

Czech and Slovak agricultural foreign trade – two decades after the dissolution

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Abstract: Agrarian trade of the Czech Republic and Slovakia has undergone very significant changes in the period since the break-up of Czechoslovakia up to the present, which have influenced its commodity and territorial structure. The process of dividing the state, building a new business structure and the EU accession influenced the current form of Czech and Slovak agricultural trade and also particularly the competitiveness of Czech and Slovak agricultural and foodstuff products in relation to the EU market and also in relation to the world market. The process of transformation of agricultural production and trade in both countries has also affected their relationships. For this reason, the primary objective of this paper is to highlight the changes that have occurred in relation to the Czech and Slovak agricultural trade performance development – and in particular the changes in the mutual export and import operations are analysed. During the period 1994–2010, agricultural exports from the Czech Republic to Slovakia became considerably more dynamic than those in the opposite direction. Czech agricultural and foodstuff products have gradually established themselves and have gained comparative advantages over Slovak agrarian production. As a result of this development, a gradual increase of the negative balance of Slovak agricultural trade has occurred in relation to the Czech Republic. Since the Slovak agrarian sector has in recent years significantly decreased its own production capacity, in the future a continuation of the current trend can be expected.

Key words: agricultural trade, commodities, Czech Republic, development, EU27, export, import, Slovakia, structure, territories, third countries, trend, value, volume

Agrarian foreign trade of the Czech Republic and Slovakia is strongly influenced by the fact that these two states have common roots. In the period before 1918, both countries were firstly part of the Austrian Empire, followed by the Austrian – Hungarian Empire. From 1918 to 1992, both countries were formed into one state, apart from a break during the World War II (Urban 1991).

Both countries, therefore, had mutually strong historical, cultural, political, economic and trade relations. It therefore follows that the two economies were strongly interconnected and dependent on each other both in the period of common States, and in the period that followed the disintegration of the common State, i.e. from 1 January 1993. Note that the dependence in this regard relates to both countries, however, it is appropriate to point out that due to the different sizes of these two economies, Slovakia was more dependent on the Czech economy than vice versa (Vintrová 2008). The break-up of Czechoslovakia

initially had a very significant impact on the economy of both countries.

Economic development in both the Czech Republic and Slovakia was affected by the processes associated with the separation of the common state. The division of the state was particularly apparent in the area of foreign relations, where both countries started to build new relationships related to their traditional external environment as well as relationships between each other. Although the Czech and Slovak Federal Republic managed very quickly to achieve the distribution of property, politics etc., they also managed to build very quickly the necessary infrastructure needed to run their own independent state. In the field of economy – in which the countries were closely interconnected – the process of separation ran more slowly (Klaus et al. 2003). Many Czech companies were dependent on their partners in Slovakia and vice versa.

Companies that were formerly a part of the same economy were used to cooperating and being mutu-

ally supplied with raw materials, semi-finished and finished products. After the division of the common state, this cooperation changed – and particularly its nature changed. There was no longer cooperation at the nationwide level, but cooperation with foreign entities. It follows that many formerly national transfers adopted a new form of foreign trade transactions (export and import). Quite logically, immediately after the collapse of the federal state, the Czech Republic and Slovakia became major mutual trading partners. Their trade was, however, affected by the efforts of both countries to adapt to the new situations. Both countries were competing with each other in terms of trade with a wide range of products that were being produced both in the Czech Republic and in Slovakia. Their trade was influenced by a protectionist policy – in this respect, especially from Slovakia, which attempted to mitigate the negative trade balance with the Czech Republic by this policy.

Immediately after the split, both countries made a concerted effort to adapt to the newly created conditions. An important factor in the development of foreign trade was also the development of the commodity structure, when both countries had to compensate for the fact that the production capacity of the once unified state was now divided between the two States, thus threatening the sovereignty of the individual States in certain products. The process of the division of the Czech and Slovak economies brought a whole series of changes that had a direct impact on the formation of the foreign trade structure. While at the beginning there can be seen a strong dependence of Slovakia on the Czech Republic (Matošková and Gálik 2009), in the values and balance development, over time this dependency slowly began to fade.

It is important to say that after the division of the common state, the bilateral trade was influenced by the different developments occurring during the analysed period. Immediately after the disintegration of the unified state (1993–1998), Slovakia began obstructing the Czech export market, during the period of the preparation for these two economies to join the EU (1999–2004), and no longer there were any major trade restrictive measures accepted. Any trade restrictive measures were then removed after both countries joined the EU in 2004.

To analyse the development and structure of the foreign trade in merchandise of both countries would be a very complex process, therefore, this article focuses only on the development of the mutual trade in agricultural and foodstuff products. In this respect, it should be emphasized that during the years 1993–2011, the mutual trade in agricultural products has undergone very significant changes.

OBJECTIVE AND METHODOLOGY

The aim of this paper is to analyse the development of the agrarian foreign trade of the Czech Republic and Slovakia in the period 1993–2010, with the purpose of identifying changes that have occurred in the field of the territorial and commodity structure of agricultural trade for both countries in relation to their mutual trade exchange, and the territorial and commodity structure of their agricultural trade in relation to other countries (the main emphasis is devoted to the EU27 countries). Another objective is to highlight the changes that have occurred between the two surveyed economies in terms of the values and structures development of the actual mutual export and import operations.

The article focuses, in this regard, not only on the trade value development, but it analyses the share of the mutual trade in the total agricultural trade between the Czech Republic and Slovakia. A special attention is paid to the development of the agricultural trade balance, and in particular the mutual trade competitiveness is analysed. In this regard, the paper identifies those segments of commodities, which are reflected in the comparative advantage of the Czech Republic, and those other segments, where the comparative advantage in terms of trade is in the favour of Slovakia.

In terms of the methodology, the analysis focuses not only on the development of the mutual agricultural trade of the Czech Republic and Slovakia, but there is also an analysis of the development of agricultural trade in relation to the EU27 countries. It is also important to mention that in the analytical terms, the entire text is compiled from the viewpoint of the development of agricultural trade and other related variables relating in the time frame covering the period 1994–2010. The United Nations UN COMTRADE database was selected as the central source of data. The selected database enables monitoring of the development of the goods trade according to the Standard International Trade Classification (SITC). The selected nomenclature enables the classification of the goods trade into ten basic commodity classes.

For the analysis, the currency of the U.S. Dollar was chosen – mainly because the UN Comtrade database contains data in the Dollar terms, and this currency is chosen because it represents a neutral resource to express the value of transactions – trade flows between the Czech Republic and Slovakia are in the terms of conversion to a single currency loaded with approximately the same error.

One of the most important objectives of this paper is the analysis of the agricultural trade competitiveness

Table 1. List of aggregations representing the commodity structure of agricultural trade

S3-00	LIVE ANIMALS	S3-08	ANIMAL FEED STUFF
S3-01	MEAT, MEAT PREPARATIONS	S3-09	MISC.EDIBLE PRODUCTS ETC
S3-02	DAIRY PRODUCTS,BIRD EGGS	S3-11	BEVERAGES
S3-03	FISH,CRUSTACEANS,MOLLUSC	S3-12	TOBACCO,TOBACCO MANUFACT
S3-04	CEREALS, CEREAL PREPRTNS.	S3-41	ANIMAL OILS AND FATS
S3-05	VEGETABLES AND FRUIT	S3-42	FIXED VEG. FATS AND OILS
S3-06	SUGAR,SUGR.PREPTNS,HONEY	S3-43	ANIMAL,VEG.FATS,OILS,NES
S3-07	COFFEE,TEA,COCOA,SPICES		

Source: UN COMTRADE (2012)

in the case of the Czech Republic and Slovakia, for the purposes of a more detailed analysis, the agrarian trade is divided into 15 aggregations (Table 1) that allow a more detailed analysis of the structure of agrarian trade of the individual countries.

The analysis focuses on the development of the value and structure of exports, imports and balance of agricultural trade of the Czech Republic and Slovakia, not only in the terms of the bilateral trade, but also against the background of agricultural trade in the world and the EU countries.

The analysis applies basic statistical characteristics such as the base index, chain index and the geometric mean. The majority of the analyses is also processed through indices characterising comparative advantage of Czech agricultural exports (in this paper, the modified Balassa's RCA indexes and the Lafay index are applied).

Competitiveness or comparative advantage in relation to the EU market and to the "third countries" is calculated using the following index RCA1 (Standard Balassa's RCA index – Balassa, 1965):

$$RCA_{ij}^1 = \frac{X_{ij}}{\sum_i X_{ij}} \bigg/ \frac{\sum_j X_{ij}}{\sum_i \sum_j X_{ij}}$$

where X_{ij} represents the country i 's export of product j . $RCA_{ij}^1 > 1$ indicates that the country i has a comparative advantage in production of j ; the greater the index, the stronger the advantage. $RCA_{ij}^1 < 1$ indicates that the country i has a comparative disadvantage in production of j ; the smaller the index, the greater the disadvantage (Hinloopen and Marrewijk 2001; Qineti et al. 2009; Burianova 2010).

This analysis of the agricultural exports competitiveness is supplemented by the agrarian trade competitiveness analysis between the Czech Republic and Slovakia, and then between the two surveyed economies and other member countries. The comparative

advantage of the individual items of the Czech and Slovakian agrarian exports at the bilateral level is analysed using the Lafay index (Lafay 1992).

Apart from the export flows, the Lafay index (hereinafter only the LFI index) also takes into account the import flows. As opposed to the standard RCA index, its advantage is its ability to take into account the inter-sectoral trade and also the re-exports. In this respect, its information value is stronger as compared to the traditional index of the obvious comparative advantage (Balassa 1965). The advantage of the LFI index as compared to the RCA index is also its ability to include any distortions caused by macroeconomic fluctuations (Fidrmuc et al. 1999).

The LFI index enables the analysis of the position of every specific product within the foreign trade structure of every specific analysed country or group of countries (Zaghini 2003). For a given "i" country and for every "j" analysed, a product or a group of products is defined in the following formula:

$$LFI_j^i = 100 \left[\frac{x_j^i - m_j^i}{x_j^i + m_j^i} - \frac{\sum_{j=1}^N (x_j^i - m_j^i)}{\sum_{j=1}^N (x_j^i + m_j^i)} \right] \frac{x_j^i + m_j^i}{\sum_{j=1}^N (x_j^i + m_j^i)}$$

where: x_j^i and m_j^i represent exports and imports of "j" product achieved by "i" country or a group of countries with respect to the rest of the world or with respect to a selected business partner (partner country). N is the number of the analysed items (Zaghini 2003).

The positive value of the LFI index indicates the existence of a comparative advantage within the analysed traded aggregation or a group of aggregations in question. The higher the resulting value of the index, the higher is the level of specialisation of the country in question as regards its trade with the given item or a group of items representing (in this case) the agrarian and food trade. Similarly, the negative value of the LFI index signals that the specialisation and hence comparative advantages are lacking (Zaghini 2005).

RESULTS AND DISCUSSION

The following text deals with the changes that have occurred in Czech and Slovak agricultural trade. The text is organised as follows. First, the changes in agricultural trade are introduced, which occurred between 1994 and 2010 in the case of the Czech Republic, followed by the case of Slovakia.

The second part of the analysis is devoted to the changes that have occurred in the mutual trade with agricultural and foodstuff products in both countries. Agrarian foreign trade of the Czech Republic and Slovakia underwent a number of very substantial changes between 1993 and 2010. Although the value of agricultural trade in both countries is developing very dynamically, the development significantly lags particularly in relation to the trade with processed industrial products (Table 2).

The share of agricultural trade in the total trade in the case of the Czech Republic and Slovakia has significantly reduced over time. In 1994, agricultural trade represented, in the case of the Czech Republic around 7.8% of the total merchandise trade (share of turnover), and 7% in the case of Slovakia. In 2010, agricultural trade of both countries contributed to the total value of the merchandise trade by only 4.5% and 5.2%, respectively. This development was influenced by the significantly lower growth rate of the agricultural trade value compared to the growth rate of the total value of the merchandise trade for both countries. An important characteristic of the development of agricultural trade of both countries is the steadily growing negative agricultural trade balance.

Brief characteristics of Czech agricultural trade

During the period 1994–2010, the dollar value of Czech agricultural trade in the case of exports grew from about 1 billion USD to about 5 billion USD, and in the case of imports, there was an increase from approximately 1.3 billion USD to more than 6.6 billion USD. This means that Czech agricultural trade is characterised by a long-term negative agricultural trade balance due to the significantly higher dynamics of growth in the value of agricultural imports in comparison to the dynamics of growth of the value of agricultural exports, and also due to the gradual decrease in agricultural production in the Czech Republic (Vološin et al.2011).

The negative phenomenon is in this regard the specific structure of Czech agricultural trade, where exports largely comprise of products with the low level of processing and lower levels of unit prices, while imports are, however, represented by the products with a higher degree of processing (often already finalised products) and the kilogram prices are significantly higher (Burianová 2010; Pohlová 2012). In the period immediately preceding the global economic crisis (Junková and Matušková 2011), kilogram prices (2008) of Czech agricultural exports (0.52 USD) covered kilogram prices of imports (1.45 USD) by only 36% (Smutka and Belova 2011).

The negative influence on the development of agricultural trade was particularly noticeable in the period 1993–2003. In this period, the value of Czech agrarian imports grew faster in comparison to the value of agricultural exports. The most significant

Table 2. Development of the value of Czech and Slovak agrarian foreign trade (in bill. USD)

Czech Republic			1993	1994	1998	2002	2004	2008	2010
Export	world	agriculture	1.029	0.964	1.249	1.404	2.181	5.527	4.938
Import	world	agriculture	0.981	1.285	1.799	2.016	3.27	7.1	6.654
Balance	world	agriculture	0.048	-0.321	-0.55	-0.612	-1.089	-1.573	-1.716
Turnover	world	agriculture	2.01	2.249	3.048	3.42	5.451	12.627	11.592
The share of the deficit in the import (%)			4.89	-24.98	-30.57	-30.36	-33.30	-22.15	-25.79
The share of the deficit in the turnover (%)			2.39	-14.27	-18.04	-17.89	-19.98	-12.46	-14.80
Slovakia			1993	1994	1998	2002	2004	2008	2010
Export	world	agriculture		0.373	0.422	0.490	0.978	2.365	2.488
Import	world	agriculture		0.563	0.833	0.889	1.469	3.971	3.969
Balance	world	agriculture		-0.190	-0.410	-0.398	-0.492	-1.606	-1.481
Turnover	world	agriculture		0.936	1.255	1.379	2.447	6.336	6.457
The share of the deficit in the import (%)				-33.78	-49.25	-44.84	-33.45	-40.44	-37.31
The share of the deficit in the turnover (%)				-20.32	-32.67	-28.90	-20.09	-25.35	-22.94

Source: UN COMTRADE (2012), own processing

Table 3. Development of value, structure and dynamics of Czech agricultural trade in relation to the EU27 and “third countries” (in mill. USD)

Partner	1994	1999	2003	2010	Growth rate			Index	
					1994–1998	1999–2003	2004–2010	2003/1994	2010/1994
					Import EU27	931.75	1 152.7	1 864.2	5 637.97
Export EU27	714.65	794.96	1 350.9	4 511.95	1.051	1.092	1.303	1.89	6.314
Import Third countries	353.01	477.08	568.58	1 016.38	1.124	1.002	1.146	1.611	2.879
Export Third countries	249.28	219.06	272.94	425.59	1.109	0.937	1.103	1.095	1.707

Source: UN COMTRADE (2012), own processing

difference may be found in the period 1993–1998, when the growth rate of agricultural exports reached only 3.9% per year, whereas the growth rate of the agricultural imports reached about 13% per year. In the period 1999–2003, such significant differences between the growth rate of the value of agricultural exports (5.4% per year) and imports (6.2%) did not occur.

As a result of the above, it can be stated that the balance of agricultural trade in the Czech Republic during the analysed period has continuously deteriorated (in 1994, the value of balance was about 321 million USD, and in 2003 it had become more than 800 million USD). The accession to the EU in 2004 represented an important turning-point (Burianová and Belová

2012) in the development of Czech agricultural trade. The growth rate of the exports and imports values greatly accelerated. The average value of the growth rate of exports in the period 2004–2010 was around 17.2% per year, which for the first time in history exceeded the growth rate of the value of agricultural imports (15.5% per year).

The EU accession led in the case of Czech agricultural trade to a very significant increase in the value of both exports and imports, however, considering the higher growth in the value of exports in the case of the Czech Republic, a decline in the growth dynamics of the negative agricultural trade balance is clearly seen – the negative balance gradually stabilised at a level of about 1.7 billion USD. A specific feature of

Table 4. Changes in the commodity structure of agricultural foreign trade of the Czech Republic in 1994–2010 (million USD)

	EU27 countries						Third countries					
	import		export		balance		import		export		balance	
	1994	2010	1994	2010	1994	2010	1994	2010	1994	2010	1994	2010
S3-00	23.47	81.3	56.21	199.5	32.7	118.2	0.8	1.2	6	32.3	5.2	31.1
S3-01	48.22	893.6	32.83	328.4	-15.4	-565.3	5.4	94.7	13.4	15.6	8	-79.1
S3-02	40.56	605.2	137.09	611	96.5	5.8	3.7	2.1	45.1	85	41.4	82.9
S3-03	44.89	95.6	24.37	87.4	-20.5	-8.2	17.6	99	0.7	1.6	-16.9	-97.4
S3-04	66.14	486.3	55.78	721.4	-10.4	235	11.7	26.8	28.8	48.9	17.1	22
S3-05	263.48	1104	100.63	376.1	-162.9	-727.9	106.6	425.8	34.1	41.4	-72.5	-384.4
S3-06	19.59	199.4	37.01	253.8	17.4	54.4	2.1	16.7	22.2	43	20.1	26.3
S3-07	75.77	511.3	35.21	334.7	-40.6	-176.6	91.9	92.5	25.5	26.9	-66.4	-65.6
S3-08	62.7	364	43.29	251	-19.4	-113	58.8	53.9	0.4	23.3	-58.5	-30.6
S3-09	83.39	488.2	35.47	346.7	-47.9	-141.6	12	69.9	13.9	38.4	1.9	-31.4
S3-11	64.65	393.2	80.13	381.4	15.5	-11.8	2.9	65.9	32.3	63.2	29.4	-2.8
S3-12	89.8	216.5	37.04	396.1	-52.8	179.7	34.4	48.2	24.2	4.7	-10.2	-43.6
S3-41	7.79	20.7	3.46	3.7	-4.3	-17.1	0.2	0.4	0.1	0	-0.1	-0.4
S3-42	33.05	132.5	16.86	201.7	-16.2	69.1	4.5	15.6	1.3	0.4	-3.2	-15.2
S3-43	8.25	46.1	19.26	19.1	11	-26.9	0.3	3.6	1.2	1	0.9	-2.7

Source: UN COMTRADE (2012), own processing

agrarian trade of the Czech Republic is its significant territorial orientation at the EU countries which are the major suppliers of both agricultural and foodstuff products on the domestic market, as well as being the main customers of the agrarian and food exports (Table 3).

Table 3 shows a steadily decreasing proportion of third countries in the value of the actual exports and imports. A significant reduction of their share is also observed, especially since the accession of the Czech Republic into the EU in 2004. If we analyse Czech agricultural trade, it is appropriate to point out significant changes in the commodity structure that occurred during the analysed period (Table 4).

The above table shows that the changes affected the commodity structure of Czech agricultural trade as a whole. However, it is appropriate to note that the changes in the commodity structure affected the trade with third countries more significantly. In this respect, it is worth remembering that the negative balance of trade in relation to the third countries is very high in relation to the share of third-countries in the total Czech agricultural trade. An explanation for this can be found in the fact that while most imports from the EU27 countries are represented by competitive products, in the case of the third countries imports comprise mostly of

non-competitive products (Bašek and Kraus 2009; Vološin et al. 2011).

A specific feature of the Czech agricultural trade is its competitiveness. In this respect, it is important to distinguish the comparative advantage of the trade in two areas. The first area is the market of the EU countries which represents for the Czech Republic the most significant territory of own production sales. The second area is the trade with the third countries (Drabik and Bartová 2008; Lukas and Poschl 2004).

Table 5 provides an overview of the development of comparative advantages of the Czech agricultural trade between 1994 and 2010. The table shows that Czech agricultural trade as a whole has no comparative advantage either in relation to the EU27 market or in relation to third countries. However, the individual segments are able to gain a comparative advantage. The Czech Republic in relation to the EU27 countries has been showing in the long run comparative advantages in the case of the following aggregations: live animals, milk and dairy products, cereals, sugar and confectionery, stimulants, food, beverages and tobacco, tobacco products. In relation to the “third countries”, the Czech Republic achieves comparative advantage only in the case of the aggregations of: live animals, milk and dairy products, sugar and confectionery and drinks.

Table 5. The development of comparative advantages of the Czech agricultural trade (RCA index) in relation to the EU27 market and in relation to the “third countries”

	CR vs. EU27 RCA1										CR vs. Third countries RCA1									
	1994	1996	1998	2000	2002	2004	2006	2008	2010	1994	1996	1998	2000	2002	2004	2006	2008	2010		
S3-00	2.17	1.34	2.00	1.04	1.39	2.25	1.92	1.99	1.66	1.27	1.30	2.23	0.95	0.86	0.97	1.23	3.82	6.02		
S3-01	0.30	0.32	0.49	0.32	0.38	0.45	0.42	0.49	0.52	0.60	0.37	0.59	0.12	0.47	0.06	0.10	0.20	0.39		
S3-02	1.51	1.25	0.84	0.90	0.66	0.98	1.44	1.29	1.19	4.29	6.42	5.82	7.65	8.56	6.91	4.46	4.86	4.11		
S3-03	0.63	0.68	0.52	0.44	0.46	0.41	0.33	0.31	0.33	0.02	0.03	0.05	0.03	0.05	0.05	0.03	0.04	0.04		
S3-04	0.80	1.12	1.16	1.74	1.34	1.13	1.54	1.54	1.60	0.85	0.89	0.72	2.03	0.58	1.23	1.42	0.55	0.88		
S3-05	0.74	0.64	0.48	0.49	0.36	0.45	0.45	0.41	0.45	0.92	0.95	0.64	0.46	0.45	0.51	0.63	0.60	0.58		
S3-06	1.91	1.51	1.27	1.83	2.48	4.93	3.25	2.28	2.06	1.96	0.40	1.35	1.69	2.54	2.03	3.03	1.91	1.97		
S3-07	0.92	1.08	1.78	1.80	1.61	1.56	1.28	1.14	1.08	1.28	1.10	0.54	0.13	0.28	0.74	0.64	1.04	0.80		
S3-08	1.35	1.38	1.02	1.17	0.93	0.96	1.06	1.08	1.16	0.03	0.04	0.10	0.14	0.41	0.40	0.55	0.58	0.91		
S3-09	0.92	1.51	1.85	1.73	2.10	1.89	1.73	1.72	1.29	1.45	1.82	1.45	0.74	0.74	1.51	1.49	1.74	1.68		
S3-11	1.23	1.31	1.12	1.24	1.20	1.04	1.06	0.95	0.94	1.87	1.67	1.04	1.09	1.45	1.49	1.86	2.60	2.06		
S3-12	1.39	1.74	2.57	1.65	3.09	1.09	0.90	2.14	2.27	1.34	1.15	3.04	1.12	1.48	0.82	0.50	0.74	0.35		
S3-41	1.29	0.38	0.09	0.38	0.10	0.22	0.26	0.16	0.19	0.06	0.10	0.02	0.01	0.03	0.18	0.03	0.12	0.01		
S3-42	0.98	0.84	0.77	0.94	0.36	0.30	0.65	0.63	1.38	0.10	0.08	0.07	0.17	0.44	0.09	0.03	0.28	0.01		
S3-43	2.93	2.24	2.68	1.84	1.30	1.22	0.92	0.74	0.51	0.49	0.31	1.00	0.11	0.32	0.14	0.13	0.31	0.22		
Agriculture total	0.55	0.42	0.37	0.41	0.35	0.38	0.43	0.45	0.42	1.08	1.01	1.23	1.00	0.52	0.59	0.45	0.31	0.28		

Source: UN COMTRADE (2012), own processing

Table 6. Selected characteristics of Slovak agricultural trade in relation to the EU27 countries and the “third countries” (mil. USD)

	Partner	1994	1999	2003	2011	Growth rate			Index	
						1994–1998	1999–2003	2004–2011	2003/94	I 2010/94
Import	EU27	426.9	585.8	844	2 817.2	1.121	1.046	1.292	1.977	6.6
Export	EU27	293.2	309.4	574.9	2 391.3	1.034	1.114	1.312	1.961	8.156
Import	third countries	136.1	130.7	190.1	1 151.6	1.037	1.038	1.376	1.396	8.459
Export	third countries	79.6	61.2	82	96.6	1.022	0.989	1.09	1.03	1.213

Source: UN COMTRADE (2012), own processing

Brief characteristics of Slovak agricultural trade

Slovak agricultural trade value developed very dynamically during the analysed period as in the case of the Czech Republic. The dollar value of the exports and imports increased from about 370 million USD to about 2.5 billion USD, and from 563 million USD to nearly 4 billion USD, respectively. A positive feature of the Slovak agricultural trade is that the growth rate of agricultural exports is able to keep up with the pace of the growth of agricultural imports. In the period 1994–2010, the average growth rate of agricultural exports reached about 13.8% per year, in the case of imports, the growth rate was about 13.4% per year. Slovakian agrarian exports have been keeping a more dynamic growth of their value in comparison to the growth of the imports value over the period

1999–2003 (the critical period for the development of Slovak agricultural trade was between 1993 and 1998, as a result of the transformation (Pokrivčák and Drabik 2008)). The Slovak agricultural and food sector stagnated in agricultural exports and the growth rate of its dollar value and was even negative (–1% per year) compared to the imports, which increased their dollar value (5% per year).

The accession into the EU in 2004 supported the growth of the actual values. It should, however, be pointed out that despite the increasing value of Slovak agricultural exports (from 2004 to 2010 about 19.3% per year), largely influenced by the presence of large multinational firms operating on the Slovak market (Horská 2011), the situation in the agricultural trade balance has not improved much since the value and volume of imports (from 2004 to 2010 about 18.3% per

Table 7. Changes in the commodity structure of agricultural foreign trade of Slovakia in 1994–2010 (mil. USD)

	EU 27						Third countries					
	import		export		balance		import		export		balance	
	1994	2010	1994	2010	1994	2010	1994	2010	1994	2010	1994	2010
S3-00	13	32.6	26.9	152	13.9	119.4	0.7	46.7	3.4	14.3	2.6	–32.5
S3-01	17.1	400.1	15.6	227.9	–1.5	–172.2	1.2	158.9	3.1	3.5	1.9	–155.4
S3-02	27.2	314.4	23.1	320.4	–4.1	6	0.7	96.6	13.8	9.1	13.1	–87.5
S3-03	18.5	42.2	2	9.8	–16.5	–32.4	9.3	34.1	0.1	0.1	–9.2	–34
S3-04	39.8	289.5	49.1	452.8	9.3	163.3	10.5	108.8	11.8	11.4	1.3	–97.4
S3-05	70.3	459.9	69.6	177.6	–0.7	–282.3	37.9	228.2	7.4	5.3	–30.5	–222.9
S3-06	25.2	149.6	11.3	363.5	–13.9	213.9	0.5	109	8.3	6.3	7.8	–102.7
S3-07	44.2	270.6	22.6	292.7	–21.6	22.1	43.3	101.2	12.5	18.7	–30.8	–82.5
S3-08	36.4	95.2	10.3	57.7	–26.2	–37.5	18.7	63.3	0.5	5.5	–18.1	–57.7
S3-09	38.1	223.4	9.2	143	–28.9	–80.4	6.1	71.9	2.7	17.7	–3.4	–54.2
S3-11	37	247.3	20.5	87.6	–16.5	–159.6	0.5	91	15.3	3.6	14.8	–87.4
S3-12	41.6	121.6	26.5	5.4	–15.1	–116.2	6.3	9.5	0.5	0	–5.8	–9.5
S3-41	1	16.8	2.2	11.1	1.2	–5.7	0.1	3.4	0	0.6	–0.1	–2.7
S3-42	10	119.4	2.3	63.6	–7.7	–55.9	0.3	25.7	0.2	0.6	–0.1	–25.1
S3-43	7.4	34.6	2.1	26.2	–5.3	–8.4	0.2	3.5	0	0	–0.1	–3.5

Source: UN COMTRADE (2012), own processing

year) are also growing dynamically, particularly due to the decrease of the agricultural and food production in Slovakia (currently the rate of self-sufficiency of the Slovak market is only between 40% and 50%).

As in the case of the Czech Republic, also in the case of Slovakia the negative phenomenon of the agrarian foreign trade exchange is the commodity structure of exports. Exports consist of products with lower levels of processing and lower levels of unit prices (in this respect, it is worth noting that the kilogram prices of Slovak agricultural exports are considerably higher compared to kilogram prices of Czech agricultural exports (Smutka and Belova 2011)), while, on the contrary, imports are represented by products with a higher degree of processing. Kilogram prices of Slovak agricultural exports in 2008 were about 0.89 USD and covered kilogram prices of imports (1.1 USD) significantly better than in the case of the Czech Republic – by about 80%. A separate chapter in the development of agricultural trade balance of the SR is the trade exchange. The negative value of trade balance, despite the high growth rate of the agricultural exports value, is constantly increasing mainly due to the higher base value of imports compared to exports. While in 1993 the deficit was 190 million USD, in 2010 it was already about 1.5 billion USD.

As in the case of the Czech Republic, a specific feature of the agrarian trade of Slovakia is its distinctive territorial orientation in relation to the EU countries. Table 6 provides an overview of the performance of the agricultural trade in relation to the current EU27 countries and in relation to the third countries. The table shows a continuously decreasing proportion of third countries, particularly in the value of the actual exports.

Besides the changes in the territorial structure of agricultural foreign trade of Slovakia, it is necessary to highlight the significant changes that affected the formation of the agricultural trade commodity structure (Table 7).

As in the case of the Czech Republic, Slovak agrarian exports do not have a comparative advantage, neither in relation to third countries, nor in relation to the EU27 countries (Table 8). Only some segments reached comparative advantages. In the case of the EU27 market, the exports of the following aggregations displayed a long-term comparative advantage: live animals, milk and dairy products, cereals, confectionery, stimulants, selected condiments and animal fats and oils. In the case of trade with the third countries, Slovak exports have a comparative advantage in the following groups of aggregates: live animals, milk, dairy products, cereals, confectionery,

Table 8. The development of comparative advantages of Slovak agricultural trade (RCA index) in relation to the EU27 market and in relation to the “third countries”

	SR vs. EU27 RCA1								SR vs. Third countries RCA1								
	1994	1998	2000	2002	2004	2006	2008	2010	1994	1996	1998	2000	2002	2004	2006	2008	2010
S3-00	2.53	1.70	1.66	2.03	2.39	2.25	1.96	2.39	2.23	1.11	4.25	2.63	1.23	2.82	3.18	9.48	11.70
S3-01	0.35	0.15	0.11	0.20	0.48	0.53	0.54	0.68	0.44	0.31	0.40	0.06	0.08	0.02	0.12	0.33	0.38
S3-02	0.62	0.68	1.03	1.20	1.25	1.36	1.67	1.18	4.10	3.15	4.48	5.27	3.90	2.61	1.04	2.43	1.93
S3-03	0.12	0.14	0.08	0.08	0.10	0.08	0.08	0.07	0.01	0.02	0.01	0.00	0.01	0.01	0.01	0.01	0.01
S3-04	1.71	2.53	1.95	1.88	1.56	2.19	1.93	1.90	1.09	1.55	0.85	1.55	1.81	2.66	3.04	1.30	0.91
S3-05	1.25	0.55	0.50	0.54	0.48	0.56	0.55	0.40	0.62	0.52	0.37	0.15	0.29	0.32	0.30	0.59	0.32
S3-06	1.42	3.00	2.40	2.89	4.26	4.45	3.14	5.57	2.30	0.56	1.41	0.50	1.97	0.82	4.72	0.85	1.26
S3-07	1.43	1.04	1.31	2.07	2.00	1.72	1.92	1.78	1.98	1.26	1.22	2.62	2.31	2.16	0.98	2.42	2.46
S3-08	0.78	2.00	1.80	0.83	0.57	0.51	0.71	0.51	0.12	0.10	0.16	0.38	0.65	1.32	0.67	0.45	0.95
S3-09	0.59	1.34	2.34	1.58	1.21	1.26	1.20	1.01	0.89	3.82	3.11	3.95	3.26	2.01	1.43	2.60	3.40
S3-11	0.77	0.49	0.71	0.88	0.62	0.46	0.48	0.41	2.77	2.84	1.54	0.40	0.27	0.48	0.53	0.68	0.52
S3-12	2.42	2.14	1.68	0.84	0.62	0.06	0.00	0.06	0.08	0.14	0.48	0.00	0.53	0.22	0.00	0.00	0.00
S3-41	2.04	1.18	2.90	4.44	2.96	1.63	1.05	1.11	0.00	0.00	0.02	0.00	0.88	0.01	0.00	1.12	1.36
S3-42	0.32	0.98	0.89	1.07	1.16	0.52	0.26	0.82	0.04	0.03	0.66	0.45	0.16	0.17	0.00	0.02	0.08
S3-43	0.77	1.16	1.88	0.56	2.08	0.98	1.08	1.33	0.05	0.89	2.78	0.42	0.03	0.22	0.01	0.08	0.00
Agriculture total	0.46	0.36	0.35	0.37	0.43	0.51	0.41	0.44	0.84	1.30	0.94	0.70	0.59	0.39	0.47	0.21	0.15

Source: UN COMTRADE (2012), own processing

Table 9. Agrarian export between the Czech Republic and Slovakia, including the resulting balance (in bill. USD F.O.B.)

			1994	1996	1998	2000	2002	2004	2006	2008	2009	2010
CR export	Slovakia	agriculture	0.219	0.306	0.321	0.264	0.413	0.549	0.877	1.556	1.32	1.432
SR export	Czech Republic	agriculture	0.205	0.17	0.172	0.154	0.209	0.351	0.543	0.773	0.725	0.684
Balance in relation to the CR v bill. USD			0.014	0.136	0.149	0.11	0.204	0.198	0.334	0.783	0.595	0.748

Source: UN COMTRADE (2012), own processing

stimulants, and selected condiments. Generally, if we compare the results of comparative advantages of Slovak and Czech agricultural trade, these are based on similar fundamentals. It follows that the Czech Republic and Slovakia are very strong competitors in the terms of trade.

Czech Republic vs. Slovakia – development of the mutual agricultural trade in period 1994–2010

The Czech Republic and Slovakia are very closely linked in the trade in agricultural products. From the perspective of Slovakia, the Czech Republic is the largest trading partner in the terms of agricultural trade. From the perspective of the Czech Republic, Slovakia is currently the third most important partner in the terms of imports and first in the terms of the actual exports. It can be seen, however, that over the years, despite the increase in the value of the actual exports and imports, the dependence of Slovakia on the Czech Republic as the dominant partner began to decrease. The share of imports from the Czech Republic in the total Slovak agrarian imports decreased from 35.6% to about 23.4%. In the case of exports, the share of the Czech Republic declined from 55% to about 27.5%. From the perspective of the Czech Republic, the situation is somewhat different. The share of Slovakia in Czech agrarian imports is steadily decreasing (from 13.4% in 1994 to 7.5% in

2010), but the share of Slovakia in the Czech agricultural exports is growing steadily. In the analysed period, the share of Slovakia increased from 22.7% to almost 29%.

The value of agricultural trade between the Czech Republic and Slovakia is increasing very dynamically (Tables 9 and 10). The actual value (Table 9) of Czech agricultural exports in the years 1994 to 2010 increased from about 220 million USD to more than 1.4 billion USD. Slovak exports in the reverse direction also grew dynamically from 205 million USD to 700 million USD in 2010. Table 10 shows that Czech exports to Slovakia in the period 1994 to 2010 increased their value by about 9.9% per year. Slovak exports to the Czech Republic increased less dynamically, but still very significantly (7.8% per year). The highest growth of Czech exports was recorded in the period after the accession of both countries into the EU, while the Slovak agrarian export reached its highest pace during the period of the preparation for the EU accession. In general, the higher growth rate of Czech exports in comparison to Slovak exports leads in the long-term to a deterioration of the balance of the mutual trade against Slovakia. The dollar value of the negative Slovak agricultural trade balance in the analysed period has shown a five-fold increase, which in 2010 reached approximately 750 million USD.

The commodity structure (Table 11) of the mutual trade between the Czech Republic and Slovakia is very varied. At present, the dominant categories

Table 10. Characteristics of the mutual Czech and Slovak exports

		Growth rate				Index	
		1994–1998	1999–2003	2004–2010	1993–2010	2003/94	2010/94
Czech export							
Agriculture	Slovakia	1.022	1.041	1.203	1.099	1.797	6.542
Slovak export							
Agriculture	Czech Republic	0.955	1.166	1.118	1.078	1.638	3.335
Balance of the mutual agrarian trade							
CR vs. SR		1.821	0.955	1.301	1.285	8.733	55.067

Source: UN COMTRADE (2012), own processing

Table 11. Commodity structure of the mutual Czech and Slovak agrarian foreign trade in %

	Share in export CR into SR			Share in export SR into CR			
	1994	2010	index 2010/94	1994	2010	index 2010/94	
S3-00	3.40	2.20	-35.29	S3-00	3.96	2.48	-37.37
S3-01	3.22	15.51	381.68	S3-01	3.79	11.52	203.96
S3-02	8.74	9.95	13.84	S3-02	4.32	12.25	183.56
S3-03	2.66	2.58	-3.01	S3-03	0.63	0.81	28.57
S3-04	8.36	8.37	0.12	S3-04	18.79	14.99	-20.22
S3-05	5.22	17.19	229.31	S3-05	24.78	12.80	-48.35
S3-06	9.20	3.13	-65.98	S3-06	3.40	8.06	137.06
S3-07	12.26	6.90	-43.72	S3-07	10.34	13.48	30.37
S3-08	4.12	4.45	8.01	S3-08	2.94	1.99	-32.31
S3-09	9.28	7.86	-15.30	S3-09	4.23	5.97	41.13
S3-11	12.52	10.98	-12.30	S3-11	8.03	8.47	5.48
S3-12	14.10	4.98	-64.68	S3-12	12.83	0.02	-99.84
S3-41	0.15	0.20	33.33	S3-41	0.51	0.21	-58.82
S3-42	2.21	5.43	145.70	S3-42	0.90	5.23	481.11
S3-43	4.54	0.27	-94.05	S3-43	0.55	1.73	214.55

Source: UN COMTRADE (2012), own processing

of Czech exports are: the export of meat and meat products, milk and dairy products, cereals, vegetables and fruits, stimulants, foodstuff products and beverages (these aggregations represent about 77% of the export value). Slovak agricultural export to the Czech market is represented mainly by meat and

meat products, milk and dairy products, cereals, fruits and vegetables, stimulants and beverages (the share of these aggregations in the total Slovak export to the Czech Republic is about 74%). Table 11 further shows that the commodity structure of Czech and Slovak mutual exports significantly changed during

Table 12. Competitiveness of the mutual trade Czech Republic vs. Slovakia

LFI CR vs. SR	1994	1996	1998	2000	2002	2004	2006	2007	2008	2009	2010
S3-00	-0.28	0.76	1.94	0.62	0.48	1.37	-0.19	-0.04	0.37	-0.53	-0.12
S3-01	-0.28	1.34	3.43	1.96	1.64	1.22	2.82	2.36	2.79	3.88	1.75
S3-02	2.21	-0.43	0.19	-2.05	-4.79	-5.18	-2.09	-2.03	-3.49	-0.37	-1.01
S3-03	1.01	1.00	0.38	0.78	0.70	0.74	0.65	0.64	0.55	0.93	0.77
S3-04	-5.21	0.09	-3.77	-1.22	-3.25	-2.36	-3.87	-4.82	-3.03	-2.66	-2.90
S3-05	-9.77	-6.47	-2.70	-2.36	-2.31	1.25	0.23	0.94	-0.11	1.38	1.92
S3-06	2.90	0.92	-2.74	-3.17	-1.94	-2.48	-3.74	-3.41	-0.79	-1.49	-2.16
S3-07	0.96	-0.44	1.05	0.61	-1.21	-0.74	-0.40	-2.21	-1.90	-1.90	-2.88
S3-08	0.59	-0.26	-0.18	0.79	0.62	1.38	1.76	1.71	1.48	1.21	1.08
S3-09	2.53	1.62	3.73	1.55	1.13	2.51	1.25	1.27	1.47	1.29	0.82
S3-11	2.24	2.34	0.70	-0.35	0.32	0.97	2.59	1.54	0.72	0.90	1.10
S3-12	0.63	0.54	-0.65	3.27	10.87	3.82	2.08	4.54	1.27	1.15	2.17
S3-41	-0.18	-0.49	-0.22	-0.61	-1.15	-0.57	0.03	0.02	-0.01	0.03	0.00
S3-42	0.66	-0.82	-1.16	0.44	-0.99	-1.14	-0.48	-0.25	1.50	-2.55	0.09
S3-43	1.99	0.32	0.00	-0.25	-0.12	-0.79	-0.64	-0.25	-0.80	-1.28	-0.64
Agriculture total	0.61	1.25	1.67	2.21	1.25	0.41	1.05	1.42	1.83	1.94	2.69

Source: UN COMTRADE (2012), own processing

the recent years. Many aggregations dominating the mutual trade in 1994 had significantly reduced their share in the total value of trade by 2010, while some aggregations significantly strengthened their share. The most significant changes in the case of Czech agricultural exports can be observed in the case of the exports of live animals, sugar and confectionery, stimulants, tobacco and tobacco products, and animal and vegetable fats. In the case of Slovak exports, significant changes can be observed in the case of meat and meat products, live animals, milk and dairy products, vegetable and fruits, sugar and confectionery, tobacco and tobacco products.

As a result of the considerable consensus in the production and trade structure, there is a strong competition between both countries in the terms of the mutual trade. Table 12 provides an overview of the development of comparative advantages in the case of the mutual Czech-Slovak trade. From the data in the table, it follows that Czech agrarian exports have a very strong comparative advantage in relation to the Slovak market. In the long-term, the Czech Republic has comparative advantages in relation to Slovakia in the case of the trade in the following aggregates: meat and meat products, fish and seafood, fruit and vegetable, animal feed, food preparations, beverages, tobacco and tobacco products. Slovakia, on the other hand, achieves comparative advantages in the cases of live animals, milk and dairy products, cereals, stimulants and selected animal fats and oils.

The distribution of comparative advantages between the Czech Republic and Slovakia is in the long term against Slovakia.

The above analysis shows that the Czech Republic has a comparative advantage in relation to Slovakia for the majority of commodity aggregations. This also corresponds to the data presented in Table 13, which shows the trade balance development in the case of the individual aggregations. While at the beginning of the analysed period Slovakia reached a positive balance in five of the fifteen studied aggregations, later the positive balance had moved in favour of the Czech Republic. At present (2010), in relation to the Czech Republic, Slovakia has achieved a positive balance only in the case of confectionery and some vegetable and animal fats and oils. The items that present the greatest burden in Slovak agricultural trade balance in favour of the Czech Republic are meat and meat products, fruits and vegetable, beverages, tobacco and tobacco products and food preparations (these items represent approximately 73% of the negative Slovak agricultural trade balance in relation to the Czech Republic). The high negative balance of Slovakia in relation to the Czech Republic is given by the gradual process of the reduction of the Slovak agriculture dimension (Ciaian et al. 2005) – where in the recent years, a number of both production and processing capacities have either ceased their activities or significantly reduced the amount of production (MPRV 2011). It is appropriate to note

Table 13. The structure of the agrarian trade balance between the Czech Republic and Slovakia (ths. USD)

	1994	1998	2002	2006	2008	2010
S3-00	-685 482	15 845 358	8 346 727	6 418 977	27 987 113	14 526 284
S3-01	-730 357	25 951 082	23 003 162	75 520 519	168 404 082	143 146 141
S3-02	10 264 995	9 139 820	-10 038 403	15 134 064	25 984 248	58 580 894
S3-03	4 526 108	4 132 491	7 315 521	15 300 191	24 714 062	31 359 101
S3-04	-20 275 666	1 574 186	571 038	-19 182 358	20 287 078	17 261 826
S3-05	-39 445 845	1 630 400	2 102 160	54 105 510	115 947 496	158 478 892
S3-06	13 157 049	-6 630 078	-4 109 930	-25 738 162	16 714 981	-10 366 496
S3-07	5 600 872	21 354 883	8 894 987	19 645 061	16 708 088	6 514 200
S3-08	2 977 044	3 430 753	8 275 979	36 165 211	67 984 924	50 088 797
S3-09	11 636 721	35 459 896	29 543 207	50 389 131	96 199 517	71 615 297
S3-11	10 919 092	18 075 004	22 437 274	73 201 272	102 605 649	99 254 238
S3-12	4 522 844	19 614 636	113 942 583	39 087 523	44 487 256	71 118 395
S3-41	-716 890	-819 375	-5 326 919	1 164 387	1 146 266	1 461 939
S3-42	3 009 401	-923 908	-1 440 972	-160 104	65 593 947	41 979 441
S3-43	8 807 017	1 365 418	48 964	-6 509 009	-12 414 821	-7 929 530
Agriculture total	13 566 904	149 200 567	203 565 379	334 542 213	782 349 886	747 089 416

Source: UN COMTRADE (2012), own processing

that for the Czech Republic, the positive balance in relation to Slovakia is a very important prerequisite to stabilise its trade balance. A surplus in exports into Slovakia in relation to the overall negative balance of the Czech Republic is at a very significant level (43% of the total trade deficit value) – without the trade with Slovakia, the resulting negative balance of the total Czech agricultural trade would be significantly higher (hypothetically up to minus 2.5 billion USD).

CONCLUSION

This analysis of the Czech and Slovak agricultural trade development with an emphasis on the development of the mutual agricultural trade between the two countries produces the following findings. In the period 1994–2010, Czech and Slovak agricultural trade dynamically increased in terms of both the export and the import value. An important factor influencing the development of agricultural trade is that the growth rate of the agricultural export value in both countries is keeping up with the pace of the growth in the value of agricultural imports in the long term, which prevents a dramatic deterioration in the trade balance. However, it is necessary to mention that the negative balance of both Czech and Slovak agricultural trade is increasing significantly. A very negative phenomenon affecting the development of agricultural trade in the case of both countries is that the dimension of the agrarian sector in both countries has reduced significantly over time (Bielik and Hupkova 2011; Gebeltova 2012). Czech agricultural production covers the domestic consumption by only 60% to 70% (Czech Ministry of Agriculture 2010), in the case of Slovakia, the situation is even worse, as the domestic production covers the local consumption by only a little more than 40% (MARD 2011). A significant problem in Czech and Slovak agricultural trade in the recent years has been the unsatisfactory commodity structure of exports in relation to imports, when exports are largely represented by products with a minimum level of the added value. Another important feature characterising the development of the Czech and Slovak agricultural trade is the orientation on the EU market. The commodity structure of agricultural trade of both analysed countries is based more or less on the same commodity aggregates. In relation to the main objective of the paper, which was to define the changes that have occurred between the two economies in the terms of the development of the values and structures of mutual export and import operations in the period since the dissolution of the common state at the turn of 1992 and 1993,

the following can be stated. Czech agrarian exports have dynamically succeeded in the Slovak market, and that much more in comparison to Slovak exports oriented to the Czech market. During the analysed period, a higher growth rate of the Czech agriculture export value is clearly apparent compared to the value of Slovak exports flowing to the Czech market. This development has logically led to a significant deterioration in the trade balance against Slovakia. As a result of the structural reforms that affected the Slovak agricultural and food sector much more than in the case of the Czech Republic, the competitiveness of Slovak exports has been deteriorating in the long term in comparison to Czech export flows to Slovakia. Czech agricultural exports to Slovakia are more than double Slovak exports to the Czech market. In relation to the agricultural trade balance, it is finally appropriate to state that the values of most of the observed aggregations of Czech agricultural export are positive, except confectionery and animal fats and oils. The case of Slovak trade is exactly the opposite. In the future, it can be expected that the trade between both countries will continue to increase the value of the mutual trade, however, the growth rate of exchange will not be so intensive. The share of the mutual trade in the total exchange will probably continue to decrease. However, it can be expected that the comparative advantage will continue to be more on the side of the Czech Republic.

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