1 242	1 337	2 989	1 818	836	3 626	4 797	1 531	8 358	417	875	1 407
2007	1 854	2 125	4 369	2 846	1 819	5 719	7 669	2 766	12 951	586	1 463	2 145
2009	2 263	2 187	4 836									
2008/1993	6.08	7.54	5.37	3.68	10.83	4.21	9.66	42.41	10.45	9.54	7.1	6.34
Inter annual growth rate												
1993–2008	1.13	1.14	1.12	1.09	1.17	1.1	1.16	1.28	1.17	1.17	1.15	1.14
1993–1998	0.98	1.08	1.04	1.04	1.19	1.08	1.04	1.35	1.14	1.03	1.02	1.02
1999–2003	1.11	1.08	1.05	1.06	1.02	1.03	1.12	1.14	1.07	1.11	1.12	1.09
2004–2008	1.32	1.29	1.28	1.17	1.32	1.20	1.35	1.38	1.31	1.37	1.29	1.29
IMPORT												
1993	482	209	981	365	39	689	1 140	134	2 079			
1995	923	299	1 678	375	46	836	1 267	252	2 735	250	299	707
1997	866	318	1 760	400	89	975	1 547	270	3 427	292	334	804
1999	780	373	1 630	344	119	878	1 457	279	3 033	250	336	716
2001	851	386	1 685	471	165	1 010	1 617	316	3 071	292	399	835
2003	1 245	619	2 433	781	277	1 526	1 870	396	3 566	338	506	1 034
2005	2 237	1 034	3 989	1 693	748	2 667	3 322	600	6 125	584	980	2 046
2007	3 349	1 695	5 992	2 300	1 151	3 787	5 603	1 116	10 074	862	1 397	3 129
2009	3 744	1 901	6 554									
2008/1993	8.38	9.26	7.24	8.24	33.29	6.83	7.13	10.73	6.54	6.08	7.94	7.05
Inter annual growth rate												
1993–2008	1.15	1.16	1.14	1.15	1.26	1.14	1.14	1.17	1.13	1.14	1.16	1.15
1993–1998	1.13	1.12	1.13	1.02	1.23	1.09	1.08	1.19	1.11	1.10	1.09	1.08
1999–2003	1.07	1.11	1.06	1.14	1.20	1.08	1.02	1.05	1.00	1.02	1.07	1.04
2004–2008	1.27	1.26	1.24	1.31	1.36	1.25	1.34	1.29	1.31	1.28	1.30	1.31

Source: UN Comtrade (2010) + our own calculations

Table 4. Agricultural trade of the Visegrad Group countries – coverage of imports by exports in 1993–2008

	The coverage level of imports by exports (%)				
	Czech Republic	Hungary	Poland	Slovakia	Visegrad group
1993	104.89	245.57	74.27	59.86	106.73
1995	74.67	307.18	83.62	71.57	111.05
1997	65.74	265.64	92.38	51.24	105.15
1999	62.21	235.19	78.93	51.82	93.40
2001	69.55	226.44	88.80	50.18	100.06
2003	66.75	187.68	117.02	63.54	108.87
2005	74.93	135.96	136.46	68.77	110.47
2007	72.91	151.02	128.56	68.55	109.58
2008	77.85	151.22	118.60	59.56	105.99

Source: UN Comtrade (2010) + our own calculations

countries (Horská and Hambálková 2008; Pokrivčák and Drabík 2008; Svatoš and Smutka 2009a), it may be asserted that the agricultural trade of the individual countries is constantly reforming and adapting to the conditions prevailing in the EU common market, where most of the trade of all of the countries in question is directed. Although for each of the Visegrad Group countries the accession to the EU has meant a fundamental change to the conception of the functioning of their own agricultural markets, with the exception of Hungary; these countries have been able to adapt to the new conditions and to find their own functional way to the EU common market (Tuček 2006). They were also able to

adopt the EU obligations related to the WTO. The other EU member states became their main trade partners and, on the other hand, some trade partnership developed in the past in the areas outside the EU single market had to be changed or even broken (Bielik et al. 2010). During the monitored time period, the share of the EU in the individual Visegrad Group countries total agrarian foreign trade increased significantly. It must be highlighted that the position of the current EU within the individual Visegrad Group countries agrarian foreign trade activities had been constantly changing already in the period before their EU accession. The pre-accession agreements gradually removed the trade barriers. However, it must be mentioned that the Visegrad Group countries opened their markets to partners from the EU disproportionally (Vološin 2004). The following Table 5 provides a brief overview of the EU position development in relation to the individual Visegrad Group countries total agrarian foreign trade performance – the growth of the EU market position as the most significant trade partner for the individual Visegrad Group countries during the whole analysed time period is quite evident.

An ever growing number of export items are able to make headway into the European market. This trend is especially apparent in the case of Poland and Slovakia, but even the Czech Republic is not bad off in this respect. Only Hungary, which had been the export leader of agricultural trade among the Visegrad Group countries for a long time, has fallen behind badly in the recent years. Most importantly, in the case of Hungary, the items coming to the forefront have a lower degree of the added value, while the

Table 5. V4 countries' agrarian foreign trade turnover value development (in mil. USD) and the share of the EU27 in the total trade performance (%)

	Czech Republic			Hungary			Poland			Slovakia		
	EU27	World incl. EU27	share of EU27 in total	EU27	World incl. EU27	share of EU27 in total	EU27	World incl. EU27	share of EU27 in total	EU27	World incl. EU27	share of EU27 in total
1993	1 442	2 010	71.74	1 481	2 381	62.20	2 332	3 623	64.37	–	–	–
1995	2 175	2 931	74.21	1 901	3 404	55.85	2 852	5 022	56.79	936	1 213	77.16
1997	1 975	2 917	67.71	2 023	3 565	56.75	3 278	6 593	49.72	918	1 216	75.49
1999	1 948	2 644	73.68	1 935	2 943	65.75	3 285	5 427	60.53	895	1 087	82.34
2001	2 177	2 857	76.20	2 218	3 297	67.27	3 751	5 798	64.69	1 059	1 254	84.45
2003	3 215	4 057	79.25	3 080	4 390	70.16	5 121	7 739	66.17	1 419	1 691	83.91
2005	5 850	6 978	83.83	5 095	6 293	80.96	10 250	14 483	70.77	2 856	3 453	82.71
2007	9 023	10 361	87.09	8 116	9 506	85.38	17 154	23 025	74.50	4 308	5 274	81.68
2009	10 095	11 390	88.63	–	–	–	–	–	–	–	–	–

Source: UN Comtrade (2010) + our own calculations

items with a higher level of processing and higher prices per kilogram are losing their position.

For the individual Visegrad Group countries, trading partners both within the old EU15 and among the new member states that joined the EU in 2004 and 2007 are of importance. It should be highlighted that after the Visegrad Group countries joined the EU, their trade with the other new EU members exhibited a much higher growth rate than with the old EU members (Svatoš and Smutka 2009b, Smutka et al. 2011). It is clear, because while there was a double zero tariff agreement between the candidate countries and the EU, the trade relationships between the Visegrad countries continued being hampered by the tariffs.

In relation to the trade commodity structure development, it can be stated that significant differences exist between the EU15 and the new EU members. While in the EU15 the high added value aggregations have the dominant share in the total agricultural exports, in the case of the new EU members, the situation is opposite (Svatoš et al. 2010).

In relation to the gradual transformation of the resultant appearance and character of the agricultural trade of the individual countries of the Visegrad Group, it should be noted that the agricultural exports of those countries react very sensitively to the changes of the internal and external economic environment. Responding the most dynamically to the changes in the area of economic growth of the European and world trade is the agricultural trade of Poland and Slovakia (Svatoš and Smutka 2010; Smutka et al. 2011). On the other hand, Hungary has a very limited ability to react to the changes in the external environment. This fact could be viewed as a positive, as it could be interpreted that Hungarian agricultural exports represent a quantity stabilized over time, but in view of the fact that the period from 1993 to 2007 was characterized by a generally prevalent growth of the world economy and trade, it must be said that the Hungarian agricultural sector was unable to take advantage of that development or to make more headway either to the European market or the markets outside the EU (Udovec et al. 2008). The fact that this took place in spite of the fact that Hungary seems to have the most favourable conditions for the development of competitiveness of agriculture of all of the Visegrad Group countries is indicative of the fact that the Hungarian agricultural and food sector suffered in the past and still suffers from serious structural problems, the most important of which is the long-term decline of competitiveness (Svatoš and Smutka 2009a, 2010).

As far as the development of competitiveness of agricultural exports of the Visegrad Group countries is concerned, it may be said that in the recent years, the competitiveness of the individual countries as exporters of individual aggregations representing agricultural and food trade has been developing satisfactorily. Over the years, the commodity structure of agricultural exports has gradually taken shape so that the individual aggregations can be divided basically into two groups. In the first group, there are those aggregations that exhibit a relatively significant ability to compete not only in the market of the EU27 countries, but also beyond it. In the second group, there are the aggregations that are not able to make the headway either in the world market or in that of the EU27 countries – see Figure 1.[2]

Table 6 gives a clear overview of the results of the analyses described above. Particularly apparent are the differences in the distribution of the number of aggregations in different quadrants (according to competitiveness) in the cases of the analyzed countries. The tables also show how the participation of the individual quadrants in the resultant value of agricultural exports changed in the individual analyzed countries during the monitored time period.

In the cases of all analyzed countries, there emerges a group of 15–20 aggregations exhibiting a long-term success, mainly in the European market and partially in the world market as well (Table 7 below shows details concerning competitiveness of the individual aggregations of the Czech, Polish, Slovak and Hungarian exports in the EU and worldwide markets).

The commodity structure of agricultural trade in the case of the Visegrad Group countries is relatively settled into a limited number of aggregations (an exception in this regard is Poland, which has a much more diverse export structure than, for example, the Czech Republic or Slovakia), which constitute the basis of the value of the overall agricultural exports. In the case of the individual countries of the Visegrad Group, the pillars of the present value of agricultural exports are represented by the following aggregations (Table 8) – the share of these aggregations in the resulting value of the exports of the individual countries varies within the range of 60–70%.

If we compare these data with the data characterizing the commodity structures of the individual

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[2]The relevant graphs allow a comparison of the changes of the commodity structure (according to competitiveness in the European and world market) of agricultural exports of the individual countries during the past two decades. The graphs facilitate a comparison of the initial status, i.e. the period of transformation in 1993–1998, and then the final status, i.e. the situation after the entry of the selected countries into the EU in 2004–2008.

analyzed countries from the early 1990s, we find that the present appearance of agricultural exports is very different from what it was originally.

From the results stated above, it follows that the individual countries are constantly seeking out their position within the market of the EU27 countries. At

Czech Republic
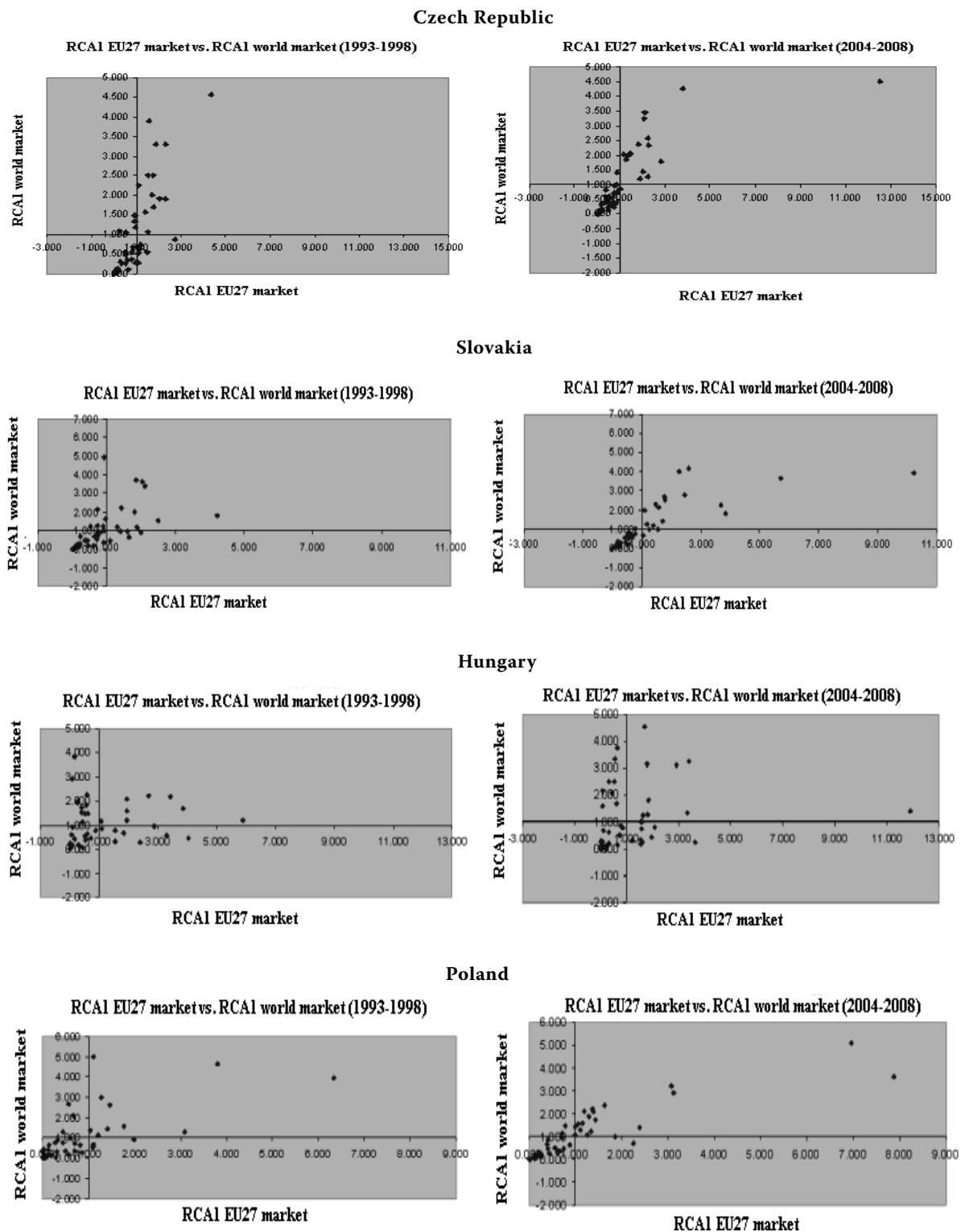

Slovakia

Hungary

Poland

Figure 1. Development of the commodity structure of the Czech Republic, Slovakia, Hungary and Poland according to the competitiveness of the individual aggregations in the market of the EU27 countries and in the world market (incl. the EU27 countries) in 1993–2008

Source: UN Comtrade (2010) + our own calculations

the same time, it can be seen that except for Hungary, which is undergoing a deep structural crisis (Wagner and Juhász 2009), all the countries are making a successful headway in that market. In general, the following may be said in the case of the individual countries belonging to the Visegrad Group.

In the case of Poland, there exists a positive influence from the accession to the EU, which is manifested by a very great strengthening of the standing of the agricultural sector. Because of the removal of trade barriers, the Polish market gained the opportunity to make gains in the markets not only of the old EU members, but especially of the new ones. The result of this development is the overall improvement of the commodity structure of the Polish agricultural busi-

ness and a very strong growth of the value of agricultural exports in particular, positively influencing the Poland's balance of foreign agricultural trade, which has shown a long-term surplus since 2004. During the recent years, in the field of agricultural trade, Poland has become the Central European tiger, with the potential to control events within the context of the regional trade with agricultural production and to continue with the trend of increasing its trade surplus.

In the case of the Czech Republic and Slovakia, it is apparent that the accession to the EU has likewise had a very strong influence on the development of both exports and imports. A positive feature in this regard is the fact that the long-term growth rate of agricultural exports is more or less mirroring the

Table 6. Development of the competitiveness of the commodity structure of agricultural exports of the countries of the Visegrad Group in 1993–2008

Quadrant	The number of aggregations in the individual quadrants		The share of individual quadrants in the total number of traded aggregations (%)		The value of all aggregations in the individual quadrants in USD		The share of individual quadrants in the total value of agrarian export (%)	
	1993–1998	2004–2008	1993–1998	2004–2008	1993–1998	2004–2008	1993–1998	2004–2008
Czech Republic								
I.	5	5	11.4	2.3	1 201 499 579	90 461 967	17.7	0.5
II.	19	19	43.2	61.4	681 679 249	5 496 865 850	10.0	30.9
III.	6	6	13.6	2.3	765 681 983	804 007 957	11.3	4.5
IV.	14	14	31.8	34.1	4 147 500 256	11 390 268 987	61.0	64.1
Total	44	44	100.0	100.0	6 796 361 067	17 781 604 761	100.0	100.0
Slovakia								
I.	6	1	13.6	2.3	506 456 459	161 875 898	20.6	1.9
II.	23	25	52.3	56.8	442 098 939	2 004 350 466	18.0	23.9
III.	5	3	11.4	6.8	264 273 195	503 712 733	10.7	6.0
IV.	10	15	22.7	34.1	1 249 386 354	5 705 677 622	50.7	68.1
Total	44	44	100.0	100.0	2 462 214 947	8 375 616 719	100.0	100.0
Hungary								
I.	3	2	6.8	4.5	1 267 571 000	859 655 000	9.2	3.6
II.	25	24	56.8	54.5	2 711 696 000	5 066 257 000	19.6	21.5
III.	1	3	2.3	6.8	29 984 000	638 554 000	0.2	2.7
IV.	15	15	34.1	34.1	9 793 116 008	17 015 831 000	71.0	72.2
Total	44	44	100.0	100.0	13 802 367 008	23 580 297 000	100.0	100.0
Poland								
I.	4	4	9.1	9.1	1 077 289 202	5 426 723 342	7.4	10.3
II.	25	21	56.8	47.7	3 319 201 214	9 162 959 217	22.8	17.5
III.	4	2	9.1	4.5	853 820 559	1 470 911 312	5.9	2.8
IV.	11	17	25.0	38.6	9 319 163 106	36 433 597 592	64.0	69.4
Total	44	44	100.0	100.0	14 569 474 081	52 494 191 463	100.0	100.0

Source: UN Comtrade (2010) + our own calculations

Table 7. Distribution of the comparative advantages of the commodity structure of agricultural exports of countries of the Visegrad Group in 2004–2008

Czech Republic				Hungary				Poland				Slovakia			
EU RCA1		World RCA1		EU RCA1		World RCA1		EU RCA1		World RCA1		EU RCA1		World RCA1	
Code	RCA1	Code	RCA1	Code	RCA1	Code	RCA1	Code	RCA1	Code	RCA1	Code	RCA1	Code	RCA1
S3-098	12.53	S3-098	4.50	S3-044	11.90	S3-044	5.18	S3-098	7.87	S3-035	5.08	S3-098	10.23	S3-073	4.17
S3-062	3.80	S3-062	4.26	S3-047	3.62	S3-001	3.08	S3-035	6.96	S3-098	3.59	S3-061	5.72	S3-001	4.01
S3-061	2.84	S3-001	3.47	S3-098	3.40	S3-056	2.84	S3-058	3.11	S3-059	3.19	S3-044	3.83	S3-098	3.93
S3-043	2.28	S3-022	3.25	S3-041	3.34	S3-012	2.57	S3-059	3.07	S3-058	2.89	S3-046	3.67	S3-061	3.65
S3-041	2.26	S3-091	2.59	S3-061	2.90	S3-047	2.02	S3-045	2.38	S3-025	2.34	S3-073	2.58	S3-043	2.76
S3-091	2.24	S3-122	2.39	S3-012	2.07	S3-041	2.00	S3-074	2.26	S3-001	2.22	S3-043	2.44	S3-025	2.69
S3-001	2.10	S3-043	2.34	S3-081	1.97	S3-017	2.00	S3-037	1.86	S3-122	2.10	S3-001	2.25	S3-022	2.52
S3-022	2.05	S3-111	2.07	S3-046	1.83	S3-043	1.86	S3-025	1.63	S3-073	2.09	S3-022	1.79	S3-048	2.28
S3-045	2.03	S3-023	2.04	S3-045	1.80	S3-081	1.75	S3-012	1.44	S3-022	1.88	S3-025	1.75	S3-046	2.25
S3-071	1.88	S3-073	1.99	S3-043	1.76	S3-098	1.67	S3-122	1.39	S3-012	1.72	S3-411	1.71	S3-111	2.12
S3-122	1.82	S3-048	1.86	S3-001	1.68	S3-061	1.63	S3-001	1.36	S3-062	1.59	S3-111	1.58	S3-024	1.98
S3-111	1.46	S3-061	1.78	S3-017	1.64	S3-058	1.40	S3-011	1.33	S3-048	1.52	S3-041	1.54	S3-044	1.81
S3-073	1.36	S3-045	1.44	S3-075	1.59	S3-059	1.27	S3-022	1.30	S3-024	1.45	S3-048	1.47	S3-411	1.43
S3-048	1.25	S3-025	1.40	S3-058	1.57	S3-025	1.19	S3-061	1.26	S3-023	1.44	S3-431	1.39	S3-062	1.27
S3-023	1.20	S3-041	1.26	S3-071	1.56	S3-045	1.17	S3-073	1.19	S3-017	1.43	S3-045	1.26	S3-431	1.17
S3-081	1.00	S3-071	1.21	S3-074	1.54	S3-421	1.03	S3-062	1.16	S3-045	1.38	S3-062	1.17	S3-017	1.02
S3-431	0.89	S3-112	0.99	S3-056	1.54	S3-046	1.00	S3-054	1.12	S3-054	1.29	S3-024	1.08	S3-045	0.99
S3-025	0.89	S3-017	0.98	S3-059	1.21	S3-111	0.88	S3-048	1.05	S3-011	1.20	S3-071	1.04	S3-041	0.98
S3-044	0.86	S3-081	0.86	S3-421	0.86	S3-054	0.83	S3-091	1.00	S3-056	1.12	S3-017	0.76	S3-023	0.79
S3-112	0.84	S3-024	0.83	S3-411	0.77	S3-022	0.81	S3-017	0.99	S3-091	1.07	S3-057	0.76	S3-057	0.74
S3-058	0.77	S3-431	0.74	S3-054	0.74	S3-071	0.81	S3-023	0.99	S3-061	1.05	S3-058	0.70	S3-012	0.73
S3-017	0.76	S3-058	0.72	S3-091	0.73	S3-091	0.80	S3-071	0.88	S3-037	0.98	S3-421	0.66	S3-071	0.69
S3-121	0.74	S3-012	0.59	S3-022	0.64	S3-073	0.78	S3-024	0.78	S3-111	0.95	S3-012	0.62	S3-091	0.68
S3-046	0.71	S3-054	0.59	S3-121	0.64	S3-411	0.60	S3-034	0.76	S3-411	0.85	S3-081	0.55	S3-058	0.67
S3-421	0.67	S3-421	0.58	S3-111	0.62	S3-075	0.59	S3-056	0.72	S3-074	0.69	S3-023	0.53	S3-421	0.56
S3-074	0.67	S3-059	0.53	S3-073	0.55	S3-062	0.59	S3-111	0.72	S3-016	0.67	S3-121	0.52	S3-054	0.54
S3-034	0.54	S3-057	0.41	S3-062	0.52	S3-048	0.58	S3-075	0.67	S3-071	0.63	S3-091	0.51	S3-081	0.52
S3-012	0.52	S3-046	0.40	S3-048	0.42	S3-016	0.52	S3-121	0.62	S3-081	0.50	S3-075	0.49	S3-016	0.37
S3-042	0.50	S3-056	0.40	S3-112	0.32	S3-074	0.47	S3-421	0.58	S3-057	0.48	S3-047	0.46	S3-056	0.31
S3-075	0.50	S3-044	0.39	S3-057	0.31	S3-024	0.39	S3-081	0.55	S3-034	0.47	S3-072	0.46	S3-072	0.31
S3-057	0.45	S3-016	0.35	S3-025	0.30	S3-112	0.32	S3-047	0.44	S3-421	0.43	S3-054	0.43	S3-011	0.26
S3-059	0.43	S3-034	0.32	S3-011	0.29	S3-121	0.26	S3-411	0.40	S3-075	0.36	S3-056	0.27	S3-047	0.24
S3-054	0.39	S3-074	0.30	S3-422	0.21	S3-057	0.26	S3-057	0.40	S3-121	0.28	S3-011	0.26	S3-112	0.22
S3-024	0.36	S3-075	0.23	S3-122	0.20	S3-011	0.24	S3-016	0.39	S3-043	0.26	S3-074	0.26	S3-121	0.21
S3-056	0.35	S3-121	0.23	S3-431	0.12	S3-122	0.23	S3-044	0.27	S3-072	0.26	S3-042	0.23	S3-075	0.20
S3-037	0.26	S3-411	0.17	S3-023	0.07	S3-023	0.15	S3-043	0.26	S3-047	0.25	S3-016	0.18	S3-059	0.19
S3-047	0.24	S3-072	0.15	S3-016	0.07	S3-431	0.08	S3-072	0.22	S3-112	0.22	S3-112	0.17	S3-122	0.18
S3-411	0.20	S3-037	0.14	S3-024	0.07	S3-422	0.04	S3-041	0.19	S3-041	0.21	S3-059	0.16	S3-074	0.15
S3-072	0.20	S3-042	0.13	S3-037	0.04	S3-037	0.02	S3-046	0.16	S3-046	0.12	S3-122	0.12	S3-034	0.07
S3-016	0.18	S3-047	0.12	S3-042	0.03	S3-034	0.01	S3-042	0.13	S3-044	0.11	S3-034	0.12	S3-042	0.06
S3-035	0.10	S3-011	0.09	S3-034	0.02	S3-072	0.01	S3-112	0.12	S3-431	0.07	S3-037	0.07	S3-037	0.04
S3-011	0.09	S3-035	0.09	S3-072	0.02	S3-042	0.01	S3-431	0.10	S3-042	0.03	S3-035	0.01	S3-035	0.01
S3-422	0.08	S3-422	0.02	S3-036	0.00	S3-036	0.00	S3-422	0.02	S3-036	0.01	S3-422	0.02	S3-422	0.00
S3-036	0.01	S3-036	0.00	S3-035	0.00	S3-035	0.00	S3-036	0.01	S3-422	0.00	S3-036	0.00	S3-036	0.00

Source: UN Comtrade (2010) + our own calculations

growth rate of agricultural imports, with the result that in the case of the individual countries, the balance of foreign agricultural trade is at least not greatly worsening. Another positive aspect of agricultural trade in these countries is the fact that within the framework of their own commodity structures, they are having an increasing success with commodity aggregations with a higher level of the added value (Horská 2011; Vološin 2011). Nonetheless, regarding the future, one may expect that the standing of agricultural exports within the framework of the national economy will not improve greatly, and that agricultural trade will always be of only a supplementary character within the framework of the national economy and it will be characterized by a trade deficit.

Hungary is the only country in the analyzed countries of the Visegrad Group where agricultural trade as well as the whole agricultural sector faces a massive structural crisis. Over the years, Hungary has gradually lost its primacy as an agricultural exporter within the Central European region (Ferto 2001, Vajda and Baksa 2008; Csáki 2009; Svatoš and Smutka 2010; Smutka et al. 2011). The share of agricultural trade and especially the agricultural trade surplus with respect to the Hungary's overall trading of goods is constantly declining. Because of the restructuring of its own market, Hungary has also lost its ability to compete in the case of a whole range of products, with the result that the Hungarian agricultural market is becoming more vulnerable (Udovec et al. 2008; Wagner and Juhász 2009; Weisz and Péter

2011). This is manifested especially after the accession to the EU, when the Hungarian market opened up to cheap products from other countries (especially from Poland), and although those products are often of a poorer quality than Hungarian products, their low prices have attracted Hungarian consumers suffering from the long-term economic crisis. This has led to a sharp weakening of demand for a whole range of Hungarian products and to worsening of the standing of domestic farmers and manufacturers. It is very difficult to guess what direction the agricultural market and trade in Hungary will take in the future. Without doubt, Hungary has an enormous potential, but the present crisis that the country is facing is gradually liquidating its agricultural sector, and unless there is a radical change to improve the competitiveness of Hungarian agricultural exports, there is a very real threat to the ability of Hungarian agricultural trade to generate a trade surplus.

It can be asserted that the territorial and commodity structure of foreign agricultural trade of the Visegrad Group countries is constantly adapting to the conditions of the integration processes taking place with respect to the market of the EU27 countries. This development is also fortified by the effect of convergence mechanisms and by the growing competition prevailing in the internal market of the EU27 countries.

In future, one may expect that the agricultural trade of the Visegrad Group countries will adapt even more

Table 8. The most important aggregations of agricultural export in 2004–2008

Czech Republic			Hungary			Poland			Slovakia		
SITC code	export in mil. USD	share in the total export (%)	SITC code	export in mil. USD	share in the total export (%)	SITC code	export in mil. USD	share in the total export (%)	SITC code	export in mil. USD	share in the total export (%)
S3-022	2 171.2	12.2	S3-012	3 583.6	15.2	S3-012	5 582.4	10.6	S3-061	833.8	10.0
S3-048	1 358.9	7.6	S3-044	3 049.5	12.9	S3-022	3 587.7	6.8	S3-022	796.5	9.5
S3-112	1 244.9	7.0	S3-081	2 057.2	8.7	S3-054	3 437.7	6.5	S3-048	778.6	9.3
S3-098	975.8	5.5	S3-041	1 781.2	7.6	S3-048	3 319.7	6.3	S3-073	703.4	8.4
S3-122	954.0	5.4	S3-056	1 675.8	7.1	S3-122	2 512.0	4.8	S3-001	481.0	5.7
S3-001	875.2	4.9	S3-061	1 066.2	4.5	S3-058	2 481.5	4.7	S3-024	469.6	5.6
S3-041	825.7	4.6	S3-001	1 034.0	4.4	S3-059	2 374.0	4.5	S3-057	436.3	5.2
S3-081	804.0	4.5	S3-054	984.1	4.2	S3-011	2 311.5	4.4	S3-098	393.4	4.7
S3-061	785.4	4.4	S3-017	777.9	3.3	S3-098	2 294.5	4.4	S3-012	372.4	4.4
S3-073	738.7	4.2	S3-421	757.1	3.2	S3-073	2 218.1	4.2	S3-044	363.9	4.3
TOP 10 total	10 733.9	60.4	TOP 10 total	16 766.6	71.1	TOP 10 total	30 119.0	57.4	TOP 10 total	5 628.9	67.2
Export total	17 781.6	–	export total	23 580.3	–	export total	52 494.2	–	export total	8 375.6	–

Source: UN Comtrade (2010)

to the conditions of the market of the EU countries. In the case of a whole range of aggregates, there will certainly come about a strengthening of their influence within the framework of the national structure of the agricultural market and especially within the context of the European structure. On the other hand, there

Table 9. BCG Matrix evaluation: The analysis of Czech, Hungarian, Polish and Slovak agricultural exports development and structure (period 1993–2008)

	1993–1998	2004–2008		The share on exports value	Growth rate of exports value
Czech agriculture					
The share of individual commodity groups in total agrarian exports (%)	26.22	46.37	Star	above average	above average
	50.04	36.78	Cash cow	above average	below average
	17.11	7.40	Problem children	below average	above average
	6.62	9.46	Dog	below average	below average
The number of aggregations in the various segments of BCG matrix	5	9	Star		
	9	8	Cash cow		
	14	14	Problem children		
	16	13	Dog		
Hungarian agriculture					
The share of individual commodity groups in total agrarian exports (%)	31.80	29.08	Star	above average	above average
	48.45	52.20	Cash cow	above average	below average
	11.48	9.42	Problem children	below average	above average
	8.28	9.30	Dog	below average	below average
The number of aggregations in the various segments of BCG matrix	6	5	Star		
	7	9	Cash cow		
	15	10	Problem children		
	16	20	Dog		
Polish agriculture					
The share of individual commodity groups in total agrarian exports (%)	35.03	33.58	Star	above average	above average
	49.08	52.45	Cash cow	above average	below average
	10.19	9.13	Problem children	below average	above average
	5.70	4.83	Dog	below average	below average
The number of aggregations in the various segments of BCG matrix	9	8	Star		
	8	12	Cash cow		
	18	18	Problem children		
	9	6	Dog		
Slovak agriculture					
The share of individual commodity groups in total agrarian exports (%)	40.44	47.10	Star	above average	above average
	41.75	32.91	Cash cow	above average	below average
	8.48	12.62	Problem children	below average	above average
	9.33	7.37	Dog	below average	below average
The number of aggregations in the various segments of BCG matrix	8	7	Star		
	7	7	Cash cow		
	12	16	Problem children		
	17	14	Dog		

Source: UN Comtrade (2010) + our own calculations

will be a splitting off of a segment of aggregations that will lose their position both with respect to the domestic market and with respect to the regional and global markets. This development will be influenced by the continuing liberalization at the level of both the EU27 countries and of the WTO.

The present form of the commodity structure of agricultural exports of the Visegrad Group countries is changing very dynamically. With the individual countries of the Visegrad Group, we can observe a very sharply different form of the commodity structure of exports in comparison with the situation in the early 1990s.

The Table 9 illustrate the development of the commodity structure of agricultural trade (exports) for each country analyzed. The tables show the dynamics of the changing export structure in the V4 countries. In the case of the Czech Republic (Table 9), among the export pillars, there could be ranked commodities like milk, skim milk and dairy products, flour and cereals, alcoholic beverages, food products, tobacco products, live animals, candies and confectionery, animal feed, wheat, chocolate and cocoa containing products. In many cases, the strong export position

of the above mentioned products is influenced by the fact that they are produced and traded by multinational companies).

Hungary's agricultural exports (Table 9) are currently based on the following product groups: maize, meat, wheat, animal feed, vegetables, live animals, sugar, vegetable fats and oils, milk and dairy products, meat ingredients as well as cereal and flour products.

Among the pillars of Polish agro-food exports (Table 9), we could mention the following product groups: meat, milk and dairy products, fresh vegetables, cereal products and flour, canned fruits and fruit products, fruit and vegetable juices, tobacco products, chocolate and cocoa including products and food ingredients.

In the case of Slovakia (Table 9), the following product groups have been gradually profiled among its agrarian exports pillars: milk and dairy products, cereal products and flour, chocolate and cocoa containing products, cheese and cottage cheese, live animals, sweets, fruit, meat, food products, corn and soft drinks. The commodity structure of the Slovak agricultural exports belongs among the most dynamically changing structures between all members of the Visegrad Group.

Table 10. Basic characteristic development of the VISEGRAD GROUP members' agricultural trade

		Export (value in mil. USD)			Export (volume in 1000 tons)		
		1993	2003	2008	1993	2003	2008
Czech Republic	total value	1 029.50	1 556.57	5 367.32	1 954.29	7 187.17	10 395.49
	USD/kg	0.53	0.22	0.52	x	x	x
Hungary	total value	1 692.00	1 376.27	2 267.22	2 107.69	6 968.30	2 530.33
	USD/kg	0.80	0.20	0.90	x	x	x
Poland	total value	1 543.96	4 173.06	15 803.33	2 792.82	5 175.46	8 924.82
	USD/kg	0.55	0.81	1.77	x	x	x
Slovakia	total value	372.83	633.65	2 292.35	818.06	1 311.12	2 562.18
	USD/kg	0.46	0.48	0.89	x	x	x
		Import (value in mil. USD)			Import (volume in 1000 tons)		
		1993	2003	2008	1993	2003	2008
Czech Republic	total value	981.04	2 380.30	7 035.16	2 114.61	3 506.12	4 860.90
	USD/kg	0.46	0.68	1.45	x	x	x
Hungary	total value	689.20	1 460.93	4 587.48	1 415.38	2 404.43	3 436.11
	USD/kg	0.49	0.61	1.34	x	x	x
Poland	total value	2 078.92	3 565.53	13 482.15	5 930.41	8 944.03	15 685.34
	USD/kg	0.35	0.40	0.86	x	x	x
Slovakia	total value	536.01	1 005.82	3 845.59	1 020.93	1 382.88	3 503.51
	USD/kg	0.55	0.73	1.10	x	x	x

Source: UN Comtrade (2010)

CONCLUSIONS

The value of agricultural exports in the case of all analyzed countries is changing very dynamically. Except for the individual countries EU accession process, the Visegrad Group members' agricultural export value and competitiveness were influenced by many other factors – for example: the GATT Uruguay Round, world price development, new technologies implementation process, integration processes etc. In the recent years, both the value and the volume of the realized export and import (Tables 3 and 10) transactions have grown rapidly. In the case of exports, the individual countries are succeeding in exporting an ever growing volume of production exhibiting in many cases a high degree of processing. The individual countries have gained the possibility of exporting a whole range of manufactured plant products, under the influence of the decline in animal production. At the same time, the individual countries are succeeding in exporting food products as well, and this is related to the fact that the domestic food industry has received support in many cases from foreign investors (for example in the Czech Republic during the last two decades, many originally Czech companies changed their owners, e.g. the Tobacco factory Kutná Hora, the brewery Plzeňský Prazdroj, the chocolate factory Nestlé, the TTD sugar refineries and many others). Regarding future, one may expect in this regard a continuation of the growth trend of both the value and volume of the trades realized. Mentioned should also be one problem that represents a weakness of agricultural trade of most of the Visegrad countries (except for Poland). The weakness is a fact that, on the one hand, helps agricultural trade, but on the other hand, it also represents a possible risk. This involves the gradual specialization of the individual countries in the production of a limited assortment of agricultural commodities and also focusing of the individual countries on the trade only with a limited number of partners. Clearly in the case of the individual partners, there is a reduction of the share of the non-EU countries in the resultant value of agricultural foreign trade, and it is also clear that even within the market of the EU countries, currently including 27 member states, the territorial structure of exports is largely focused on a few key partners, whose share in the resultant value of exports is very great. At this time, nothing else can be expected than that the share of the current EU members in the value of agricultural trade of the Visegrad Group countries will increase at the expense of the trade with the so-called "third countries". The specialization and concentration of the agricultural foreign trade activity is an advantage particularly with respect to transaction costs, but should there occur unexpected changes affecting the individual export branches or partner countries, the entire agricultural sector of the Visegrad Group countries (especially that part of the sector that is dependent on exports) could get into a very serious trouble that could extend beyond the framework of the agricultural sector.

If we take a more detailed look at the individual aggregations constituting the pillars of the individual analyzed countries (the only exception is Poland), we find that a large part of exports is represented by items characterized by a high content of the traded mass, but also low prices per kilogram, from which it follows logically that the kilogram prices of agricultural exports of the individual countries will remain behind the kilogram prices of agricultural and especially foodstuff imports (Smutka et al. 2011) – for details see Table 10.

The accession to the EU and the possibility of selling products in that market have led in the cases of all analyzed countries to restructuring of the commodity structure of exports, and most of the analyzed subjects (the exception in this regard is Hungary) are successfully exporting their products to the market of the EU with a higher degree of processing and with higher kilogram prices. As a consequence of this development and also as a consequence of the overall growth of agricultural prices that we are now witnessing, there is an increase to the unit prices of agricultural exports, especially in the cases of Poland and Slovakia, and to a limited degree in the Czech Republic as well. Towards the future, one may expect that as the individual countries become ever more integrated into the common market of the EU, the prices of agricultural exports will rise. Supporting this trend is the constantly growing demand for agricultural products, especially in developing regions of the world. Also having an influence on the price of exports will be agricultural policy as implemented both by the individual EU countries and by the EU as a whole within the framework of the Common Agricultural Policy and the Common Trade Policy of the EU countries.

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Contact address:

Miroslav Svatoš, Luboš Smutka, Czech University of Life Sciences Prague, Kamýcká 129, 165 21 Prague 6, Czech Republic

e-mail: svatos@pef.czu.cz, smutka@pef.czu.cz