TRENDS OF AGRO-TRADE BETWEEN HUNGARY AND SLOVAKIA

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ABSTRACT

The consequences of EU accession were very significant for every new member states. The changes of agri-trade flow within EU membership have resulted several possibilities as well as difficulties. The analysis of the trade process shows us that the intra EU12 trade flow, due to the elimination of the commercial controls and the extension of single market, increased substantially. The present paper analyses the processes going on in the frames of bilateral trade flow of agricultural products between Hungary and Slovakia after the last EU enlargement. What kind of trends and tendencies can be observed in the bilateral trade process? And together with this process as regards the Hungarian export flow, what kind of concentration can be revealed, at the same time by which products can have comparative advantages?

KEY WORDS


JEL classification: Q17.

INTRODUCTION

Following the enlargement of the European Union (EU) in 2004, the foreign trade of agricultural products has substantially changed. Besides the impact of the common internal market, the measurements implemented earlier by the newly accessed member states on their protected – basically from each other, too - and subsidized markets were also eliminated. The formerly applied disproportionate national subsidies which could ensure relative competitive advantages in regards to some markets were also cancelled. Thus the accession had a great impact on the product trade of new member states among each other and it has been fundamentally rearranged after the integration. Substantial value and volume growth could be observed during this process.

Although the trade agreements with EU has gradually expanded the possibility to enter the markets of the former member states (EU15) since 2000, the Hungarian agro-export could not or
only partly utilize the possibilities offered by the common market.\textsuperscript{1} The volume and value of export has increased but specifically - per one ton of goods - in a gradually decreasing pace. It has also resulted trade imbalances in case of some products and markets.\textsuperscript{2}

In the early 2000s, the agriculture had already been an equal part of EU internal market due to the EU-preferential trade, thus the internal market competition, too. The value of agro-export in the relation of Hungary and the whole European Union (EU27) increased by almost 50\% to 3,3 billion euro by 2005, following the accession compared to te 2,4 billion euro of 2000. Later, as the result of some favourable processes, it reached 5,6 billion euro in 2011. The import grew from 1,1 billion euro of the millenium to 2,4 billion euro in five years, then it was more then 3,8 billion euro by 2011.\textsuperscript{[13]}

In addition to the trends of EU15 markets, the new member states (EU9 – Central and Eastern European countries including Hungary accessing in 2004) have experienced substantial changes after May 1, 2004, due to the elimination of trade limits and national subsidies causing market distortion in relation to them and the fully liberalized internal market regulation and lack of restrictions in terms of trading.

The expanding trade among each other of the new member states (EU12) has shown a growth of much greater dynamics compared to the markets of the old member states. In case of markets protected with significant customs duties until 2004, the Hungarian export volumes have increased only gradually following the integration. In this process, the role of Visegrad countries (V3)\textsuperscript{2} was determinant, because 45\% of Hungarian export going to EU12 flowed to these countries, while 80\% of EU12 import came from Slovakia, the Czech Republic and Poland.\textsuperscript{3} [2]

Following the accession, especially in regards to V3, position losses and drastic balance deterioration could be observed from Hungarian aspects. Although Hungarian trade surplus could still be detected in value, as the result of the expanding markets of cereals – due to the modified conditions of intervention. Examining it, however, on structural (relatively low ratio of finished

\textsuperscript{1} The EU has given substantial agro-trade favours by extending the Generalized System of Preferences (GSP), then it has created new condition system for agro-trade in the frames of Association Agreement concluded in 1991. The second amendment to this included the arrangement enhancing liberalization process prior to the accession. The mechanism of favours were extended in this framework: (a) system of customs-free quotes – “four zero solution”, (b) customs-free option without quantity restrictions – “double zero solution”, and (c) tools of traditional customs quotes. The degree of preferences considerably increased due to the measurements, the quantity limits decreased, thus afterwards the preferential agricultural trade was in fact equal part of internal market, the market competition.\textsuperscript{[7]}

\textsuperscript{2} The Visegrad Cooperation (Visegrad countries or V4) is the regional organization of the Czech Republic (CZ), Hungary (HU), Poland (PL) and Slovakia(SK). The aim of this cooperation is to provide joint representation for the economic, diplomatic and political interests of these countries, harmonization of their actions in relation to EU with special regard to agricultural policy, structural funds, common foreign and defence policy, as well as the Schengen Agreement.

\textsuperscript{3} It should be noted that – besides this process – the accession of Romania and Bulgaria has opened new dimensions in foreign trade, thus the total value of Hungarian export increased by 134\% and the import by 115\% and, as a consequence, the balance has been tripled.
products) and, in some cases, value basis, further negative tendencies can be explored in cereal market.

On the basis of the above, the question is how the Hungarian market positions change in relation to Slovakia which accessed on January 1, 2004. What are the obvious special features? What are the bilateral agro-trade relations like between the two countries and, consequently, what are the special trading features? In what cases can the comparative advantages be observed?

**MATERIALS AND METHOD**

The examinations are based on the data of bilateral trade between 2000 and 2011. During this period, in our opinion, enough information was collected to draft solid statements and conclusions. In some cases, the four- and two-digit product groups of the combined classification are also applied.

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

- Following the EU integration, in case of import, the goods coming from countries out of EU appear as goods from within the EU since they cross the EU border and the seat of an importing corporation is in the EU.
- In case of export, entry and exit summary customs declaration should be filled only in case of trade outside the EU, thus the control of actual turnover within EU is not possible on the basis of customs declaration.
- The series of VAT frauds within the EU has a significant distorting impact, because the effect of fictitious turnovers within the Union is very uncertain in administration and, consequently, in statistics.
- Moreover, the black or illegal trade can be added to the above, because it has a strong impact on some special product groups. But the avoiding trade should also be noted here,

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4 The database was summarized by the Research Institute of Agro-Economics on the basis of data of Central Statistical Office.
5 The Standard International Trade Classification, is a product classification of the United Nations and used for external trade statistics (export and import values and volumes of goods). In cooperation with Governments and with the assistance of expert consultants, the United Nations Secretariat drew up the 1950 edition of the United Nations Standard International Trade Classification (referred to below as the "original" SITC) By 1960, many countries were compiling international merchandise trade data according to the original SITC or national classifications correlated to it and major international organizations had adopted SITC as a basis for the reporting of international trade statistics. SITC is allowing for international comparisons of commodities and manufactured goods. [17]
6 It should be noted that the paper which serves to follow the movement of goods is called accompanying document in the trade of excise goods. It had been used only in internal trade earlier, but following the EU-accession, the goods are accompanied with this, too, in case of excise goods trade between member states, because the value added tax and the excise duty can be recovered on the basis of this. [5]
because it goes legally at union level, but it does not appear in the statistical reports of the individual member states.

A lot of methods, ratios and indices were applied in the frames of the research. The first index is the export-import balance, which clearly expresses the difference between export and import of the country.

\[ B_{E/I} = x_{ij} - m_{ij} \]  

(1)

Where \( B_{E/I} \) gives the sum of balance, \( x_{ij} \), is the sum of export value of the given country, and \( m_{ij} \) is the sum of the similar values of import.

The specific ratio of trade in each relation was determined.

\[ SV_{E/I} = \frac{V_{E/I}}{Q_{E/I}} \]  

(2)

Where \( SV_{E/I} \) means specific value, \( V_{E/I} \), is the summarized value of export or import in the trade, while \( Q_{E/I} \), is the quantity of export or import in the trade.

The third index applied in our research quantifies the export-import ratio. This ratio is the simplest export specification index which correlates the export of the countries to their import.

\[ R_{E/I} = \frac{x_{ij}}{m_{ij}} \]  

(3)

Where \( R_{E/I} \) is the value of index, \( x_{ij} \), is the sum of export items, currently the sum of export values of the given country, while \( m_{ij} \) gives the sum of similar values of import.

The widely used method of analysing bilateral trading activity is the foreign trade specification index (SI). The index correlates the foreign trade balance to the value of the total foreign trade. The value of index is between -1 and +1. The +1 value indicates strong competitiveness on domestic, as well as foreign markets. The trade specialization index by Iapadre comes from and operates by the same principle and it can be regarded a comparative advantage (RCA) index, too. [9] The point in

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7 The Hungarian cattle stock, which has excellent animal health capabilities (free from bluetongue disease) has found a strong market in Turkey. In cases of some lots, however, some dealers exported calves to Turkey which born out of Hungary but got Hungarian papers. Due to this, Turkey has introduced sanctions.

8 It is a difference in the reports of member states that data should be given above different turnover values in each country. In case of Hungary it is 100 million HUF annual turnovers.

9 The index can be laid down as follows: \[ SI = Z = \frac{x_{ij} - m_{ij}}{m_{ij}} = \frac{x_{ij} - m_{ij}}{x_{ij} + m_{ij}} + 1 \]
the index is that it quantifies the deviation of normalized foreign trade balance at product-level from the value of total foreign trade.

\[
TS_{ij} = \frac{x_{ij} - m_{ij}}{x_{ij} + m_{ij}} - \frac{\sum_{i} x_{ij} - \sum_{i} m_{ij}}{\sum_{i} x_{ij} + \sum_{i} m_{ij}}
\]  

(4)

As regards the quantification of comparative advantages, there are a lot of indices and evaluations. One of them is connected to Béla Balassa, who has made a pioneer work in measuring comparative advantages. During the recent decades a lot of versions of the index have been elaborated, but the present analysis starts from the original formula when reviews the aspects of competitiveness in relation to trade with Slovakia.

The formula of \( B \) index is the following:

\[
B = \frac{x_{ij}}{\sum_{j} x_{ij}} \frac{\sum_{j} x_{ij}}{\sum_{i} \sum_{j} x_{ij}}
\]  

(5)

where \( x \) indicates the export, \( i \) is for the product group, \( j \) is the examined country, and, subsequently, \( x_{ij} \) means the product-level, while \( \sum_{i} x_{ij} \) is the total export of the given country, \( \sum_{j} x_{ij} \) indicates the product-level export, and \( \sum_{i} \sum_{j} x_{ij} \) is the total export of the world or a country group.\(^{10}\)

The \( B \) index starts from the point that the export structure is equally sensitive to the relative costs and the differences between non-price factors.\(^{6}\) Therefore the comparative advantages are expected to determine the structure of export.

The numerator and denominator of Balassa index is between 0 and 1.\(^{11}\) Accordingly, the value of the index can be within \([0;\infty[\) interval.\(^{12}\) If \( B>1 \), the given country has a comparative advantage in case of the examined product, if the value of the index is between 0 and 1, we speak about comparative disadvantage. The index was criticised from many aspects, see for example Fertő 2003, Fertő et al. 2005, or Jámbor et al. 2012. The critical approach can be the consequence of the application of the index widely, in international environment, where it served the comparison of

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\(^{10}\) In the original paper of Balassa, the \( i \) index indicated the combined export of 74 industrial products, while \( j \) index was for the sum of 11 developed industrial countries. In order to moderate the trade policy distortions, the B-index originally was limited only to the examination of industrial products. B-index starts from the fact that the export structure is sensitive both for the relative costs and the differences in non-price factors. Thus the comparative advantages are expected to determine the structure of export.\(^{6}\)

\(^{11}\) If \( x_{ij} / \sum_{j} x_{ij} = 1 \) we speak about monopoly, the product is supplied only by the examined country.

\(^{12}\) The actual upper limit \( \sum_{i} \sum_{j} x_{ij} / \sum_{i} \sum_{j} x_{ij} \) holds to infinity if \( \sum_{i} x_{ij} \) holds to zero, that is the economic weight of the country is not significant regarding the export.\(^{15}\)
very heterogeneous features and market regulators. In our opinion, in case of EU27 countries, (1) the geographical proximity, (2) similar macro-economic conditions, and (3) the nearly identical or simultaneously concluded trade policy agreements in more countries result that the predictability and applicability of the index can be regarded clearly sound.

The index is asymmetric regarding its structure and it is oblique in the positive range owing to the sloping distribution. Dalrum et al. (1988) tried to solve this problem by introducing the revealed symmetric comparative advantages (RSCA) index. [4]

\[ RSCA = \frac{(B+1)}{(B-1)} \] (6)

**RESULTS AND DISCUSSION**

As the result of the EU enlargement in 2004, the agro-trade flow regarding Hungary in relation to Slovakia substantially improved. The trading activities had been relatively limited until the EU accession due to the tariff barriers and other protection mechanisms. In 2000, goods in value of almost 46 thousand euro and 85 thousand tons were exported to Slovakia. Up to 2004, the quantity increased to 98 thousand tons while the value grew only to 65 thousand euro. Following the EU integration, the volume and value of exported goods increased by 1.7-fold. Thus it reached 683 thousand tons and 342 thousand euro by 2008 (Figure 1). [13,19]

In regards to export there was a setback in 2009, following the crisis of 2008 in the world economy, and again a correction came in 2010, then a decline in 2011. Due to this, the value of Hungarian export increased to 836 thousand euro while the import was of 390 thousand euro which resulted a positive trade balance of 446 thousand euro. In the frames of Hungarian import, goods in value of only 35 thousand euro and quantity of 53 thousand tons arrived in 2000. The value of imported products increased gradually during the examined period and it reached 390 thousand euro in 2011. There was a gradual increase regarding the volumes, too, following the imported 53 thousand tons in 2000, it was 616 thousand tons by 2011, so it grew by more than tenfold.
By analysing the trade it can be concluded that there was a short turn in 2004 in the previously positive trading balance of Hungary. The bilateral foreign trade balance was negative (2004-2007). Later on, under mutually favourable conditions, Hungary turned the ratios and increased the value of Hungarian export more than the increasing Slovak import. It was obvious that the EU membership ensured advantages for both parties and they could utilize the market possibilities offered by the EU.

In addition to the new trend, it should also be highlighted that the specific value of Hungarian and Romanian products has a rising tendency, too. (Figure 2) By examining the value in euro per one ton of traded goods it can be seen that the specific values of Slovakia were lower before and right after the EU accession than the export values of Hungary due to the turn of the previous trend. The trend turned from 2006 and the specific value of SK import grew faster than the value of Hungarian export. Thus, following the accession, Hungary traded in relation to Slovakia with less-processed products belonging to lower specific price category, while Slovakia could show considerable value improvement up until the economic crisis of 2008. Moreover, it could retain it even during the declining period following the crisis.

In some cases, some other macroeconomic reasons in the trading processes, e.g. inflation, exchange rate changes of national currencies in relation to each other, can have considerable impact, too. The present research does not discusses the exact quantification in this regard.
The reasons for the trend in case of specific values can be found if the distribution of traded products is analysed. Figure 3/a clearly describes on quantity basis that considerable part of Hungarian export products (2011-ben >50%) was basic product, while its proportion was much more modest in case of Slovak export (2011-ben <20%) which is demonstrated in Figure 4/a

When the trading structure is examined and compared on the basis of value, it is obvious that the ratio of processed and finished products is considerable. In case of Slovak export these two categories together were above 60% in 2011. In the meantime, it was almost 80% in case of Slovak import. (Figures 3/b and 4/b) In regards to Slovak import there was a substantial growth from 2004 to 2006, then again after 2008. In the course of this, the ratio of processed products increased to the expense of finished products, which is very obvious in the value-based approach, too. (Figure: 4a, 4b) Together with this, the quantity and value of highly processed finished products gradually decreased.
The above tendencies are confirmed by the changes which can be observed in case of five key products in the trade. The values of those years are compared with the latest figures which were milestones regarding the EU accession (year of accession: 2004, the middle of the period since the accession: 2007 and the year with the latest available data: 2011). Table 1 introduces the titles of the main imported products and the value expressed in thousand euro.
Table 1: The 5 main products exported from Slovakia to Hungary

<table>
<thead>
<tr>
<th>Item Description</th>
<th>Quantity (ton) 2004</th>
<th>Value (current prices, thousand Euro) 2004</th>
</tr>
</thead>
<tbody>
<tr>
<td>Molasses resulting from the extraction or refining of sugar</td>
<td>35 234</td>
<td>11 662</td>
</tr>
<tr>
<td>Barley</td>
<td>19 836</td>
<td>10 073</td>
</tr>
<tr>
<td>Milk and cream, not concentrated nor containing added sugar or other sweetening matter</td>
<td>18 831</td>
<td>6 973</td>
</tr>
<tr>
<td>Wheat or meslin flour</td>
<td>13 088</td>
<td>6 769</td>
</tr>
<tr>
<td>Malt, whether or not roasted</td>
<td>8 478</td>
<td>4 996</td>
</tr>
<tr>
<td>Wheat or meslin flour</td>
<td>88 109</td>
<td>23 735</td>
</tr>
<tr>
<td>Milk and cream, not concentrated nor containing added sugar or other sweetening matter</td>
<td>37 549</td>
<td>17 614</td>
</tr>
<tr>
<td>Preparations of a kind used in animal feeding</td>
<td>26 797</td>
<td>17 021</td>
</tr>
<tr>
<td>Malt, whether or not roasted</td>
<td>18 949</td>
<td>15 680</td>
</tr>
<tr>
<td>Molasses resulting from the extraction or refining of sugar</td>
<td>18 573</td>
<td>13 875</td>
</tr>
<tr>
<td>Milk and cream, not concentrated nor containing added sugar or other sweetening matter</td>
<td>77 086</td>
<td>46 413</td>
</tr>
<tr>
<td>Wheat or meslin flour</td>
<td>72 707</td>
<td>33 271</td>
</tr>
<tr>
<td>Undenatured ethyl alcohol of an alcoholic strength of &gt;= 80%; ethyl alcohol and other spirits, denatured, of any strength</td>
<td>52 409</td>
<td>23 078</td>
</tr>
<tr>
<td>Residues of starch manufacture and similar residues, beet-pulp, bagasse and other waste of sugar manufacture, brewing or distilling dregs and waste, whether or not in the form of pellets</td>
<td>40 564</td>
<td>21 843</td>
</tr>
<tr>
<td>Wheat and meslin</td>
<td>34 061</td>
<td>20 099</td>
</tr>
</tbody>
</table>

Source: on the basis of [1] own construction

It is obvious that the elimination of trade barriers has resulted significant changes in the composition of key product groups although some products are stable part of the group. The main products originating from Slovakia belong basically to the category of processed and finished products, while in the other direction, from Hungary to Slovakia, the dominance of raw materials is clear. Table 2 contains the main products of Hungarian export in the examined years.
Table 2: The 5 main products exported from Hungary to Slovakia

<table>
<thead>
<tr>
<th></th>
<th>a) quantity (ton)</th>
<th>b) value (current prices, thousand Euro)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1005 'Maize or corn</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2007 'Maize or corn</td>
<td>90 516</td>
<td>22 403</td>
</tr>
<tr>
<td>1001 Wheat and meslin</td>
<td>30 160</td>
<td>19 659</td>
</tr>
<tr>
<td>1701 'Cane or beet sugar and chemically pure sucrose, in solid form</td>
<td>30 107</td>
<td>12 129</td>
</tr>
<tr>
<td>1101 'Wheat or meslin flour</td>
<td>27 962</td>
<td>11 686</td>
</tr>
<tr>
<td>1702 'Other sugars, incl. chemically pure lactose, maltose, glucose and fructose, in solid form; sugar syrups not containing added flavouring or colouring matter; artificial honey, whether or not mixed with natural honey; caramel</td>
<td>18 476</td>
<td>9 980</td>
</tr>
<tr>
<td>1005 'Maize or corn</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2007 'Maize or corn</td>
<td>357 429</td>
<td>89 251</td>
</tr>
<tr>
<td>1205 'Rape or colza seeds, whether or not broken</td>
<td>179 605</td>
<td>87 920</td>
</tr>
<tr>
<td>1701 'Cane or beet sugar and chemically pure sucrose, in solid form</td>
<td>99 402</td>
<td>80 252</td>
</tr>
<tr>
<td>2011 'Milk and cream, not concentrated nor containing added sugar or other sweetening matter</td>
<td>94 377</td>
<td>62 414</td>
</tr>
<tr>
<td>1206 'Sunflower seeds, whether or not broken</td>
<td>79 473</td>
<td>46 901</td>
</tr>
</tbody>
</table>

Source: on the basis of AKI 2012, own construction

Besides the special features of products concerning their role in the trade and the degree of processing, the significance of the total Hungarian export and competitiveness is also very considerable.

The export-import ratio is very interesting in the tendencies of trading processes (see Figure 5). This ratio is the simplest export specification index which compares the export of examined countries (country groups) to the import. As a basis for comparison, the values of those countries
were compared which are the most important regarding the Hungarian export, that is EU15, EU12, V3 and Slovakia.\textsuperscript{14}

From the analysis of the whole time interval it has become clear that the value of the ratio gradually decreased in the examined country groups, that is the Hungarian export surplus diminished year by year. (Figure 5) The greatest decline was seen in case of V3 and EU12, but the decreasing trend was obvious in regard to all the examined groups. The lack of trade agreements and national subsidies, as well as the measurements of common internal market as the result of EU accession substantially reduced the Hungarian advantages. In addition to this, the possibilities offered by the accession were not fully utilized by the Hungarian side. In other approach, the partners could utilize the opportunities to a greater degree and more successfully than the Hungarian actors. After 2005, however, the trend turned and there was a restructuring. In spite of the fact that there were not any changes concerning the EU27 average, the market processes in case of EU12 went in a more favourable direction: the value of ratio increased. In the meantime, the tendencies became worse in regard to EU15 thus the value of ratio decreased.

At the end of the examined period, the values of Slovakia could be clearly separated from the trend of the groups. The Hungarian export resulted surprising values. Although the export-import ratio in relation to EU12 did not change and there was only a slight change in case of V3, there was a strong improvement of positions in regards to Slovakia. The changing ratio means that the Hungarian party could better utilize the advantages of common internal market in case of Hungarian export due to a gradually realized improvement.

\textbf{Figure 5: The Hungarian export-import ratio in case of some country groups and Slovakia (2000-2011)}

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{figure5.png}
\caption{The Hungarian export-import ratio in case of some country groups and Slovakia (2000-2011)}
\end{figure}

Source: on the basis of AKI 2012, own construction

\textsuperscript{14} As regards the selection of country groups, the similar features and the same date of EU accession are suggested for consideration.
When the formula of trade specialization index by Iapadre is substituted on the basis of analysing the bilateral trading activity, it has become obvious which categories of the product groups are in an advantageous and which are in a disadvantageous trading position. In case of disadvantageous categories, the values are below zero, while the position is advantageous when the value of the index is a positive figure.

Table 3: TS index values in case of agricultural trade between Hungary and Romania (2000-2011)

<table>
<thead>
<tr>
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<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>01 live animals</td>
<td>-0.84</td>
<td>-0.12</td>
<td>-1.25</td>
<td>-0.87</td>
<td>-1.52</td>
<td>-1.03</td>
<td>-1.29</td>
<td>-1.26</td>
<td>-0.81</td>
<td>-0.82</td>
<td>-0.43</td>
<td>-0.16</td>
</tr>
<tr>
<td>02 meat and edible meat offal</td>
<td>0.18</td>
<td>0.19</td>
<td>0.23</td>
<td>0.19</td>
<td>-0.48</td>
<td>-1.02</td>
<td>-0.79</td>
<td>-0.68</td>
<td>-0.17</td>
<td>0.06</td>
<td>0.23</td>
<td>0.35</td>
</tr>
<tr>
<td>03 fish and crustaceans, molluscs and other aquatic invertebrates</td>
<td>-1.48</td>
<td>-0.95</td>
<td>-1.71</td>
<td>-1.72</td>
<td>-1.78</td>
<td>-1.77</td>
<td>-1.76</td>
<td>-1.67</td>
<td>-1.62</td>
<td>-1.46</td>
<td>-1.23</td>
<td>-0.85</td>
</tr>
<tr>
<td>04 dairy produce; birds’ eggs; natural honey; edible products of animal origin, not elsewhere specified or included</td>
<td>-1.57</td>
<td>-0.91</td>
<td>-1.46</td>
<td>-1.45</td>
<td>-1.49</td>
<td>-1.19</td>
<td>-1.10</td>
<td>-1.05</td>
<td>-0.85</td>
<td>-0.97</td>
<td>-0.76</td>
<td>-0.50</td>
</tr>
<tr>
<td>05 products of animal origin, not elsewhere specified or included</td>
<td>-0.82</td>
<td>-1.195</td>
<td>-0.39</td>
<td>-0.44</td>
<td>-1.22</td>
<td>-0.54</td>
<td>-0.75</td>
<td>-0.87</td>
<td>-0.81</td>
<td>-0.56</td>
<td>-0.86</td>
<td>-0.57</td>
</tr>
<tr>
<td>06 live trees and other plants; bulbs, roots and the like; cut flowers and ornamental foliage</td>
<td>-0.31</td>
<td>0.11</td>
<td>0.02</td>
<td>-0.35</td>
<td>-0.07</td>
<td>-0.38</td>
<td>0.08</td>
<td>-1.38</td>
<td>-1.26</td>
<td>-0.71</td>
<td>-0.89</td>
<td>-1.00</td>
</tr>
<tr>
<td>07 edible vegetables and certain roots and tubers</td>
<td>-0.49</td>
<td>-0.98</td>
<td>-0.77</td>
<td>-1.03</td>
<td>-0.57</td>
<td>-0.80</td>
<td>-0.58</td>
<td>-0.66</td>
<td>-0.70</td>
<td>-0.81</td>
<td>-0.83</td>
<td>-0.88</td>
</tr>
<tr>
<td>08 edible fruit and nuts; peel of citrus fruits or melons</td>
<td>-0.75</td>
<td>-0.13</td>
<td>-0.23</td>
<td>-0.13</td>
<td>0.05</td>
<td>-0.71</td>
<td>-0.90</td>
<td>-1.02</td>
<td>-0.78</td>
<td>-0.46</td>
<td>-0.46</td>
<td>-0.71</td>
</tr>
<tr>
<td>09 coffee, tea, maté and spices</td>
<td>-0.27</td>
<td>-0.02</td>
<td>0.15</td>
<td>0.01</td>
<td>-0.12</td>
<td>0.08</td>
<td>0.18</td>
<td>0.15</td>
<td>0.25</td>
<td>-0.24</td>
<td>-0.46</td>
<td>-0.25</td>
</tr>
<tr>
<td>10 cereals</td>
<td>-0.05</td>
<td>0.04</td>
<td>-0.26</td>
<td>-1.12</td>
<td>-0.97</td>
<td>-1.11</td>
<td>-0.32</td>
<td>-0.72</td>
<td>-0.04</td>
<td>-0.42</td>
<td>-0.22</td>
<td>-0.14</td>
</tr>
<tr>
<td>11 products of the milling industry; malt; starches; inulin; wheat gluten</td>
<td>-1.16</td>
<td>-0.89</td>
<td>-0.53</td>
<td>-0.36</td>
<td>-0.86</td>
<td>0.97</td>
<td>-0.57</td>
<td>-1.34</td>
<td>-0.62</td>
<td>0.02</td>
<td>0.07</td>
<td>0.06</td>
</tr>
<tr>
<td>12 oil seeds and oleaginous fruits; miscellaneous grains, seeds and fruit; industrial or medicinal plants; straw and fodder</td>
<td>-0.43</td>
<td>0.21</td>
<td>-1.10</td>
<td>-1.47</td>
<td>-1.70</td>
<td>-1.68</td>
<td>0.24</td>
<td>-1.71</td>
<td>-1.65</td>
<td>-1.70</td>
<td>-1.41</td>
<td>-0.10</td>
</tr>
<tr>
<td>13 lac; gums, resins and other vegetable saps and extracts</td>
<td>0.15</td>
<td>-0.02</td>
<td>0.15</td>
<td>0.15</td>
<td>0.15</td>
<td>0.15</td>
<td>0.15</td>
<td>-1.85</td>
<td>-0.43</td>
<td>-0.96</td>
<td>-0.88</td>
<td>0.07</td>
</tr>
<tr>
<td>14 vegetable pelting materials; vegetable products not elsewhere specified or included</td>
<td>-1.20</td>
<td>-2.02</td>
<td>-1.15</td>
<td>-0.81</td>
<td>-0.88</td>
<td>-0.93</td>
<td>-0.34</td>
<td>-0.35</td>
<td>-0.38</td>
<td>-0.25</td>
<td>-0.22</td>
<td>-0.20</td>
</tr>
<tr>
<td>15 animal or vegetable fats and oils and their cleavage products; prepared edible fats; animal or vegetable waxes</td>
<td>-0.49</td>
<td>-2.29</td>
<td>-1.40</td>
<td>-1.33</td>
<td>-1.24</td>
<td>-0.19</td>
<td>-0.05</td>
<td>0.12</td>
<td>0.22</td>
<td>-0.13</td>
<td>0.13</td>
<td>0.08</td>
</tr>
<tr>
<td>16 preparations of meat, of fish or of crustaceans, molluscs or other aquatic invertebrates</td>
<td>0.09</td>
<td>0.07</td>
<td>0.00</td>
<td>-0.02</td>
<td>-0.33</td>
<td>-1.14</td>
<td>-1.16</td>
<td>-1.22</td>
<td>-1.12</td>
<td>-1.05</td>
<td>-0.94</td>
<td>-1.00</td>
</tr>
<tr>
<td>17 sugars and sugar confectionery</td>
<td>-0.49</td>
<td>-2.29</td>
<td>-1.40</td>
<td>-1.33</td>
<td>-1.24</td>
<td>-0.19</td>
<td>-0.05</td>
<td>0.12</td>
<td>0.22</td>
<td>-0.13</td>
<td>0.13</td>
<td>0.08</td>
</tr>
<tr>
<td>18 cocoa and cocoa preparations</td>
<td>0.09</td>
<td>0.07</td>
<td>0.00</td>
<td>-0.02</td>
<td>-0.33</td>
<td>-1.14</td>
<td>-1.16</td>
<td>-1.22</td>
<td>-1.12</td>
<td>-1.05</td>
<td>-0.94</td>
<td>-1.00</td>
</tr>
<tr>
<td>19 preparations of cereals, flour, starch or milk; pastrycooks’ products</td>
<td>-1.03</td>
<td>-0.64</td>
<td>-1.03</td>
<td>-1.09</td>
<td>-0.91</td>
<td>-0.81</td>
<td>-0.62</td>
<td>-0.55</td>
<td>-0.36</td>
<td>-0.38</td>
<td>-0.22</td>
<td>-0.27</td>
</tr>
<tr>
<td>20 preparations of vegetables, fruit, nuts or other parts of plants</td>
<td>-0.25</td>
<td>-0.35</td>
<td>-0.26</td>
<td>-0.26</td>
<td>-0.22</td>
<td>0.15</td>
<td>-0.06</td>
<td>-0.22</td>
<td>-0.25</td>
<td>0.04</td>
<td>0.07</td>
<td>0.07</td>
</tr>
<tr>
<td>21 miscellaneous edible preparations</td>
<td>-0.64</td>
<td>-0.33</td>
<td>-0.50</td>
<td>-0.68</td>
<td>-0.52</td>
<td>-0.49</td>
<td>-0.31</td>
<td>0.10</td>
<td>0.02</td>
<td>-0.24</td>
<td>-0.15</td>
<td>0.02</td>
</tr>
<tr>
<td>22 beverages, spirits and vinegar</td>
<td>-0.41</td>
<td>-0.79</td>
<td>-0.92</td>
<td>-0.52</td>
<td>-0.37</td>
<td>-0.02</td>
<td>0.29</td>
<td>-0.31</td>
<td>-0.55</td>
<td>-0.50</td>
<td>-0.34</td>
<td>-0.33</td>
</tr>
<tr>
<td>23 residues and waste from the food industries; prepared animal fodder</td>
<td>0.21</td>
<td>-0.22</td>
<td>-0.02</td>
<td>-0.03</td>
<td>-0.33</td>
<td>0.09</td>
<td>-0.54</td>
<td>-0.46</td>
<td>-0.21</td>
<td>-0.33</td>
<td>-0.36</td>
<td>-0.46</td>
</tr>
<tr>
<td>24 tobacco and manufactured tobacco substitutes</td>
<td>0.15</td>
<td>0.27</td>
<td>0.17</td>
<td>0.20</td>
<td>-0.27</td>
<td>0.68</td>
<td>0.63</td>
<td>0.23</td>
<td>-0.53</td>
<td>-0.23</td>
<td>0.54</td>
<td>0.12</td>
</tr>
</tbody>
</table>

Source: on the basis of AKI 2012, own construction

As regards the distribution of values among the categories it can be seen that while the groups were balanced before the EU accession of Slovakia, the group of products with positive values expanded after 2007 from the aspect of Hungary.

The relative results of competitiveness are introduced through the value of RSCA. The results are included in Figures 5 and 6. It is clear on the basis of examinations that the values of the index
as well as competitiveness deteriorated in 15 categories of the Hungarian export and in 7 categories of the import.  

On the basis of this it can be concluded that the value of competitiveness decreased in case of product groups number 20 (preparations of vegetables, fruit, nuts or other parts of plants), 16, (preparations of meat, of fish or of crustaceans, molluscs or other aquatic invertebrates) and 19 (preparations of cereals, flour, starch or milk; pastrycooks' products). The best performing categories with improving values of competitiveness are the following product groups: number 9 (coffee, tea, maté and spices), 11 (products of the milling industry; malt; starches; inulin; wheat gluten), and 12 (oil seeds and oleaginous fruits; miscellaneous grains, seeds and fruit; industrial or medicinal plants; straw and fodder). As regards competitiveness values, the greatest deviation was seen in case of category number 12 (oil seeds and oleaginous fruits; miscellaneous grains, seeds and fruit; industrial or medicinal plants; straw and fodder), 17 (sugars and sugar confectionery) and 11 (products of the milling industry; malt; starches; inulin; wheat gluten).

Figure 5: Values of RSCA index in regards to trade between Hungary and Slovakia (2000 – 2011)

Note: Title of figures can be found in Table 3
Source: on the basis of AKI 2012, own construction

The calculation can be made in the other dimension of trade, from the aspect of the partner country, too. It is very obvious in the Slovak-Hungarian relation that competitiveness declined the most in categories number 19 (preparation of cereals, flour, starch or milk, pastrycooks' products), 21 (miscellaneous edible preparations) and 20 (preparations of vegetables, fruit, nuts or other parts  

\footnote{It should be added for the explanation of the figure that the thin line in case of each category traditionally indicates the minimum and maximum value during the period. The thick column indicates the opening and closing values of the period. If the column is white compared to the opening value, the value of closing date improved. If the column is black compared to the opening value, the value of closing date is worse.}
of plants). Out of these, the items in category 9 can be due to the impacts concerning the origin of raw materials and the related trade diversion. Anyway, improvement can be detected in case of products from group 9 (coffee, tea, maté and spices), 10 (cereals) and 11 (products of the milling industry, malt, starches, inulin, wheat gluten). It is also interesting that the greatest fluctuation within the period could be observed in category 9 (coffee, tea, maté and spices) and 10 (cereals).

Figure 6 Values of RSCA index in regards to trade between Slovak and Hungary (2000-2011)

Note: The title of figures is included in Table 3
Source: on the basis of AKI 2012, own construction

CONCLUSION

It is very remarkable from the analysis of Hungarian-Slovak foreign trade that - following an early slowdown - the trade surplus of the Hungarian party substantially increased after 2006. It is a fact that Hungary and Slovakia could successfully utilize the market possibilities and enforce their commercial interests after the EU accession in 2004 (in spite of the foreign trade position losses of Hungary in relation to Visegrad countries). Thus the parties could increase the quantity as well as the value of export. The examination of product structure, however, made it clear that the role of raw materials is dominant in the Hungarian export, in contrary to the structure of goods coming from Slovakia. It can be concluded that the export value per one quantity unit was unfavourable for Hungary following the accession. In case of Slovakia, however, the ratio of processed products with higher value added is significant and shows an increasing tendency. Their ratio in bilateral product trade gradually grows both in value and quantity.
The values of foreign trade index point out that the market position of many products improved after the EU integration and the realization of comparative advantages became possible within trading. The research also revealed that – on the basis of quantity favours - Hungary was more efficient to utilize the trading advantages offered by the common market. The research has also reviewed the group of competitive products. It has also been concluded that the Slovak products could increase their relative competitiveness in more cases and to a greater degree while regarding Hungarian products, the competitiveness declined in case of two-thirds of products.

Increasing market involvement of competitive products can be forecasted in the course of growth and/or transformation of trade at international and regional level, independently from the way of winning new markets (either by creating trade or diverting trade). It would be the basis of constant and steady growth for the Hungarian as well as Slovak agriculture if the group of products with comparative advantages expanded and active foreign trade involvement realized in case of neighbouring countries, too.

BIBLIOGRAPHY

[5] EUVONAL [2012]: Az EU-ba történő áruszállításkor elég-e a szállítólevél vagy kell vá már


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