THE POSITION OF CZECH AND SLOVAK AGRO-FOOD TRADE IN THE EUROPEAN MARKETS

Peter Bielik*
Artan Qineti**

SLOVAKIA and Czech Republic went through a long-term process of transformation since they split from the common federation state. Trade flaws regarding the agro- food commodities were until before accession into the EU limited because of existing different tariff and non-tariff barriers. The position of agro-food trade of a given country can be judged in different ways. In this article we analyze the competitiveness of agricultural sector in the respective countries using Balassa indexes in an approach developed and applied by Bojnec and Fertö (2006). The objective of our analysis is the bilateral Slovak and Czech agro-food trade, respectively with main European partners (EU 25, EU 15 and V-4 & Austria).

Key Words: Czech Republic, Slovakia, agro-food trade, European Union.

Introduction

Slovakia and Czech Republic went through a long-term process of transformation since they split from the common federation state. Both countries are characteristic for the small size of their economies, focused mainly on their internal markets. Trade flaws regarding the agro- food commodities were until before accession into the EU limited because of existing different tariff and non-tariff barriers. Accession meant for both countries increasing opportunities for agro- trade in the framework of common market, but also increasing competition for domestic producers. Many authors consider the ability of successful adaptation in the foreign markets as a sign of competitiveness (Pokrivcak and Ciaian, 2004; Ciaian and Swinnen, 2006). For all the above mentioned reasons, the analysis of the trends in export competitiveness is useful because it might help to find potential problems for different branches of agro- food sector and propose suitable solutions for the future (Ciaian and Pokrivcak, 2007; Bojnec and Ferto, 2006; EU-Commission, 1999).

Concepts and Methodology

The position of agro-food trade of a given country can be judged in different ways. One way is to analyze the indicator of competitiveness. Competitiveness can be analyzed at three different levels: (i) competitiveness of nations (macroeconomic level); (ii) competitiveness of industries (mesoeconomic level); and (iii) competitiveness of firms (microeconomic level). Another aspect of competitiveness exists with regards to the spatial dimension of the investigation. Competitiveness of enterprises can be compared within a region of a particular country, or between countries. (Bojnec and Ferto, 2006).

* Dean, Department of Economics, Faculty of Economics and Management, Slovak University of Agriculture, Tr.A. Hlinku 2, Nitra 94976, Slovak Republic.

** Professor, Department of Economics, Faculty of Economics and Management, Slovak University of Agriculture, Tr.A. Hlinku 2, Nitra 94976, Slovak Republic.

There are different approaches that help to evaluate the competitiveness at the national level. One way is the analysis of comparative advantages that assumes that international trade exchanges happen due to differences in relative – opportunity costs between trade partners. However there is a difference between the conception of comparative advantage and competitiveness. First difference arises from trade distortions that are included into the concept of competitiveness but that are not part of comparative advantage. Other differences have been identified by other authors (Lafay, 1992). Competitiveness usually compares countries for the same selected groups of commodities while comparative advantage is estimated to compare different groups of commodities. Also, competitiveness is vulnerable to changes in macroeconomic variables while comparative advantages have a natural structural character (Bojnec, 2001; Ferto and Hubbard, 2003).

We divide the analyzed commodities based on their export comparative advantage into two groups, where the first group includes commodities that register the highest value of Balassa index and at the same time their exports in 2006 were above the value of 100 million SKK. Such condition helps for the purposes of our analysis. The other group includes 5 top commodity group, that registered the highest export value in 2006 and the value of Balassa indexes in order to conclude about their export comparative advantages. The export comparative advantages of Slovakia and Czech Republic are analyzed in relation to these markets EU 25 (includes European Union member countries after the enlargement of 2004), EU 15 (EU member countries before the enlargement of 2004) and V4 & Austria (where V4 includes Slovakia, Czech Republic, Poland and Hungary).

The nature of comparative advantage in trade data are the main methodological approaches that are applied in this paper. The concept of 'revealed' comparative advantage, introduced by Liesner, H.H (1958) but refined and popularized by Balassa, B. (1965) and therefore known as the 'Balassa index', is widely used empirically to identify a country's weak and strong export sectors. Porter (1990) uses it to identify strong sectoral clusters, Amiti, M. (1998) analyses specialization patterns in Europe, Proudman and Redding (2000).

The Revealed Comparative Advantage (RCA) index is defined by Balassa (1965) as follows:

$$B = (xij / xrj) / (xis / xrs) \tag{1}$$

where x represents exports, i is a commodity, j is a country, r is a set of commodities and s is a set of countries. B is based on observed trade export patterns; it measures a country's exports of a commodity relative to its total exports and to the corresponding export performance of a set of countries. If B>1, then a comparative advantage is revealed, i.e. a sector in which the country is relatively more specialized in terms of exports. In our case xij describes Czech and Slovak exports for a particular product group to EU 25, EU 15 and V4 (Poland, Hungary, Czech or Slovak Republic) countries, while xis is total agro-food of Czech or Slovak Republic to EU 25, EU 15 and V4 & Austria. Xrj denotes the EU3's exports for a given product and xrs total agro- food exports by EU 25, EU 15 and V4 & Austria, which are used as the benchmark of comparison.

Our paper is focused on the stability of the B trade indices over time. One can distinguish at least two types of stability (Hinloopen and van Marrewijk, 2001; 2004) (i) stability of the distribution of the indices from one period to the next; and (ii) stability of the value of the indices for particular product groups from one period to the next.

In our paper we analyze the first type of stability in the following way: following Dalum, Laursen and Villumsen (1998) we use B in regression analysis:

$$B_{ij}^{t2} = \alpha_i + \beta_i B_{ij}^{t1} + \varepsilon_{ij} \tag{2}$$

where superscripts t^1 and t^2 describe the start year and the end year, respectively. The dependent variable, the value of B at time t^2 for sector i in country j, is tested against the independent variable which is the value of B in year t^1; and α are β standard linear regression parameters and ε is a residual term. If β=1, then this suggests an unchanged pattern of B between periods t1 and t^2. If β >1, the existing specialization of the country is strengthened. If 0< β <1, then commodity groups with low (negative) initial B indices grow over time, while product groups with high (positive) initial B indices decline. The special case is where β <0 indicates a change in the sign of the index. However, Dalum, Laursen and Villumsen, (1998) point out that β >1 is not a necessary condition for growth in the overall specialization pattern. Thus, following Cantwell (1989), they argue that:

$$\frac{\sigma_i^{t2}}{\sigma_i^{t1}} = \frac{\left|\beta_i\right|}{\left|R_i\right|}$$
(3)

where R is the correlation coefficient from the regression and s^2 is the variance of the dependent variable. It follows that the pattern of a given distribution is unchanged when β =R. If β >R the degree of specialization has grown, while if β <R the degree of specialization has fallen.

Data and Empirical Results

For the purposes of empirical analysis on trade types of bilateral Slovak and Czech agro-food trade, respectively with main European partners (EU 25, EU 15 and V-4 & Austria), we use trade data from EUROSTAT by the years 1999-2006. The sample consists of 201 items at four-digit level.

The Analysis of the Position of Czech and Slovak Agro- Food Trade with EU 25

The analysis of export comparative advantages is done based on estimated values of Balassa indexes. Using this index is a convenient approach because the analysis based on its composition serves as benchmarking with respect to the comparison of export flows between two countries or between a given country and a group of countries.

Table 1: The B Index Development for Selected Commodity
Exports: Slovak Republic - EU 25

Commodity Group	Commodities with Exports >100 million SKK			Commodity Group	TOP 5 Export Commodities for the Year 2006		
	B 2006	Δ06/99	Δ06/03		B 2006	Δ06/99	Δ06/03
0813	14,3737	11,5395	6,5795	1701	4,9393	4,6207	4,0924
0106	10,2353	-4,8085	-5,0975	1806	2,6556	0,7017	-0,0311
1703	9,9717	0,3176	-4,3648	0406	1,3389	0,1068	-0,0359
1107	9,6887	-5,0655	-9,2502	1005	8,0191	3,3652	3,0331
1206	9,4580	-21,5899	-10,7537	1001	2,4250	1,3522	2,1601

Source: *Own Calculations; Data of EUROSTAT.*

In the Table 1 we show the data about export comparative advantage for Slovak Republic. Among commodities with the highest B index we identify only one group where its comparative advantage

toward EU increased. This group includes dry fruits, nuts and their mix (0813). The values of other groups fell remarkably, where biggest fall was registered for the commodity groups like sunflower seeds and malt. It is a positive fact that all five top export commodities, they achieve comparative advantages toward EU 25, where the highest value was registered for maize exports (8,0191). Comparative advantage increased after the accession into EU for 3 out of 5 top export commodities in 2006, where for groups like 1701, 1005 and 1001 such increase was registered after the accession.

Data on export comparative advantages for Czech Republic toward countries of EU 25 are given in Table 2. In contrast to the case of Slovakia, the group of commodities with the highest values of B index in 2006 for Czech Republic were oilseeds (1207), hops (1210) and live fish (0301). However none of them sustained their comparative advantages after the accession of Czech Republic into EU.

Table 2: The B index Development for Selected Commodity Exports: Czech Republic - EU 25

| Commodity Group	Commodities with Exports >100 million SKK			Commodity Group	TOP 5 Export Commodities for the Year 2006		
	B 2006	Δ06/99	Δ06/03		B 2006	Δ06/99	Δ06/03
1207	17,4937	19,7404	-3,9868	0401	5,1138	4,9556	4,8748
1210	18,3599	16,7456	-16,7680	2203	3,0460	-0,7394	-0,3999
0301	12,4703	-2,0983	-7,5977	1701	2,8793	2,5525	2,3271
1107	5,7892	-1,2778	-2,0738	1001	2,3785	0,2281	-0,1003
0106	5,1439	-3,0350	-0,3814	1806	1,3908	0,4008	-0,1115

Source: *Own Calculations; Data of EUROSTAT.*

Similarly like in Slovakia, the top export groups in Czech Republic registered comparative advantage for 2006 as well. EU accession helped especially non-concentrated milk and yogurts (0401) as well as sugar (1701).

In order to analyze the development of export comparative advantages for the whole sample of commodities we estimate median values of B indexes as well as define the trend in the share of B indexes greater than 1 on the whole sample. The first conclusion is that neither Slovakia nor Czech Republic enjoyed comparative advantages in agro-food exports to EU 25 markets. The median value of B indexes on each and every year was lower than one. Czech Republic seems to be in a better position though, as it has a larger group of commodities with B indexes higher than 1. For example in 2006, 59 commodity groups had B indexes higher than one (in fact in 1999 the situation was identical). However the development was not constant in between these years. On the other side in Slovakia we register a reduction in the number of groups with B indexes higher than one, while it was 66 groups in 1999, it fell to 53 in 2006. The graphical demonstration of the development in the value of B indexes higher than one can be seen in the Graph 1.

The decline in export comparative advantages for the Czech and Slovak Republic during the analyzed period can be explained among other factors, with the low production base of agro-food sector in both countries in comparison to EU 25. Table 3 represent the stability of B index between the start year and the end year of the analyzed period 1999 - 2006 for a sample of 201 commodity groups.

Graph 1: Median and the Share of Product Groups B>1: Slovak, Czech Rep. - EU 25
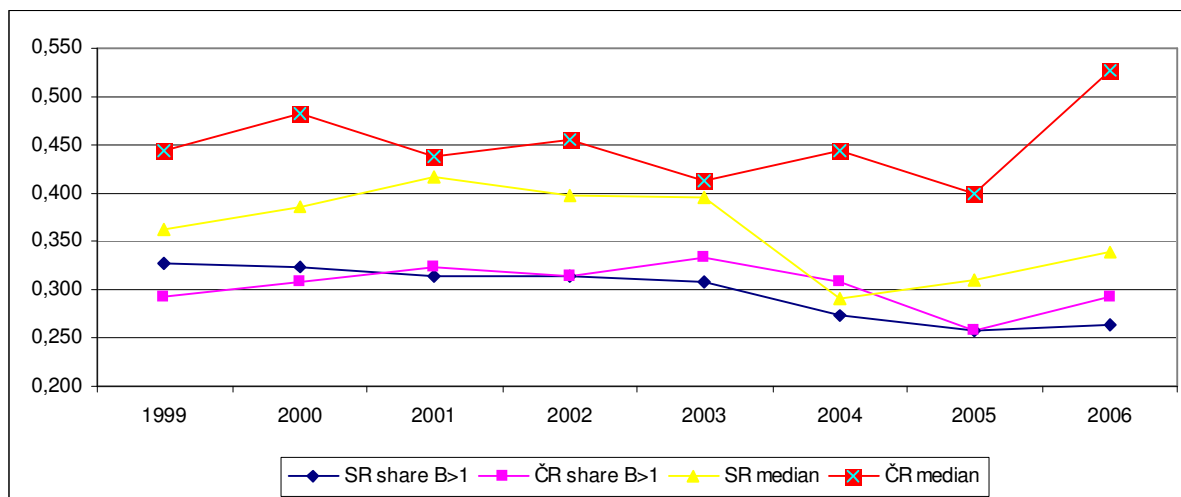
Source: Own Calculations; Data of EUROSTAT.

Table 3: The Stability of B Index Between 1999 and 2006: Slovak, Czech Rep. - EU 25

	β	p value	R²	β/R	N
Slovak Republic	0,3747	0,000000	0,3910	0,59923	201
Czech Republic	0,5411	0,000000	0,7182	0,63850	201

Source: Own Calculations; Data of EUROSTAT.

If 0<β<1, this suggests that commodity groups with low (negative) initial B indices are likely to grow over time, whereas product groups with high (positive) initial B indices decline. In our case the values of â index for Slovakia and Czech Republic are positive and around 0,5 indicating that the hypothesis of reverse patterns of the B value can not be rejected and that trade patterns have changed over the analyzed period. This might signal declining comparative advantage for Slovak and Czech agro-food commodities that once had shown strong advantage comparing with EU 25. The values of the β/R Slovakia and Czech Republic are approximately similar in the EU 25 market, while β<R in both countries means decreasing of agro-food export specialization with EU 25 countries and especially for Czech republic this is documented also by the high value of B index even though the share B>1 returned to the level of basic year there. This means that specialization decline was relative.

The Analysis of the Position of Czech and Slovak Agro- Food Trade with EU 15
The composition of commodity groups with the highest value of B index and export value above 100 millions SKK in 2006, in the trade relations of Slovakia with EU 15 is the same as with EU 15. There is a remarkable decline for the group of sunflower seeds which indeed started to fall before accession. Almost all commodity groups faced significant decline in their comparative advantage in the EU 15 market except dry fruits and nuts (0813), where an increase in comparative advantage was registered before and after EU accession. Higher Slovak comparative advantages in EU 15 market than in the case of EU 25 were registered for commodities like: sugar (1701), maize (1005), wheat (1001).

**Table 4: The B Index Development for Selected Commodity
Exports: Slovak Republic - EU 15**

Commodity Group	Commodities with Exports >100 million SKK			Commodity Group	TOP 5 Export Commodities for the Year 2006		
	B 2006	Δ06/99	Δ06/03		B 2006	Δ06/99	Δ06/03
0813	13,4682	10,6075	5,6033	1701	5,2249	4,9053	4,3786
1703	13,0952	-0,4034	-5,5129	1806	2,6658	0,7140	-0,0311
1206	12,4995	-24,4818	-20,9231	0406	1,3239	0,1047	-0,0406
0106	10,4481	-6,0430	-5,8438	1005	9,3009	4,3175	3,9418
1107	9,6263	-5,5444	-9,8614	1001	2,5259	1,4482	2,2483

Source: *Own calculations; data of EUROSTAT.*

Czech Republic registered only slight changes in comparative advantages in EU 15 market compared to EU 25. Higher advantages after its EU accession were registered for commodities like milk and non-concentrated yogurts, seeds and oilseeds (1207). In the case of Czech Republic, agro-food commodities register higher comparative advantage in EU 15 market than in EU 25 market. Surprisingly and contrary to expectations of many, malt beer (2203) has lower comparative advantage in EU 15 market than in EU 25. In Czech Republic 3 out five top export commodities faces lower comparative advantages after EU accession while in Slovakia only 2 out of five. Data on B index are shown in Table 5.

**Table 5: The B Index Development for Selected Commodity
Exports: Czech Republic - EU 15**

Commodity Group	Commodities with Exports >100 million SKK			Commodity Group	TOP 5 Export Commodities for the Year 2006		
	B 2006	Δ06/99	Δ06/03		B 2006	Δ06/99	Δ06/03
1207	19,6829	-6,7795	0,9952	0401	5,3594	5,2046	5,1259
1210	17,0491	-18,3730	-10,6230	2203	2,9015	-0,8144	-0,4835
0301	11,9534	-2,7381	-8,2428	1701	3,0476	2,7190	2,4943
1107	5,7226	-1,4991	-2,3848	1001	2,4580	0,3119	-0,1063
0401	5,3594	5,2046	5,1259	1806	1,4028	0,4118	-0,1069

Source: *Own Calculations; Data of EUROSTAT.*

The development of median value of B index in EU 15 market for the analyzed period shows its initially falling tendency, followed by an even more remarkable decline Slovakia after its EU accession. However, after that moment data show some increasing tendency in time. In general, neither Czech nor Slovak data for agro-food commodities show signs of export comparative advantage. However the median value for Czech Republic is for the whole analyzed period, higher than in Slovakia.

Graph 2: Median and the Share of Product Groups B>1: Slovak, Czech Rep. - EU 15
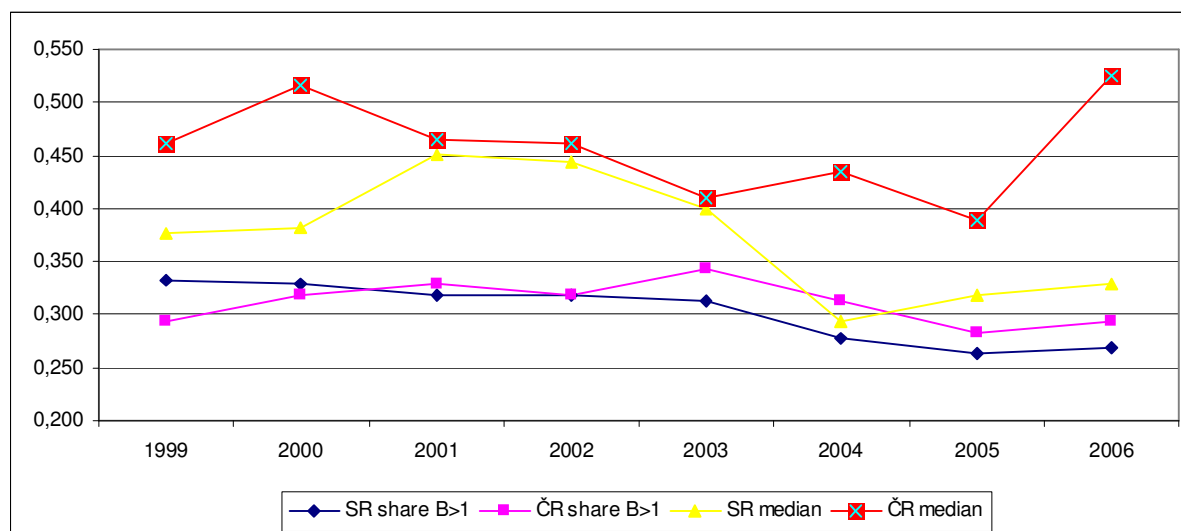
Source: Own Calculations; Data of EUROSTAT.

The share B>1 on the whole sample shows similar tendencies like in the case of EU 25 market. In Czech Republic 59 commodities achieve comparative advantage in EU 15 market, equally the same as in EU 25 case. In the analyzed period, the maximum value was registered for Czech Rep. in, where B>1 for 67 commodities. In Slovakia, opposite tendencies were registered, the share B>1, declined from 37% (67 commodities) to 32% (54 commodities).

Table 6 demonstrates the results of regression analysis of B index for the Czech Rep. and Slovakia in the period 1999-2006.

Table 6: The Stability of B Index Between 1999 and 2006:
Slovak, Czech Rep. - EU 15

	β	p value	R^2	β/R	N
Slovak Republic	0,4394	0,000000	0,4680	0,64229	201
Czech Republic	0,5102	0,000000	0,7164	0,60281	201

Source: Own Calculations; Data of EUROSTAT.

The value of β, that show for the dispersion of B index in time is in both countries lower 1. This means that commodity groups showing high export comparative advantages in EU 15 market at the beginning of analyzed period, tend to decline later both in Slovakia and Czech Rep. It is interesting to see that commodities with relatively low B index (i.e. commodities with comparative disadvantage) show opposite tendencies. β/R share is higher in the EU 15 market in case of Slovakia. However in general this share remain lower than 1, meaning that $\beta < R$ for both countries. So it can be concluded that agro-food trade in Czech and Slovak Republic can be characterized as trade with falling exporting specialization and as a result potentially loosing competitiveness in EU 15 market. In Czech Republic, judging the share B>1, the same group of commodities achieve comparative advantages at the beginning and at the end

of analyzed period. From the results of regression analysis it can be concluded that the decline in competitiveness is caused by the fall in the value of high "B" indexes, i.e. previously strong comparative advantages has been declining.

The Analysis of the Position of Czech and Slovak Agro- Food Trade with Countries of V-4 and Austria

The V4 region includes countries like Slovakia, Czech Republic, Hungary and Poland. They belong to ex-communist countries, that once operated a centrally planned economy and after 1989 entered an ambitious path of reforms and transformation. Beside historical similarities these countries share also a common geographical location. We added into this analysis Austria because it is a neighbor of both analyzed countries Slovakia and Czech Republic, as well as represents an important market for both countries. In Table 7 we show data on B index in 2006 for Slovakia testing against exports of V4 groups & Austria. Changes were registered regarding the position of Slovak commodities with the highest comparative advantage in the trade relations with V4 & Austria, contrary to the case of EU 25 and EU 15. The first place belongs to commodity group like sheep or goat meet (0204), where the value of B index steadily increased during the whole analyzed period. Strong export comparative advantage were registered for oilseeds and cotton oil (1512), as well as pork and poultry fat (1501). It is important to emphasize that in the markets of V4 & Austria Slovak commodities with the highest export values in 2006, kept their advantage even though there were some exceptions like sugar, maize and wheat that scored lower than in the case of EU 15 and EU 25.

Table 7: The B Index Development for Selected Commodity Exports
Slovak Republic – V4 & Austria

Commodity Group	Commodities with Exports >100 million SKK			Commodity Group	TOP 5 Export Commodities for the Year 2006		
	B 2006	Δ06/99	Δ06/03		B 2006	Δ06/99	Δ06/03
0204	9,6976	7,2238	3,0681	1701	2,6749	2,4109	1,8257
0813	9,0470	6,7716	3,3146	1806	1,8741	0,5365	-0,0974
1512	7,2678	5,8653	4,8866	0406	1,6425	-0,0294	0,0733
1803	6,9790	6,3611	-0,5353	1005	2,4192	0,6719	0,6213
1501	6,9471	6,1641	3,1430	1001	1,5948	0,6334	1,4168

Source: *Own Calculations; Data of EUROSTAT.*

Changes in export comparative advantages for agro- food commodities in the markets of V4 & Austria were registered in the case of Czech Republic as well, especially commodities with top values of B indexes. The group of top 5 commodities in Czech Republic, with the highest B index in 2006 includes live fish, plant juices (1302) and (contrary to the case of EU 15 and EU 25) malt beer. However after the accession of Czech Rep. into EU, B index for beer declined in the V4 & Austria markets too. Among the Czech commodities with highest value of exports in 2006 only one commodity showed comparative disadvantage (this is chocolate and cocoa products (1806)). In the period after the enlargement the value of 3 out 5 top Czech export commodities worsened, while in Slovakia this was the case only for one item: chocolate and cocoa products. Data for top export commodities are shown in Table 8.

Table 8: The B Index Development for Selected Commodity Exports
**Czech Republic – V4 & Austria**

Commodity Group	Commodities with Exports >100 million SKK			Commodity Group	TOP 5 Export Commodities for the Year 2006		
	B 2006	Δ06/99	Δ06/03		B 2006	Δ06/99	Δ06/03
0301	6,8692	1,0723	-0,0497	0401	2,3634	2,2660	2,1687
1210	6,6691	-0,5046	-0,9192	2203	5,0318	-0,0540	-0,9540
1302	5,4122	2,1235	0,2945	1701	1,5593	1,2885	1,0056
1207	5,2672	1,7208	0,8090	1001	1,5642	-0,3629	-0,1009
2203	5,0318	-0,0540	-0,9540	1806	0,9815	0,3037	-0,1209

Source: *Own Calculations; Data of EUROSTAT.*

The values of median B indexes in the period 1999 - 2006 show that Czech agro-food commodities tend to reach the limit of comparative advantage in the markets of V4 & Austria. In Slovakia, to the contrary the B index values tend to fall while the median value of B index in 2006 is below that of 1999. In Czech Republic the share of B>1 increased from 37% (74 commodities) to 42% (85 commodities) while Slovakia faced opposite tendencies as share B>1 declined from 37% (74 commodities) to 34% (69 commodities).

Data from regression analyses for Czech Republic based especially on β values show that there is a tendency of falling competitiveness and specialization. The value of β/R however reverses the above mentioned conclusion, so the agro-food export specialization remains in the markets of V4 & Austria. This backed by the median value of B index as well as B>1 frequencies.

Graph 3: Median and the share of product groups B>1:
Slovak, Czech Rep. - V4 and Austria
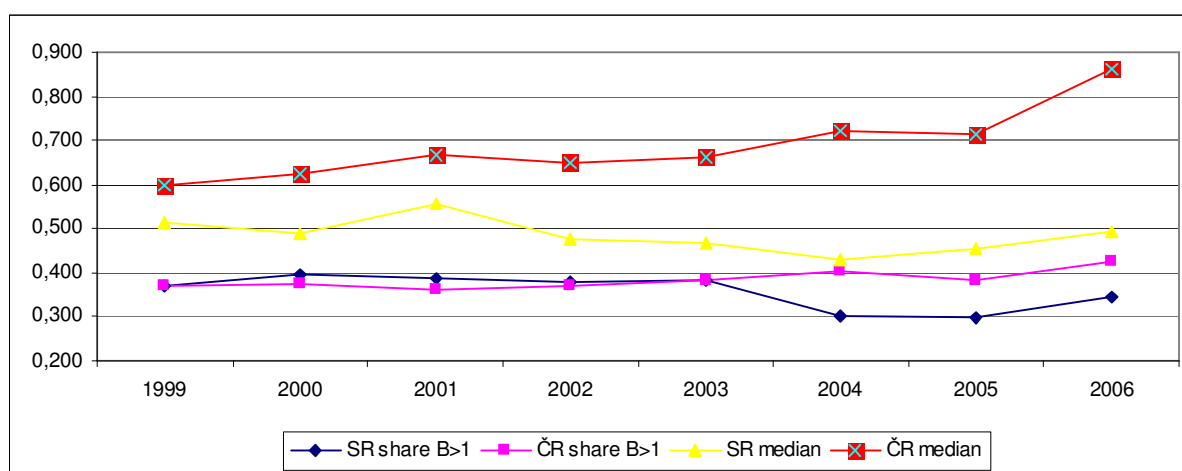
Source: *Own calculations; data of EUROSTAT.*

Regarding the future, there is potential for increasing median value i.e. increasing export specialization in the markets of V4 and Austria. In the case of Slovakia, â is higher than 0 and moves closer to1, meaning that the fall in comparative advantage for agro- food commodities with high B indexes is slower than in the case of trade with EU 15 and EU 25. The value of β/R approaches 1, meaning that there is no remarkable change in specialization. Falling share of B>1 frequencies is compensated by a lower fall in the values of B indexes for commodities with strong comparative advantages.

Table 9: The Stability of B Index Between 1999 and 2006:
Slovak, Czech Rep.-V4 & Austria

	β	p value	R²	β/R	N
Slovak Republic	0,7825	0,000000	0,6030	1,00765	201
Czech Republic	0,4629	0,000000	0,2193	0,98841	201

Source: *Own Calculations; Data of EUROSTAT.*

Conlusions of Analysis

Based on the analysis of export comparative advantages according to the estimated values of Balassa indexes for the purpose of comparison of export flows between Czech Republic and Slovakia on one hand and a selected group of EU countries on the other we can conclude:

There are differences between Czech Republic and Slovakia regarding the commodity groups with a comparative advantage. In general for both countries top commodities registered increased comparative advantage with EU 25 after accession. Neither Slovakia nor Czech Republic enjoyed comparative advantages in agro-food exports to EU 25 markets. In Slovakia we noticed a reduction in the number of groups with comparative advantage toward EU 25. Trade patterns have changed over the analyzed period and there are signals indicating declining comparative advantage for Slovak and Czech agro-food commodities that once had shown strong advantage comparing with EU 25. Similar tendencies were noticed in the comparison between Slovakia, Czech Republic and EU 15. In general, neither Czech nor Slovak data for agro-food commodities show signs of export comparative advantage. However data for Czech Republic during the whole analyzed period, show higher agro-food comparative advantage than in Slovakia. Regarding the group that includes Czech resp. Slovak neighbors (V4 + Austria), Czech Republic registered increasing comparative advantage. Slovakia faced opposite tendencies. Regarding the future, there is potential for increasing median value i.e. increasing export specialization in the markets of V4 and Austria.

Recommendations

Apparently, Czech and Slovak agro- food enterprises face a difficult task competing in the EU market. Transformation while it might have helped the economy as a whole, has not contributed to the increase of Czech and Slovak agro-food competitiveness in the European markets. Both countries should focus on increasing the opportunities for those products where they still register comparative advantages in Europe. For the rest of commodity groups, they should look for other markets out of EU. However, given the huge size of agricultural enterprises in these countries, in comparison to the rest of the EU and the Common Agriculture Policy support disbursed to them, the situation might still change. However, this requires a more active policy from local ministries and entrepreneurs with respect to searching for new markets and improving the position of their products in the EU markets by improving efficiency, adopting modern managerial approaches and following the trends in the international markets.

References

Amiti, M. (1998), New Trade Theories and Industrial Location in the EU, *Oxford Review of Economic Policy*, Vol.14, No.2, pp.45-53.

Balassa, B. (1965), Trade Liberalization and Revealed Comparative Advantage, *The Manchester School of Economic and Social Studies*, Vol.33, No.1, pp.99-123.

Bojnec, S. and Ferto, I. (2006), Comparative Advantages and Competitiveness of Hungarian and Slovenian Agro-Food Trade in the EU Markets, Paper presented at the 98 th EAAE Seminar 'Marketing Dynamics within the Global Trading System: New Perspectives', Chania, Crete, Greece as in June 29 - July 02.

Bojnec, S. (2001), Trade and Revealed Comparative Advantage Measures. Regional and Central European Agricultural Trade, *Eastern European Economics*, Vol.39, No.2, pp.72-98.

Cantwell, J. (1989), Technological Innovation and Multinational Corporations, Oxford: Blackwell.

Ciaian, P. and Swinnen, J.F.M. (2006), 'Land Market Imperfections and Agricultural Policy Impacts in the New EU Member States: A Partial Equilibrium Analysis' *American Journal of Agricultural Economics*, Vol.88, Issue 4, p.799-815.

Ciaian, P. and Pokrivcak, J. (2007), Agriculture Reforms and Development in East-Central Europe, in. Sergi, B., Bagatelas, W. and Kubicova, J. (eds), Industries and Markets in Central and Eastern Europe, Ashgate, England.

Dalum, B., Laursen, K. and Villumsen, G. (1998), Structural Change in OECD Export Specialisati on Patterns: De-Specialisation and 'Stickiness' *International Review of Applied Economics*, Vol.12, No.3, pp.423-443.

EU-Commission (1999), The Agricultural Situation in the European Community,1998 Report, Brussels.

Ferto, I. and Hubbard, L.J. (2003), Revealed Comparative Advantage and Competitiveness in Hungarian Agri-Food Sectors, *The World Economy*, Vol.26, No.2, pp.247-259.

Hinloopen, J. and van Marrewijk, C. (2001), On the Empirical Distribution of the Balassa Index, *Weltwirtschaftliches Archiv*, Vol.137, pp.1-35.

Hinloopen, J. and van Marrewijk, C. (2004), Dynamics of Chinese Comparative Advantage, *Tinbergen Institute Working Paper*, Vol.34, No.2, Amsterdam.

Lafay, G. (1992), The Measurement of Revealed Comparative Advantages, In: Dagenais, M.G. and Plunet, P.A.(Eds.) *International Trade Modelling*, Chapman & Hall, London, pp.209-236.

Liesner, H.H. (1958), The European Common Market and British Industry, *Economic Journal*, Vol.68, pp.302-316.

Pokrivcak, J. and Ciaian, P. (2004), Agricultural Reforms in Slovakia, No.9-10, *Finance A Úvìr – Czech Journal of Economics and Finance*.

Porter, M. (1990), The Competitive Advantage of Nations. London: MacMillan.

Proudman, J. and Redding, S. (2000), Evolving Patterns of International Trade, *Review of International Economics*, Vol.8, pp.373-396.