

SZENT ISTVÁN UNIVERSITY, Gödöllő
Management and Business Studies Doctoral School
Doctoral (PhD) Thesis

**EFFECTS OF CHANGING TRADE POLICY
ON THE HUNGARIAN FRUIT AND
VEGETABLE SECTOR**

Prepared by:
Anikó Juhász

**Gödöllő
2009.**

Doctoral School

Description: Management and Business Administration Doctoral School

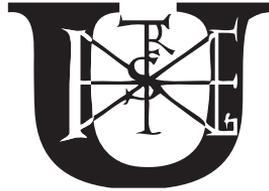
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1. Introduction

„Are we creating building blocks or stumbling blocks?“
[BHAGWATI, 1990]

The changes of the international commercial policy occur in the context of the principles of continuous liberalisation; however, sometimes the practice follows a course right to the contrary direction. For example, the trade conventions grant market access benefits for the signatory countries, implying however disadvantages for those not participating therein. Therefore, during my work I always strived for keeping in eye Bhagwati's question for remembering me that **careful consideration of the different aspects is vital in research.**

1.1. Choice of subject and background

The **subject-matter of the research** constitutes in the **point of concurrence** of the two topics most frequently studied by me, namely **of the fruit and vegetable sector and of the foreign trade policy**. The selection of the fruit and vegetable sector is motivated by the fact that this is the branch providing for one of the highest export incomes within the agriculture, having continuously maintained even its positive foreign trade balance since the change of regime. And why from the aspect of foreign trade policy? Because, with its intricate and overall system of measures it offers an exciting and continuously changing field of analysis.

The **last ten years, the period elected for analysis**, brought along for Hungary continuous and extremely important eco-policy changes. The changes connected with the **country's accession to the European Union** had namely started already far prior to the actual accession in 2004, making feel their real effects in several areas even years thereafter. In my essay, I would like to show-up as much as possible of this eventful period. The work for me was especially exciting, as, prior to the accession, I collaborated in the preparation of several forecasts and studies, consequently the ex-post evaluation of the impacts of the accession implied also my confrontation with my former work.

Fortunately, **due to the importance of the EU accession, the trade literature background was not lacking**. Since the Copenhagen European Council meeting in 1993, when the possibility of accession for the Associated Countries was decided, then following the 2002 Copenhagen agreement on agricultural accession, countless political and scientific analyses were prepared within and from the aspect of, both the receiving Community and the accessing countries. The studies sometimes presenting blatantly only the disadvantages or even only the benefits often rouse animosity, but finally the opinions came closer. Of course, the reality developed in a more complex manner than foreseen even in the most equilibrated analysis.

1.2. Objectives and the structure of the thesis

During preparation of my thesis, based on critical evaluation of the literature used, I have conceived for myself, what may render an analysis really useful. During my work I wished to keep in eye the following summary principles: **the structure of the study should be clear and simple; the curve of its discussion easy to follow; it should carry some independent opinion/thought/idea, its conclusions have to result from the analysis and it should offer some practical benefit.** I have made my best in order to observe these principles.

I have expended plenty of labour for the **independent thoughts** and for the **conclusions resulting from the analysis**, hopefully with an outcome sensible also for the readers. Having regard to the **transparency and to the curve of the thoughts**, I have tried to create **triple units**: I have examined three periods (beginning of the preparation for accession, intensive preparation, post-accession), I have averaged three years for rectifying peak values (1998-2000, 2001-2003 and 2005-2007), our foreign trade partners have been divided into three target markets/supplier groups (EU-15, EU-9 and third countries¹), and I have examined three indicators during analysis of performance changes (turnover, share and balance).

For elucidating the issue of **practical benefit**, I have to follow a longer train of thought. Prior to 2004, extended scientific and popular literature dealt with the examination of the accession preparation processes and of the possible effects of the accession in the newly accessing EU Member States. Based on analysis results in the better case, or only on desires and fears in the worse case, some statements elevated to a level strongly influencing both the public and the professional opinion. Now the partial field studied by me, the trade policy, was especially apt for making conclusions believed to be universal. Of course, life has brought a number of surprises, compelling analysts, me included, to face their previous statements. **Thus, our accession offers a unique and important possibility to check and to refine our research methods.** And a similar follow-up of changes is far from being futile, as there will be still trade liberalisation occurrences whether due to the further extension of the free trade agreements or following the WTO round to be finally concluded sooner or later.

The **thesis is divided into three main units**; the first one is the literature overview, the second one implies the description of methodology and the third one presents the research findings. Both the literature overview and the own

¹ The EU-15 countries include the old Member States: Germany, France, Belgium, the Netherlands, Luxembourg, Italy, United Kingdom, Spain, Portugal, Greece, Ireland, Austria, Sweden, Denmark and Finland. The EU-9 countries cover the countries accessing together with us: Esthonia, Latvia, Lithuania, Poland, the Czech Republic, Slovakia, Slovenia, Cyprus and Malta. Third countries are countries other than the EU-25 countries.

research are organised in **four subsections**: the first one relating to the period between 1998 and 2000, designated as starting point, the second one covering the preparatory period between 2001 and 2003, for presenting the differences still subsisting prior to the accession, and the third one, concerning the period following the accession, between 2005 and 2007. I judged that the first step for revealing the interrelations lying behind the huge quantity of data and information consisted in ensuring perspicuity.

In each single Section I have tried to apply new or newish methods or approaches. The **own research** starts with a general **statistical analysis** of the fruit and vegetable sector's **foreign trade**, using the newish methodology element of strictly maintaining the tripartite system, implying presentation of the three periods by using the average of three years broken down to three target markets respectively supplier countries. The second part is intended to present the pre-accession history of the **market access conditions**, by using traditional methods, law interpretation and turnover analysis; in my view, the Section's main merit consists in the overallness of the analysis. In the third part, I have determined the **customs protection** applicable to our imports and exports prior and after the accession, this task constituting the greatest challenge in this thesis. Last but not least I have set the goal of performing **evaluation of the foreign trade performance** changing in consequence of our accession of the selected vegetable and fruit products, through calculating three pairs of indicators (turnover and its change, market share and its change, balance and its change) for each direction then performing performance evaluation by cluster analysis.

I am aware of the fact that the system of instruments of the trade policy is extremely complex and customs, defined by HUSZÁR [1997] as „Archimedes' points”, even though extremely important, constitute merely a single element of this system. In addition, it would be worth testing the teachings of the ex-post analysis in ex-ante evaluations in the future. The revealed product performance differences, on the other hand, offer themselves for preparation of an export strategy. **Thus, my research may be further continued in three different directions**: first, it can be extended by an **impact study into the other trade policy instruments** (e.g. export subsidies, non-tariff trade barriers, voluntary standards), secondly, the **impact forecast of future changes** can be elaborated, and last but not least, its practical application may serve as **basis for the elaboration of the sectoral export strategy. Due to limitation of space, I could not address this triple challenge in this study.**

1.3. Working hypotheses

My working hypotheses were based on assumptions held important by me that were shaped during literature processing and my previous research. Beyond overall analysis, in the part of my thesis summing up the results, I have laid great emphasis on finding answers to these questions.

1. Prior to **starting analysis of the foreign trade turnover of the vegetable and fruit sector**, I had the following hypotheses in this topic:
 - a. The accession has influenced the product and supplier structure in our imports to a greater extent than in our exports.
 - b. The changes of the foreign trade turnover following the accession exceeded in importance those occurred after entry into force of the liberalisation agreements.
 - c. The importance of the EU-15 Member States as our foreign trade partner has increased in terms of volume and share, and this to the detriment of third countries and not to that of the EU-9 countries.
2. **As regards the stage of the agricultural trade liberalisation process between Hungary and the EU preceding the accession**, in my supposition, the development of the turnover did not follow or followed only in part the unbalance to our benefit of the Hungarian and EU customs barriers' lowering, as the EU, as a group of countries with stronger economy, was able to better exploit even lower benefits.
3. When **comparing the customs barriers still existing prior to the accession in the EU and in Hungary**, I assumed that:
 - a. As a whole, the extent of customs barriers was higher in Hungary in the average; however, in respect of certain products, the EU customs were higher.
 - b. Hungary's customs protection toward third countries as adopted following the accession implied decrease in the average, but in the case of certain products, our market became better protected.
 - c. The fruit and vegetable sector belonged to the sectors with the highest remaining customs protection, implying that the accession resulted in a well sensible decrease of the customs protection even after the last liberalisation agreement.
4. When examining the effects of the adopted trade policy instruments, that is, **preparing an analysis based on performance index of the accession impacts**, I made two suppositions:
 - a. Our main export and import products can be easily divided in well separated groups, forming roughly four different categories at both turnover

directions and all three pairs of indicators, and upon their summary:

- Small and decreasing: declining
 - Small but increasing: emerging
 - Large but decreasing/stagnating: matured
 - Large and increasing: champion (export) – threatening (import)
- b. The degree of customs protection changing after the accession of the export and import products is in correlation with the categorisation of the given product in one of the above-listed performance groups.

2. Material and methods

2.1. Selection of the products to be analysed

When selecting the products, I have taken into account the criterion of turnover representativeness. The period of evaluation covered the average of the years 2005 to 2007; the threshold value of foreign trade for being included into the analysis was 5 million Dollars. Product depth: up to 8 digits of HS; I have felt this depth indispensable for interpreting the customs protection. I am aware that, according to the HS classification some products are thus ranked here that would be otherwise excluded on the basis of professional criteria (e.g.: potatoes or even eating corn hybrid seeds). Despite thereof, I have not excluded such products from analysis, the first arranging principle being consisted in the foreign trade, while the selection of the sector ranking only second; therefore I have followed the foreign trade HS classification.

In respect of exports I have elected 20 products with a total representativity of 70%, including the following products grouped on the basis of processing methods, according to decreasing turnover volumes:

- Fresh products, 56% representativity: peppers, mushrooms, water melons, sour cherry, horse-radish, apples, asparagus.
- Frozen products, 69% representativity: eating corn, green peas, other vegetables, other fruits.
- Dried products, 79% representativity: other vegetables, green peas.
- Canning industry products, 78% representativity: eating corn, green peas, sour cherry, other vegetables, cucumber, and pepper.
- Vegetable and fruit juices, representativity 59%: apple.

In the case of imports, I have also selected 20 products, having a total representativity rate, though lower, but always reaching 50%, including, grouped by processing methods, the followings:

- Fresh products, 61% representativity: banana, tomatoes, orange, pepper, table grape, clementines, lemon, apples, cucumber, pastiches, potato, water melon, nuts without shell, peaches.
- Frozen products, 50% representativity: potato.
- Dried products, 16% representativity: eating corn hybrid seeds.
- Canning industry products, 25% representativity: potato, peaches.
- Vegetable and fruit juices, 36% representativity: orange, apple.

2.2. Calculation of the real customs charges of market access

„Calculating with trade-weighted customs tariffs is like measuring distance with an elastic band.”
[BUREAU-SALVATICI, 2003]

Professionals dealing with trade policies have been paying great attention to the issue of market access for a long time, and especially, research studies discussing this topic have been multiplied since the Uruguay Round of the WTO. Based on the Trade Policy Reviews received from the different countries, the WTO analyses the trade policy trends according to several criteria and issues. One of the most important topics among them covers the market access, analysed in connection with the following criteria:

- Tariffs
- Tariff quotes
- SSG, Special Safeguard
- STE, State Trading Enterprises
- NTB, Non-tariff Trade Barriers

The actual **export limitations** or, regarded from the other side, **import protection** of a country could be determined through taking into account the above factors in the aggregate. One of the objectives of the previous Uruguay Round consisted in decreasing the aggregate trade restricting effects thereof. Following conclusion of the Round, since the middle of the 90s, several researchers have analysed the trade liberalisation process from several aspects. The latter two criteria, though apt for constituting important elements of a country's import protection without doubt, are difficult to being quantified in their effects [BEGHIN-BUREAU 2001; BOUET ET AL 2001]. The customs protection (tariffs and tariff quotas) can be however determined, though a great number of methodology and technical problems emerge also in this case. Therefore, in my thesis I am discussing with great emphasis with the first and the second ones of the mentioned five criteria, that is tariffs and tariff quotas.

Two fundamental problems emerge when **calculating the actual customs charges**:

- The incommensurability of the specific and compound tariffs with ad valorem tariffs.
- Considerable tariff preferences granted in the Regional Trade Agreements.

The first difficulty emerges in connection with the **specific and compound tariffs**; their recalculation is indispensable also due to the analysis of the previous accession effects and of the effects of the future WTO negotiations, because only the actual charges of the market access, calculated under consideration of several factors can be included among the factors leading to turnover changes.

The task therefore would consist in converting ad valorem tariffs into percentual tariffs, constituting apparently a very simple task through the utilisation of the good's value:

$$(1) AVE = \text{Specific tariff} / \text{Import price}$$

At this point, the simple formula starts to cause difficulties. As for the time of this research period (2002-2004) no detailed product and relation level EU tariff equivalent calculations are available, I have applied the import prices of the importer country, that is, those of the EU. Consequently the formula for calculating tariff equivalent will be as follows:

$$(2) AVE_{EU} = \text{Specific tariff} / \text{Import price}_{EU}$$

In the meantime however, as the WTO negotiations progressed, several tariff equivalent calculation methods have been proposed and rejected. The EUROPEAN COMMISSION [2005] provided evaluation of such methods, under consideration of the European Union's interests. The biggest problem in connection with the tariff equivalent calculation proposed during the WTO negotiations consisted in the fact that it takes into account the world market prices based on the UNO statistics, instead of the import prices of the importing country. Therefore the formula now is as follows:

$$(3) AVE_{Vi} = \text{Specific tariff} / \text{Import price}_{Vi}$$

As regards the EU customs protection, two problems with opposite signs emerge with this formula:

- The UNO statistics are less detailed, therefore it cannot reflect quality differences within the single product groups as exactly, as the EU customs tariffs do.
- The world market prices cover the consequences of the preferential market access granted by the RTAs.

As a compromise for resolving this problem, a weighted price, taking into account both prices, is calculated in all cases, when the difference of the EU and the world market prices exceed 40%, or the difference in the AVE calculated with their use exceeds 20%:

$$(4) AVE_{WTO} = \text{Specific tariff} / (0.25 * \text{Import price}_{EU}) + (0.75 * \text{Import price}_{Vi})$$

Recently both the European Commission [EUROPEAN COMMISSION, 2007] and the WTO [WTO, 2007] have published documents supporting the supposition that detailed AVE calculations were available; however, detailed data up to product and relation depth that could be used for further analyses remain however inaccessible. Even as a researcher, I did not succeed in getting access to such in-depth background data. Therefore, in the rest of my study I have used the

results obtained with my own previous method. All the same, I would consider it as an exciting continuation of my research subject to perform the calculations and to compare their results with my present results, if it would be possible to obtain all the same the official EU or WTO AVE data.

The other difficulty constituted in the **effects of the Regional Trade Agreements**, therefore calculations had to be performed for each country separately, implying that also the scope of the countries to be involved in the research had to be restricted, namely to the EU-15 Member States, to the 9 candidate countries accessing the EU together with Hungary and to some so-called third countries. I tried to determine the extent of the aggregate customs protection in a uniform manner by using tariff rates weighted with the turnover of the counties, even though both in compliance with the trade literature [OECD 2002, BOUET ET AL. 2001, BURFISHER ET AL. 2003, BUREAU-SALVATICI 2003] and on the basis of my own findings, I have to confirm that the tariff endogeneity problem has to be taken into account during evaluation of the results:

$$(5) \text{Weighted AVE}_{\text{total}} = \sum_{k=1-n} (\text{AVE}_{1-n} / \text{Turnover}_{\text{total}}) * \text{Turnover}_{1-n}$$

What more, based on the calculations now performed, we have to agree that, as RTAs are spreading, the bilateral calculation of the tariffs, established in relation of the single countries seems to be the best method for a realistic and accurate interpretation and analysis of the market protection [BOUET ET AL 2001]. The scientific requirements of this thesis and the complex product structure of the fruit and vegetable sector do not favour a similar elaborateness; however product level and bilateral analyses offer a more refined and more general picture for the practical use. For this reason, though analysis by countries was not possible, I have separated the results by main relations (EU-15 (h), EU-9 countries accessing together with us (i) and third countries (j)):

$$(6) \text{AVE}_{\text{EU-15}} = \sum_{k=1-h} (\text{AVE}_{1-h} / \text{Turnover}_{\text{EU-15}}) * \text{Turnover}_{1-h}$$

$$(7) \text{AVE}_{\text{EU-9}} = \sum_{k=1-i} (\text{AVE}_{1-i} / \text{Turnover}_{\text{EU-9}}) * \text{Turnover}_{1-i}$$

$$(8) \text{AVE}_{\text{tc}} = \sum_{k=1-j} (\text{AVE}_{1-j} / \text{Turnover}_{\text{tc}}) * \text{Turnover}_{1-j}$$

2.3. Sectoral performance analysis

I have designated as **performance measurement** the analysis of the turnover changes of the sector, because I **did not find as appropriate the term of competitiveness**, because – in my construction – it would require relative indices, that means, comparison with a competitor. The measurement of competitiveness has otherwise a widely used system of indices, as shown in the summary table

compiled by JÁMBOR – MÓDOS – TÓTH [2008] (Table 1). Even if taking into account only the trade indices strictly connected with foreign trade, I would have to elect from 7 indices; with regard to the controversies between my research objective and the available data, this would imply serious difficulties.

Table 1

Systematisation of the competitiveness measurement methods

Categorisation	Methods	Description of indices
Traditional indices	Natural methods (price, cost, income, area etc.)	Spatial efficiency, price competitiveness, income generating ability, unit cost index
Trade indices	Constant market share, manifesting comparative advantages, sector specialisation, Gruber-Lloyd index	CMS, RCA, RTA, lnRXA, RC, SSI, GL
Resource cost indices	Resource cost indices, subsidisation indices, operational competitiveness	DRC, BRC, PCR, PSE, CSE, OCRA

Source: [JÁMBOR – MÓDOS – TÓTH, 2008]

My further aversion to the term competitiveness is identical with that of ÉLTETŐ [2003, p. 278]: “... the availability of the foreign trade data, the easy measurability and comparability of the related processes entice us to evaluate a country’s competitiveness on this basis, even though real conclusions in this respect may only be drawn upon a careful analysis of the concerned country’s structure and country-specific features.”

Consequently, I intend to measure the export performance and import position of the Hungarian fruit and vegetable sector compared to itself in a time perspective. The **three periods** include:

- the initial stage of the agricultural trade liberalisation (1998-2000),
- the pre-accession period of intensive preparation (2001-2003) and
- the period following our EU accession (2005-2007).

I have performed analysis of the export and import situation in relation with three country groups, because the system of foreign trade conditions of our country has undergone different changes basically in **these three categories**:

- EU-15, the old EU Member States,
- EU-9, the group of countries accessing the EU together with Hungary, and the

- extra-EU-25, that is, third countries.

Following the overall analysis of the foreign trade of the selected sectoral products, **three pairs of indices** were generated:

- The average export and import turnover of the years from 2005 to 2007 and the change of the turnover compared to the average data of the years 2001-2003.
- The share of our export and import in the target markets respectively in the supplier country groups' total imports and exports, and the change of the same data compared to the average data of the years 2001-2003.
- The foreign trade balance of the export and import products in the average of the years between 2005 and 2007 and the changes of such balances to the average of the years from 2001 to 2003.

The first pair of indicators is intended to present the importance of the product concerned within our own foreign trade and the change of such importance in consequence of the accession. The second pair serves for showing the products' importance in the imports and exports of the target respectively supplier countries, and the increase or decrease of such importance, while the third index pair helped in examining the contribution of the selected fruit and vegetable products to our foreign trade balance. The limits of the categories were first established through my expert estimation with the help of plotting; however I evaluated the results to be not sufficiently convincing. Therefore, I have performed cluster analysis on the indicator pairs of the most important vegetable and fruit products, describing and scoring thereafter the types thus conceived.

I have performed several cluster analysis methods and I have selected from these procedures the k-means clustering for presenting the results being nearest to my original work hypothesis and easy to explain in my view. The most important difference between hierarchical and non-hierarchical classification methods consist in the feature that if two objects are once categorised in the same group, they will remain together in the future, while in the case of non-hierarchical methods they may be later ranked in different categories. With the k-means method, the objects may be ranked in k different clusters [SZELÉNYI, 2002].

The groups of the products generated through cluster analysis have been allocated with scores from 0 to 100. Aggregating the scores of the three indicator pairs, the products may attain up to 300 scores by country groups, that is, 900 in total. Thus I have generated a performance index being able in my hope to well represent the foreign trade performance of the selected fruit and vegetable products and its change since the EU accession. I considered it important to **formulate an index score** because with its help the presentation of the products' performance could be achieved through unequivocal ranking and grouping.

3. Results

This Section is constituted of three subsections; the first two of them present the summary results of my study regarding our export and import performance. In the third subsection I have summed up my answers to my anticipated work hypotheses conceived on the basis of my thesis.

3.1. Summary of the performance indicators: export position of the selected vegetable and fruit products

Figure 1 recapitulates the **aggregate export performance of the selected vegetable and fruit products broken down to target markets**. In the order established on the basis of the aggregate scores, **the first five products include exclusively processed (frozen and canned) goods** and a single fruit-based product, sour cherry preserve, beyond two field vegetables (green peas and eating corn). The best performing fresh product is the asparagus, occupying the sixth place, followed by fresh sour cherries on the eleventh place; the other **fresh products are placed in majority in the lowest third**, meaning that their export performance following accession may be ranked in the disadvantageous category. If considering also the breakdown by target markets, the five best performing products exported to the EU-15 countries do not include green peas, but include other frozen fruits and fresh horse-radish. As regards the countries accessing together with Hungary, the most important products include fresh asparagus instead of sour cherry preserve, while in the case of third countries, at the leading places the frozen products are replaced by vegetable mixes without vinegar added and by other dried vegetables.

I wished to generate groups also by taking into account simultaneously the scores given in respect of all three foreign trade indicators, and I elected again the cluster analysis for this purpose. Figure 2 includes the results of the **cluster calculations performed on the total scores for the three performance indicators** of the selected export fruit and vegetable products.

The clusters categorise the selected fruit and vegetable products on the basis of their actual export performance and of the changes occurred following the accession. In the aggregate, the first and fourth clusters include equally products with average performance, but, based on the structure of the indicators, the first one received the denomination “weak product on small market”, while the fourth is designated as “medium product in big competition”. The second cluster is that of products with export performance being already unimportant if broken down to target markets. Finally, the third group includes the vegetable and fruit products that perform in export unequivocally as winners, champions.

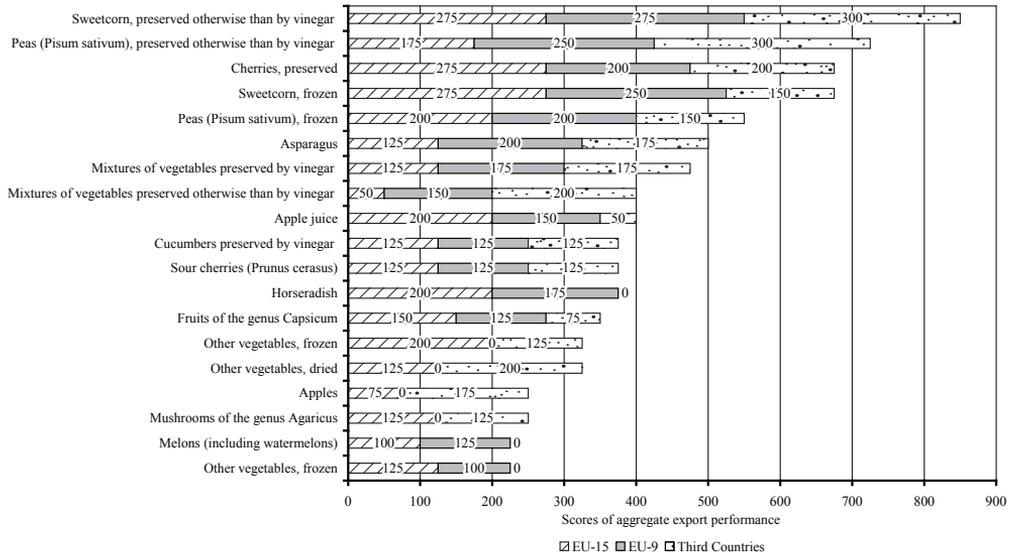


Figure 1
Aggregate export performance of the selected vegetable and fruit products following the accession, broken down to target markets
 Source: Own calculation

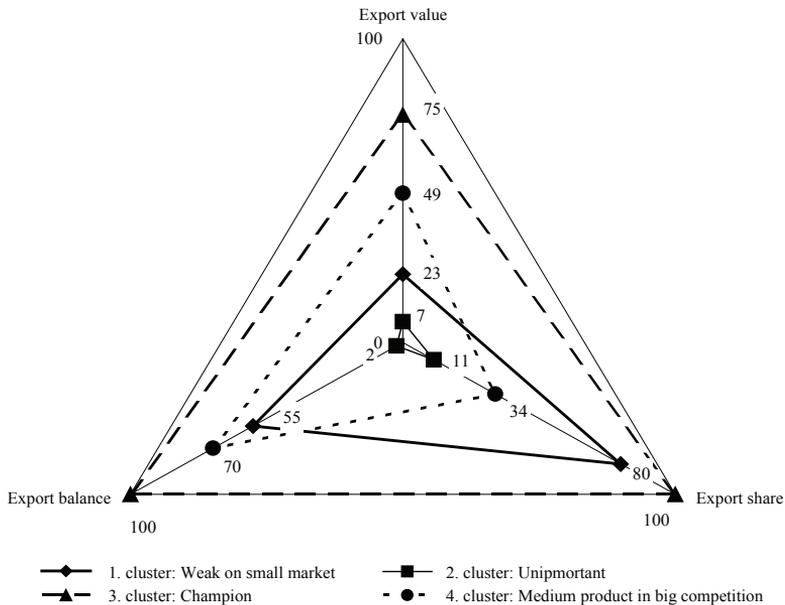


Figure 2
Mean values of the secondary clusters generated on the basis of the export indicators' scores
 Source: Own calculation

In target market breakdown, from among the selected fruit and vegetable products exported to the EU-15 countries, one qualified as weak product on small market, three are champions, merely two are unimportant and the majority (13) are average products in big competition. Also in the case of the products exported to the target markets of the countries accessing together with us, most products belonged to the category of average products in big competition (7), the ratio of champion products was equal with that of the EU-15, while the share of the weak products on small markets (5) was higher and that of unimportant products lower. In the case of third countries, again the average product in big competition was the most numerous category (8), followed by the unimportant products (5), weak products on small markets (4) and then by the products with champion performance.

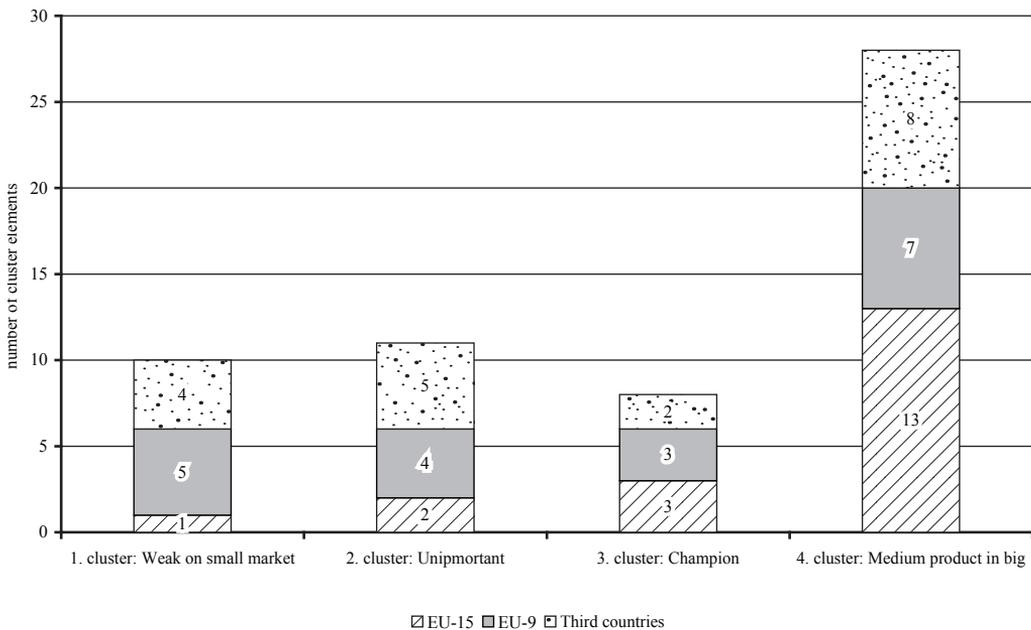


Figure 3
Element numbers in the export clusters by target market breakdown

Source: Own calculation

If examining from the **cluster side**, the performance of the majority of the selected fruit and vegetable products in export belongs to the category of **average products in big competition**, as the following products (28) were ranked into the fourth cluster:

- Exports to the EU-15 Member States: fresh horse-radish, fresh asparagus, fresh agaricus mushrooms, fresh sweet peppers, other frozen vegetables, other dried vegetables, fresh water melon, fresh sour cherries, other frozen fruits, pickling cucumbers, other vegetables prepared with vinegar, other apple juice.

- Exports to the EU-I countries: fresh horse-radish, fresh sweet peppers, fresh water melon, pickling cucumbers, other vegetables prepared with vinegar, vegetable mix without vinegar added, other apple juice.
- Exports to third countries: frozen peas, frozen eating corn, other dried vegetables, other frozen fruits, pickling cucumbers, other vegetables prepared with vinegar, vegetable mix without vinegar added, cherry and sour cherry preserve.

The second more numerous category is that of **unimportant products**, including 11 thereof, most of them in the exports to third countries:

- Exports to the EU-15 Member States: fresh apples, other vegetable mix preserve.
- Exports to the EU-9 countries: fresh agaricus mushrooms, other dried vegetables, other fresh apples, other frozen fruits.
- Exports to third countries: fresh horse-radish, fresh sweet peppers, other frozen vegetables, fresh water melons, other apple juice.

The number of products belonging to the first cluster described as **weak product on small market** was 10, most of them in the exports directed to third countries:

- Exports to the EU-15 Member states: peas without vinegar added.
- Exports to the EU-9 countries: fresh asparagus, frozen peas, other frozen vegetables, fresh sour cherries, cherry and sour cherry preserve.
- Exports to third countries: fresh asparagus, fresh agaricus mushrooms, other fresh apples, fresh sour cherry.

Last but not least, the third cluster of **champion products** was the smallest, including 9 elements; its target market division being fully balanced, 3 products each were found in each relations in this most favourable group:

- Exports to the EU-15 Member States: eating corn canned and frozen, cherry and sour cherry preserve.
- Exports to the EU-9 countries:
- Exports to third countries: eating corn canned and frozen, canned green peas.

Table 2

Characteristics of tariff level changes of the export products ranked in the secondary cluster following the EU accession

Cluster 1		Cluster 2		Cluster 3		Cluster 4	
average	-15.86	average	-10.43	average	-2.69	average	-5.00
min	-71.30	min	-124.00	min	-15.00	min	-53.00
max	7.00	max	81.00	max	17.50	max	25.00

Source: Own calculation

When comparing the **changes of export performance and of tariff levels** following our EU accession, I have received the results included in Table 2. An interesting picture resulted on the basis of the average, minimum and maximum values of the tariff level changes relating to the products belonging to each of the export performance clusters:

- Elements belonging to the first cluster, that is, **weak products on small market** have experienced the largest market opening (-16%) and also the smallest value of the maximum tariff level increase was found in this group, implying that the degree of market access difficulties of the products facing increasing customs protection were the smallest in this group.
- The **most extreme tariff changes are found in cluster 2, the group of unimportant products** that experienced both the highest decrease and increase. The average market opening is the second highest in this group, though this did not result in sectoral performance increase connected with the EU accession, due to the low turnover of the products.
- The average and minimum values of the tariff level changes were lowest in the 3rd category of the **champion products** from among the four clusters, meaning that the **best performing products were not those experiencing the highest market opening** but just the contrary. This seems to be in controversy with my own hypothesis, may be however explained by the fact that we had tried to dismantle the tariff-like obstacles from the way of our best performing export products already prior to the accession by the help of the EU and CEFTA agreements.
- The **tariff level changes of the average products in big competition**, that is, in the 4th cluster, showed **mean values in comparison with the other clusters**, with 5% average decrease of the customs charges; the most considerable decrease constituted in halving the tariff, while the highest increase was 25%.

3.2. Summary of the performance indicators: import position of the selected vegetable and fruit products

Figure 4 summarises the **import performance of the selected fruit and vegetable products broken down by supplier country groups** on the basis of the total scores allocated for the three foreign trade indicators.

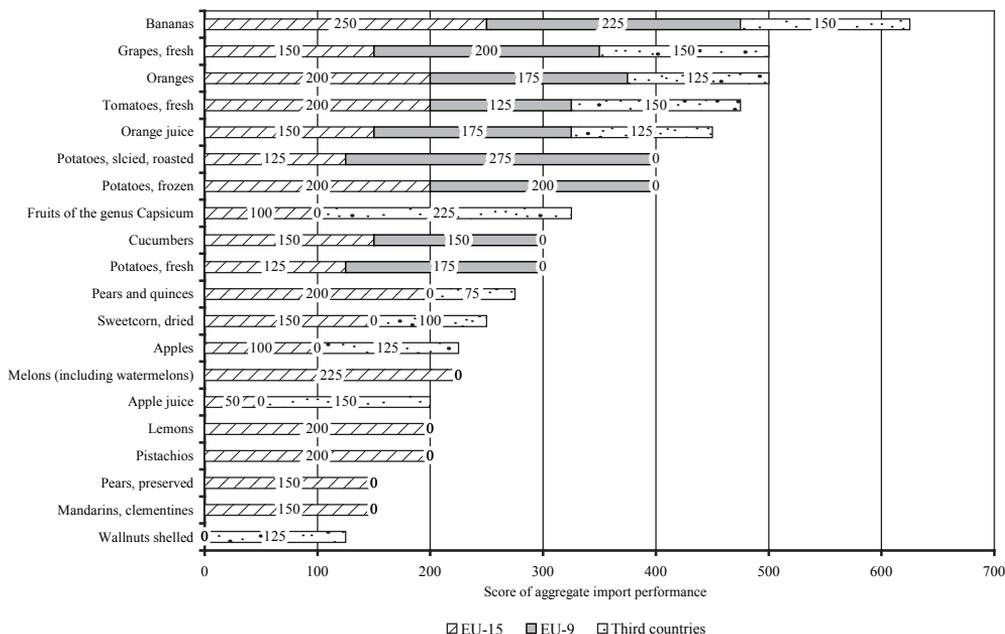


Figure 4
Aggregate import performance of the selected fruit and vegetable products following the EU accession, broken down by country groups

Source: Own calculation

Contrary to the exports, **four fresh products** – banana, table grape, orange and tomato – are found **among the first five best performing products** on the basis of the total scores and **only one processed** – orange juice. It is a premonitory sign that beyond tropical fruits not growing in our country, also a domestic vegetable – tomato – is to be found among the best performing import products. An other important difference against export results consists in the fact that **majority of the products** under study **derives from considerably lesser suppliers**; thus the lower level of the total scores is mainly due to the fact that with the exception of the most important five products, our imports principally derive from a single – the EU-15 in most cases – or perhaps from two groups of countries of origin.

When taking into account also the breakdown to target markets, the order of scores of our import products from the EU-15 countries largely differs from that of the other two groups of countries; only bananas have identical position, other-

wise water melons, pistachios, lemons and pears are to be found among the five best performers. In relation of the countries accessing the EU together with Hungary already two products – bananas and table grapes – have identical position, but three potato products (fresh, boiled and fried) are the best performers. Also in the case of third countries, table grapes and bananas occupy the leading places in the list, followed by fresh peppers, tomatoes and other apple juice. In breakdown by country of origin it comes clear even more blatantly that **traditional Hungarian domestic and export products are to be found among import products with improving performance indicators** (deriving from the EU-15 countries: water melons, from third countries: peppers, other apple juice, tomatoes).

Figure 5 includes the results of the aggregate performance indicator calculations in respect of the **selected imported fruit and vegetable products**.

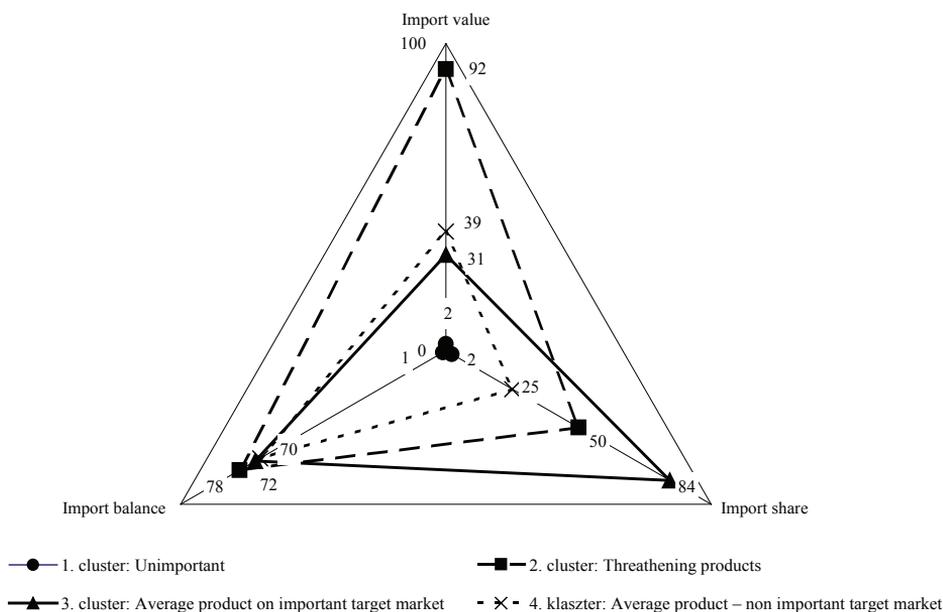


Figure 5
Mean values of the secondary clusters generated on the basis of the import indicators' scores

Source: Own calculation

The clusters categorise the selected fruit and vegetable products on the basis of their actual import performance and of the changes occurred in consequence of the EU accession. Based on the average scores, the third and fourth clusters include equally products of medium performance, the only remarkable difference existing in the shares. Therefore, I have designated the performance of the third cluster's products as "average product on important target market", while the fourth cluster received the name of "average product – non important target market". The second cluster includes the products constituting threat for the domestic

market, that is, the import champion products. The first cluster is the group of unimportant import fruit and vegetable products, that is, of the products having no importance in our imports if broken down by countries of origin.

If examined in **target market breakdown**, majority of the selected fruit and vegetable products deriving from the EU-15 countries were of average (1+10 from 20) import performance, 7 of them constituting threat and only 2 of unimportant import performance (Figure 6). As regards products from the countries accessing the EU together with Hungary, already the weight of unimportant products was determinative (11), followed by the mean performing products (7+1) and finally by the threatening products (1). Also in the case of the third countries, the group of unimportant products was the largest (10), with nearly identical number of fruit and vegetable products included in the group of average import performance (9) and only one belonging to the group of threatening products.

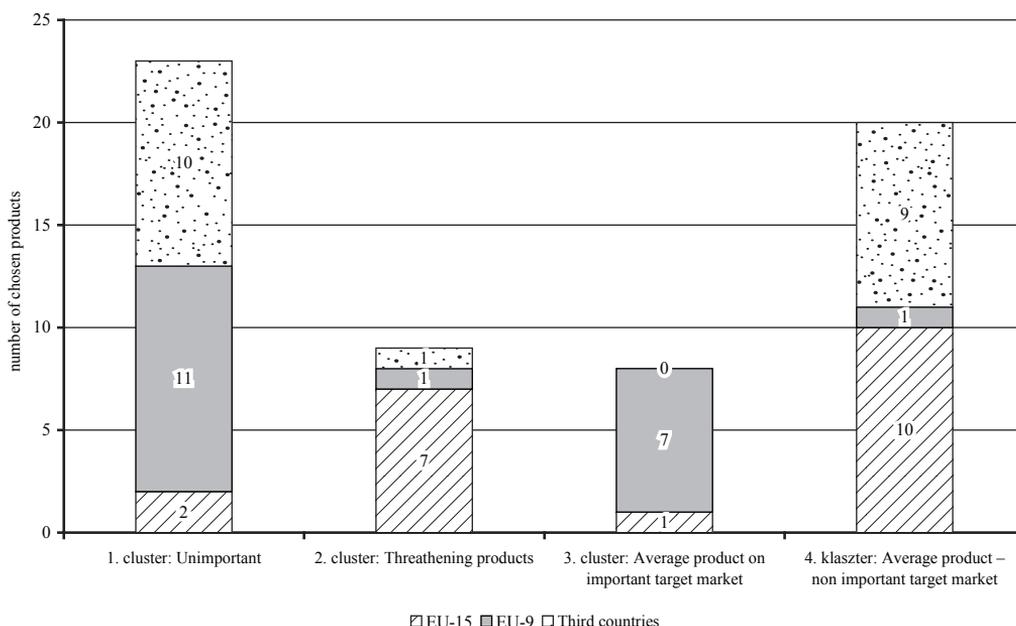


Figure 6
Element number of import clusters in the target market breakdown

Source: Own calculation

If examining from the **cluster side**, the majority of the selected fruit and vegetable products in import belongs to the category with average performance in the third or fourth cluster. From among the products with **average performance**, those for which **Hungary is an important target market** are ranked in the third cluster, no such products derive from third countries:

- Imports from the EU-15 Member States: pistachios.
- Imports from the EU-9 countries: fresh potatoes, fresh cucumbers, other bananas, fresh sweet orange, fresh table grapes, boiled potatoes, frozen potatoes, other orange juice.

From among the products with **average import performance**, those deriving from large suppliers, for which Hungary is **not an important target market**, were ranked into the fourth cluster:

- Imports from the EU-15 Member States: fresh potatoes, fresh cucumbers, fresh pepper, dried eating corn hybrid seeds, fresh clementines, fresh table grapes, other fresh apples, sliced and fried potatoes, peach preserve, other orange juice.
- Imports from the EU-9 countries: fresh tomatoes.
- Imports from third countries: fresh tomatoes, dried eating corn hybrid seeds, nuts without shell, other bananas, fresh sweet orange, fresh table grapes, other fresh apples, other orange juice, other apple juice.

The second most numerous cluster is the first cluster, that of **unimportant products**, including 23 elements, with nearly identical share of the EU-9 and third countries:

- Imports from the EU-15 Member States: nuts without shell, other apple juice.
- Imports from the EU-I countries: fresh peppers, dried eating corn hybrid seeds, nuts without shell, pistachios, fresh clementines, fresh water melon, other fresh apples, fresh pears, fresh or dried lemon, peach preserve, other apple juice.
- Imports from the third countries: fresh potatoes, fresh cucumbers, pistachios, fresh clementines, fresh water melon, fresh pears, fresh lemon, boiled and frozen potatoes, sliced and fried potatoes, peach preserve.

Further 9 elements were ranked in the second cluster, in the threatening category, the overwhelming majority of them deriving from the EU-15 Member States:

- Imports from the EU-15 Member States: fresh tomatoes, other fresh bananas, fresh sweet orange, fresh water melon, fresh pears, fresh or dried lemon, boiled and frozen potatoes.
- Imports from the EU-9 countries: sliced and fried potatoes.
- Imports from third countries: fresh pepper.

Table 3

Characteristics of tariff level changes of the import products ranked in the secondary cluster following the EU accession

Cluster 1		Cluster 2		Cluster 3		Cluster 4	
average	1.18	average	-4.87	average	-3.75	average	1.10
min	-31.00	min	-23.80	min	-20.00	min	-55.60
max	68.80	max	0.00	max	0.00	max	163.80

Source: Own calculation

By comparing the import performance and tariff level changes following our EU accession, I have received the results included in Table 3. According to such results, the characteristics of tariff changes in the clusters containing, and those not containing or containing only a small portion of products deriving from the EU-25 countries are well separated:

- Thus cluster 4, including products with average performance from non-important target markets and cluster 1, including unimportant products, present a **similar pattern**, in the same manner as clusters 2 – threatening products – and cluster 3 – average performance products of important target-markets.
- A slight tariff level increase occurred **in clusters 1 and 4** in the average, and the extent of maximum tariff increase is remarkable. However, these were not the products representing the really serious import pressure, because they are either unimportant or Hungary does not count as an outstanding partner for the suppliers.
- However, among reasons of the considerable increase of import volume, the statement may be cited, according to which customs protection in the case of products threatening the internal market and those important for the supplier countries – that is, **fruits and vegetables belonging to the second and third cluster** – was practically eliminated, as these products derive in majority from the EU-15 countries in the case of the second, and from the EU-9 countries in the case of the third cluster.

3.3. Checking hypotheses

1. The examination of the hypotheses established **prior to the foreign trade volume assessment of the fruit and vegetable sector** has brought the following results:
 - a. My concept, according to which the EU accession has more influenced the product and supplier structure in the case of our imports than in our exports, has been roughly confirmed.
 - b. Though there was a considerable increase following the accession, my hypothesis stating that the foreign trade volume changes had been more

important after the accession than following the entry into force of the liberalisation agreements, could not be confirmed, as year 2002 proved to be the real turning point both in imports and exports.

- c. My supposition, according to which the EU-15 Member States as our foreign trade partners became considerably stronger and even in respect of their shares following the accession, and that mainly to the detriment of the third countries, has been proved only in part, because, in fact, a similar change of turnover really occurred in respect of the imports, however a process quite to the contrary could be observed in our exports.
2. According to my assumption formed in connection with **the pre-accession stage of the agricultural trade liberalisation process between the EU and Hungary**, the development of the turnover had not followed or followed only in part the EU tariff barrier decreases' asymmetry favouring our country, because the EU, as a group of countries with stronger economy, could make better use of the lower advantages. Detailed analysis of the turnover has confirmed my expectation both in general meaning and in respect of the vegetable and fruit sector. What more, it was a premonitory sign that even our non-favoured imports had considerably increased, implying that the EU suppliers were able to augment their supplies to the domestic agricultural market already prior to the accession, without any preferences.
 3. The examination of the hypotheses established on the basis of the **comparison of the remaining EU and Hungarian tariff-barriers prior to the accession**, has lead to the following results:
 - a. My assumption, according to which the extent of tariff-barriers remained prior to the accession between the EU and Hungary were higher in the average in Hungary, while the highest tariff levels were to be found in the EU concerning certain products, was not confirmed, because the remaining customs protection prior to the accession was higher in the case of all assessed products, bearing importance for the total turnover was always higher in the EU-15 countries towards Hungary than our protection.
 - b. My expectation regarding the general decrease of our customs protection adopted in the EU towards third countries was confirmed only in part, because the actual tariff-barriers in the average did not diminish, even though not increasing either to a considerable extent, except for the MFN-level without preferences. On the other part, I have supposed correctly that a more serious protection increase occurred in the case of some product groups, especially in certain sensible products.
 - c. It has been fully confirmed that the fruit and vegetable sector belonged to the sectors with the highest remaining tariff protection, implying that the accession resulted in a customs protection decrease exceeding even the

last liberalisation agreement prior to the accession. This statement can be completed with the establishment that, despite thereof, the turning-point of the turnover changes occurred already in 2002.

4. When carrying out the analysis of the adopted system's effects, that is, the **analysis of the accession's effects on the basis of performance indicators**, I made two assumptions:
 - a. It has been confirmed that **the products of our exports and imports could be categorised in a well separable manner** and that roughly four groups could be identified equally at both turnover directions and at the three indicator pairs, as well as when aggregating them. However, the characteristics of the single clusters proved to be different than I have expected:
 - The group of champion and threatening products has shaped in compliance with the hypothesis.
 - Instead of the declining products – say with small and decreasing performance – the unimportant products have formed a well separable category in both turnover directions, covering the products though reaching in the aggregate foreign trade turnover of 5 million Dollars, remaining however below the 1 million Dollar value if broken down to target markets.
 - Also the differentiation of matured and emerging products could not be confirmed, these two intermediary categories each were renamed as follows: in the case of exports, weak products on small markets and average products in big competition, while in the imports, average products as on important target market and average products as on non-important target market.
 - b. My hypothesis, supposing that a positive correlation existed between the **extent of the customs protection's change at the time of accession of the export and import products and their getting into determined performance categories**, because in the case of exports, right the contrary trend, a negative correlation could be detected; in the case of imports, however, the performance indicators of those products have in fact improved, where the customs protection had decreased or had been practically eliminated.

4. Conclusions and proposals

The world's **vegetable and fruit trade has transformed**, fundamental changes occurred, all of them enhancing the extension of the international turnover. Considerable technical development occurred in the field of storage life and of distribution, the system of retail trade has concentrated and became international, the consumers' requirements concerning the products' appearance and availability have changed and finally, but as the most important factor for my analysis, the trade liberalisation agreements (WTO and RTAs) have diminished the tariff and non-tariff barriers of the international turnover. The circumstances leading to the increase of the foreign trade of vegetable and fruit products promised both opportunities and threats for the domestic horticultural sector during the recent decade.

We have expected export expansion possibility from our EU accession, as the market became common not only with the 15 old Member States of the EU but also with the markets of the nine countries accessing the EU together with Hungary. The premonitory signs of the turnover tendencies were however not favourable; in compliance with the economic theories, the EU Member States with stronger economic force could realise higher increase in our imports than our export extension during the association period, considered as the ante-chamber of the EU. In the case of the CEFTA Member States accessing the EU together with us, we could rightfully expect favourable changes, as our foreign trade balance continued to improve in consequence of the trade liberalisation. In addition, compared to the other basic agricultural products, the fruit and vegetable sector of the EU-15 Member States and of the EU-9 newly accessing countries enjoyed a relatively high customs protection remained prior to the accession; therefore we could hope in a well sensible market opening. In respect of the exports, in the case of the EU-15 Member States, our presages counselling cautious optimism have been confirmed, contrary to our positive expectation in the case of the countries accessing at the same time. Though our exports to both the EU-15 and EU-9 countries have increased, but less than expected, while surprisingly the growth of our export to third countries was considerable following the accession.

In respect of the **import changes**, the radical globalisation of the trade of fresh fruits and vegetables could prove to be the **most important threat** of the last decade, because the consumers' requirement to eliminate seasonality seemed to grant remarkable market position for the producers of the southern hemisphere. But the EU accession resulted in a considerable growth in the imports of products originating in the EU-15 and EU-9 Member States. In the case of the EU-9 countries, having a low initial turnover, the leap was expectable, however due to the high initial turnover of the EU-15 countries and following the almost drastic growth of the imports during the preparatory period, such an important change

could not be really expected. Beyond the trade generating effect of the single market integration, in our import also trade diversion could be strongly sensed. And this was further enhanced by the so-called “Rotterdam-effect”, implying that in consequence of our country’s isolation from sea ports and due to the mediatory trade becoming immeasurable, a remarkable increase of the imports from the EU Member States occurred also in the case of tropical products not grown within the EU.

Analysing now the performance of our export following the accession, it could be established that the most products presented average export performance equally to the EU-15, the EU-9 and to the third countries, although in the case of the latter two target market groups the number of products qualified as weak or unimportant resulted much higher. In product structure approach we can establish that the first five products include exclusively processed (frozen and canned) goods and beyond two field vegetables (green peas and eating corn) only a single fruit-based product, sour cherry preserve, beyond two field vegetables (green peas and eating corn). The fresh products are placed in majority in the lowest third, meaning that their export performance following accession may be ranked in the disadvantageous category. Analysing the reasons of the changes, and among them the elimination of the tariff barriers through trade liberalisation, it can be established that the best performing products were not those experiencing the highest market opening but just the contrary. This seems to be in controversy with my own hypothesis, may be however explained by the fact that we had tried to dismantle the tariff-like obstacles from the way of our best performing export products already prior to the accession by the help of the EU and CEFTA agreements. The highest average market opening could be experienced by the products with weak performance on small markets, because the smallest value of the maximum tariff level increase was found in this group, that is, the market access difficulties of the products facing increasing customs protection were the smallest in this group. The tariff level changes of the products with average performance were also of medium importance: the customs charges decreased by 5% in the averaged, while the highest decrease implied halving of the tariff and the highest increase amounted to 25%.

Analysing the post-accession performance of our imports, it can be established that majority of the selected products in the EU-15 countries showed average performance, but there were a many of threatening ones, too. In the case of the countries accessing together with Hungary and the third countries already the ratio of the unimportant products was determining, followed by those with average performance, while the number of threatening products was trifle in both relations. Contrary to the exports, four fresh products are found among the first five best performing products and only one processed – orange juice. It is a

premonitory sign that beyond tropical fruits not growing in our country, also a domestic vegetable – tomato – is to be found among the best performing import products. An other important difference against export results consists in the fact that majority of the products under study derives from considerably lesser suppliers even if their number is increasing; with the exception of the most important five products, our imports principally derive from a single – the EU-15 in most cases – or perhaps from two groups of countries of origin, Comparing the import performance and the tariff level changes, we find that a slight tariff level increase occurred in clusters 1 and 4 in the average, however, these were not the products representing the really serious import pressure. In the case of the second and third clusters including products with strong import performance, the customs protection was practically eliminated, because these products derive in majority from the EU-15 countries in the case of the second, and from the EU-9 countries in the case of the third cluster.

On the basis of the conclusions drawn from my research, I make the following **proposals**:

- The **age of simple statements in the trade policy field is over**; therefore assessment of the consequences of the tariff level changes has to be done always in the deepest possible breakdown and on bilateral basis. The average tariff rates aggregating products or countries cover such important structural and market protection differences that render them unsuitable for modelling consequences of the future trade liberalisation scenarios.
- The tariff level changes occurred in consequence of our EU membership in themselves do not present remarkable correlation with the evolvement of the turnover changes, however, **market opening in diversion from competitors had already caused market loss** prior to the EU accession. Therefore, during liberalisation impact analyses, also the tariff level changes compared to those of the competitors have to be evaluated and, beyond tariff level differences, also the available foreign trade stock and the differences in the overall level of economic development are to be determined.
- I wish to call the attention of the decision-makers in the sector that some **fruit and vegetable products traditionally grown in Hungary** were also found as exposed to threats on the basis of their foreign trade performance. On these products special emphasis should be laid when determining the sector's strategy and the trade policy.
- Finally, the better export performance of the processed products supports my long-established opinion that the **harmonised development of the processing industries directly connected with the agricultural production** has to (should) be an important element of the sectoral strategy.

5. New and novel scientific findings

In each Section of my thesis, I have strived to apply new or newish methods or approaches. The part of my study including my own research results consists of four subsections: overall foreign trade turnover analysis; presentation of the foreign trade consequences of the agricultural trade liberalisation process between Hungary and the EU; description of the tariff barriers remained until the accession; and finally the evaluation of the foreign trade performance changing in consequence of the accession.

1. Newish methodology element of the **first Section, including turnover** analysis, consists in strictly maintaining the already mentioned tripartite system, implying presentation of the three periods by using the average of three years broken down to three target markets respectively supplier countries
2. The apparently simple task of the third Section, including the assessment of the tariff barriers remained in force until the accession – determination of the customs protection charging our imports and exports prior to the accession – proved to be the greatest challenge of the study. There are to fundamental problems when calculating the real customs charges: the incommensurability of the specific and compound tariffs with the ad valorem tariffs and the preferential tariffs granted by the RTAs. Therefore, the calculation may be considered as a new achievement, in which, beyond converting non-ad valorem tariffs into ad valorem ones, I have also taken into account the preferences by target markets and supplier countries, establishing even their values weighted with turnover. Then the resulting tariff levels were aggregated by sectors and by country groups and made comparable.
3. Finally, I have set the goal of assessing the foreign trade performance of the selected fruit and vegetable products, changing after our EU accession. For this sake, I have calculated three pairs of indicators by each turnover direction. The first pair of indices served to present the importance of a given product in our foreign trade and the change thereof following the accession. The second pair of indicators illustrates the importance of the products on the target market or in the country of origin, and its increase or decrease. The third one finally served for assessing the contribution of the selected fruit and vegetable products to the foreign trade balance. Four groups were formed at all three pairs of indicators through the application of **marketing type cluster analysis**, this were given a name and allocated a score.
4. Through aggregating the scores allocated to the three pairs of indices I was able to generate a **performance indicator** well presenting in my hope the foreign trade performance of the selected products and its changes since the

EU accession. By doing this, I have expanded the possibilities of the export competitiveness analysis made by use of the traditional indicators based on comparative advantages by a performance measurement of different approach that may serve even for comparative analysis in the future.

6. Summary

The subject's actuality derives from the fact that our **EU accession** was an important milestone of our country's history and this period promised to be especially full of expectations and fears for our foreign trade. The accession was preceded by a long period of negotiations and preparation; the Member State requirements did not come out of nowhere, all the same the accession brought with some surprises. We are slowly recovering from the first shock and the already available statistics of three entire years grant possibility for comprehensive impact analyses. This is a unique and unrepeatable occasion for evaluating the consequences of a fundamental trade policy change. All this is not a self-serving search for justification but may be a tool of preparation for the changes, even if being of lesser importance, expectable in the future that may shape the EU's external relationships, among them for example the extension of Regional Trade Agreements or the negotiation series of the WTO that would lesser or sooner come to a conclusion for sure.

The selection of the fruit and vegetable sector is advantageous from several aspects, but, due to the same reasons, it also renders difficult the situation of the researcher. First, this is one of the sectors within the agriculture granting the highest export incomes, continuously maintaining its positive foreign trade balance since the change of regime, despite of all difficulties; consequently it is important. Secondly, due to its heterogeneous product structure, it offers a comprehensive picture of the situation of the entire food economy, from the fully mechanised field production, through forcing that demands plenty of manual work, through the refrigerating and canning industry up to the distribution.

The structure of the thesis is determined by a tripartite system both in its part of the literature overview and in that of research: in the first period, from 1998 and 2000 I have examined the starts of preparation, in the second stage, covering the period from 2001 to 2003 the intensive approach and the differences still remained prior to the accession, while in the third period the years from 2005 to 2007, that is, the effect of the accession were assessed. I had the feeling that time delimitation and granting of perspicuity constituted important assistance for revealing the interrelations hidden behind the huge quantity of data and information. From among the **methodology tools** I consider most important the tariff equivalent calculation in the examination of the pre-accession trade policy system of conditions and the cluster analysis and categorisation performed on the products evaluated by indicators describing the changes of the foreign trade performance in the impact analysis of the accession.

On the basis of the domestic and international trade literature, I consider the **theoretical achievements of the trade liberalisation processes occurred between the EU and Hungary from the change of regime to the Millenary** outstanding in

their importance but considerably more modest as regards their preferences enhancing trade. For our economy in transition the contact with the new and more stable western markets had outstanding importance, but the extent and the mode of the preferences granted, especially prior to the Uruguay Round, did not bring revolutionary trade liberalisation.

The **agreement entering into force from the second half of 2000** implied already more important changes. It granted preferences specified in lists for the agricultural trade between the EU and Hungary: the four-zero list, though bound by quotas, simulated our accession, that means, neither export supports nor customs have distorted the market access; in the case of the two-zero products it introduced unrestricted customs relief, while maintaining the possibility of export supports; tariff decrease and tariff quota increase were applied at the traditional products. **Positive results** of the agreement implied that through elimination of the export subsidies Hungary has waived in fact only a theoretical and short term possibility, as export subsidies could be granted anyway only in a very restricted scope of products, due to our WTO covenants. In addition, we have attained transformation of the quota management that was previously of allowance character – divided equally among all applicants – while in the new system the principle of chronology was applied. Furthermore, by contracting some of the previous quotas, a single quota and a single tariff level became applicable to each product groups, thus simplifying considerably the administration and improving the level of utilisation of the quotas. Last but not least, beyond offering rational and easy to calculate economic advantages, the customs relief is more favourable also in “trade-psychological” and administrative aspects. The **negative results** included that our country concluded the negotiations prior to all other accessing countries, consequently such countries were able to reach more favourable agreements in respect of some products, relying upon our achievements. Unfortunately, the positions thus acquired concerned in a sensible manner exactly the fruit and vegetable sector, because our country received only tariff preferences, while Poland, Yugoslavia and Macedonia unlimited preferences on fresh and processed fruit and vegetable products. Now Poland any Yugoslavia counted for competitors of the Hungarian exports in the case of fresh and processed fruit and vegetable products.

In compliance with its objectives and considering its actual results, the **final trade liberalisation agreement prior to the accession concerning agricultural and processed products, entered into force as of 2002**, eliminated our trade political disadvantages emerged from the previous agreement. Unfortunately, in the case of some products (sour cherries, agaricus mushrooms) and against some countries (Poland) our market loss became already inevitable by that time. In addition it had the important merit of attaining remarkable market opening

under the four-zero agreement in respect of cereals (wheat and corn), constituting perhaps the most important export products for our country. Regarding product coverage, the asymmetry to the favour of our country remained, however, except for some sensible products, in majority of the sectors it closely approached the post-accession customs relief conditions in its effects.

Upon analysing the turnover data it can be established that the opportunities deriving from our agricultural trade liberalisation agreement concluded with the EU, especially in the first period, prior to 2002, were remarkably better utilised by the importers purchasing in the EU than by our exporters making supplies to the EU. This complies with the previous experiences, also making evident that trade expansion occurs in an asymmetric manner; the initial advantage of the old Member States over the newly accessing, economically less developed countries could be considered almost granted and disadvantages were compensated only gradually even in the case of countries with competitive agriculture like Spain. It was an admonitory sign that in production year 2003/2004, following the fall back of the previous production year, an increase in our non-favoured imports could be observed, implying that the EU exporters were able to increase their supplies to the Hungarian food products market even without preferences, prior to the accession.

Though in respect of the EU-15 Member States and especially concerning exports we have approached the status of customs relief already prior to the accession, our membership status resulted in several changes upon adoption of the foreign trade policy system of conditions. A completely different system of tariff protection against third countries was adopted. When **examining the differences of the market protection without preferences (MFN) of the EU and of Hungary**, it can be established that, though one would not expect it on the basis of the simple tariff average, the Hungarian import protection had a considerably more transparent system; there were no unpleasant and no specific/intricate tariffs, the deviation of tariffs was smaller and there were less tariff lines including tariff peaks. The value of the highest ad valorem tariff indicated a higher import protection in our country, but taking into account also the specific tariffs expressed in percents, the tariff maximum was higher in the EU, too. When comparing the tariffs of the EU and of Hungary without preferences – of year 2002 – of the three product categories constituting the foreign trade turnover of the fruit and vegetable sector, a similar pattern results than in the case of the import protection of the entire food economy.

From among the **preferential market access possibilities**, I have first examined the preferential tariffs applicable at obligatorily open quotas following the **GATT's Uruguay Round**. Hungary did not excel in **utilising these quotas** prior to the accession, due principally to the following reasons: distortion of the aver-

age calculations, bad basis year, more favourable free trade agreements, and our net exporter position. Taking into account the differences in scale, at a similar rate of quota availability, considerably higher utilisation rates are observed in the EU, to be principally explained by the important importer position, the more attractive market and by the stricter colonial relationship. Following the EU accession, also the system of conditions of the preferential imports under the GATT quotas had changed. The main differences between the systems applied by the EU and our country are to be found in the type of quota allocation; while Hungary applied only the method requiring licensing, the EU applied all approved (applied tariffs, order of arrival and traditional importers) methods.

The next possibility of foreign trade at preferential customs protection consists in the system of **Regional Trade Agreements**. These “special bargains” concluded in increasing number, are theoretically contrary to the GATT/WTO principles, constituted in the basic requirement of making applicable to all members any preferences granted to any of the member countries (MFN – principal of Most Favoured Nation). All the same, the number of Regional Trade Agreements is quickly increasing, supplying a permanent topic of scientific and political discussion, whether they have a foreign trade liberalisation effect on global level or just the contrary impact. Though our participation in RTAs has increased following the accession, and consequently the tariff protection of certain sectors in respect of imports deriving from third countries has been diminished, but the degree of market openness did not considerably grow due to the trade agreements. Also **in the case of our exports it may be stated** that the increasing number of the EU’s trade agreements did not considerably expedited the market access of our products, because hardly remained any agreements of the EU that would grant mutual advantages applicable also to the domestic exporters. What more, three of the ten third countries having biggest importance in our country’s agricultural exports did not conclude any trade liberalisation-oriented agreements with the EU, but this did not imply any change compared to the former conditions, as even our country had no serious system of trade preferences with these three countries (Russia, US and Japan).

Finally I have examined in more details the third market access preferences, the **GSP system** granted for developing countries. The GSP system reflects well the more favourable structure of the trade agreements, because in a well demonstrable manner, developing countries having RTAs with the EU had recourse to the GSP preferences only in a very moderate extent, while those countries, for which only preferences under the GSP were available, presented a remarkably stronger utilisation. The result is not surprising, because the system of the EU was much more intricate than that of Hungary in this case too; both the participating countries and the products were categorised and were granted different allow-

ances according to their “sensitivity”. Thus, the extent of tariff preferences may only be compared at product level, as the extent of decrease depends on the MFN tariffs at the sensible products separated in the EU. In addition, the tariff level of the sensible products was determined with moderate rates of decrease, thus following or accession, though the scope of preferred products and preferred countries extended considerably, however in the average, the extent of tariff decrease became lower.

Two special trade policy instruments of the EU exist in the fruit and vegetable sector; the system of entry prices influenced our sectoral exports prior to the accession, while the operation of the banana regime has transformed our imports following our accession. The **system of entry prices** emerges a number of economic issues; the most important one for our country prior to the accession consisted in the fact that until intensification of the trade liberalisation, the resulting double segmentation (tropical – continental production) caused serious competitive disadvantages against the producers of the southern hemisphere that were able to acquire stable market positions by that time. The regionally discriminative system of quotas of the **banana import regulations** was susceptible to result in a powerful price increase of the bananas in the East-European Member States following the accession, implying also decrease of the consumption and of the imports from non-ACP countries.

Analysing the tariff barriers of market access at product level and evaluating it in sectoral aggregation, we can establish that turnover weighted tariff barriers against our **exports** directed to the EU were high – exceeding 10% – only in the case of dairy products and of the product group of dried and frozen fruits. The elimination of the market protection against our exports to the countries accessing the EU together with us had different effects by countries, however the scope of the sensible, say most protected products was similar to that applied by the old EU Member States. In the case of third countries, generally the MFN, or incidentally the GSP tariffs remained in force. As regards our **customs protection of imports**, contrary to our former MFN tariffs considered to be very high also in international comparison, the actual tariff protection of our imports was extremely low in the period and in respect of the product scope under study, due to the EU trade liberalisation agreement. The average tariff protection of the imports deriving from the EU-9 countries was higher in almost all sectors (with the exception of fresh, frozen and dried vegetables) prior to the accession than that of the imports from the EU. In respect of the imports from third countries the tariff protection without preferences has increased, however the average of the actual customs protection did not change considerably, due to the preferential possibilities (GSP, GATT quotas), though remarkable customs protection increase occurred in the case of some product groups, especially in the case of the sensible products, such as beef, pork and cheese.

Summing up the **lessons from the period elapsed since the EU accession** drawn on the basis of trade literature processing, we may establish that the Hungarian food economy has accumulated considerable problems during the last decade; the retail and foreign trade undergoing a strong globalisation process did not favour the domestic producers and processors. The adaptation was rendered more difficult by the fact that in the meantime also the integration effects of the EU accession made their appearance. The foreign trade advantages were less than expected, especially on the markets of the CEFTA member countries accessing the EU together with Hungary, while the feared import pressure resulted to be even stronger than predicted. The balance of our foreign trade and internal trade results – the narrowing of our competitive edges – is especially painful for the fruit and vegetable sector, because prior to the accession this sector was considered as one of the agricultural branches having the most favourable position.

When evaluating the EU accession on the basis of turnover analysis, it has to be taken into account that the **international trade of the fruit and vegetable products** has considerably expanded due to changing technological and trade political conditions during the last decade. The EU is the most important export supplier and the US is the largest import market, while the traditional axle of trade is of north-south orientation. However, through entry of the Asian and Eastern European regions, the East-West axle also acquired importance within the international trade, because China realised the greatest expansion on the export side, while Russia presented the highest increase of imports. The dynamics of Hungary's fruit and vegetable foreign trade were in line with the international trends, our share however was and remained extremely low (0.5 to 1%) during the period under study. As from the entry into force in 2002 of the second agricultural trade liberalisation agreement, considered to be the antechamber of the accession, the turnover experienced a boom in both directions, however both the dynamics and the steadiness of the development of imports proved to be more powerful; therefore the **foreign trade balance of the sector decreased from 350 million to about 230 million Dollars**. The situation could be evolved even in a more disadvantageous manner, because the balance of the fruit sector turned to be negative steadily and in an increasing manner, but a large and still ever increasing demand for some processed products, mainly those based on field vegetables, served for compensation. The role of the EU is determinative both for our exports and imports; Russia also has outstanding importance, remaining our strong partner even after the accession; in our imports, however, following the accession, the third countries have almost entirely disappeared from the scope of our suppliers, at least in statistical sense.

In the fruit and vegetable foreign trade the **last three years (after our accession) have brought spectacular expansion** also in the case of non-EU member countries: the reasons are manifold, including for example expansion of the

RTAs, concentration of the retail trade, development in distribution, globalisation etc. I have detected an interesting contrasting movement in respect of the importance of the sector assessed: it is low (below 1%) but increasing in the international fruit and vegetable foreign trade, while it is high (above 10%) but decreasing in the entire Hungarian foreign trade. Also in this case, the decrease and increase were remarkable following the accession. A further newish finding consists in the establishment that not only the overall sectoral analysis but also the detailed analyses by products, countries and country groups confirm three unequivocal tendencies: imports have undergone more important changes than exports; the increase started to attain significant level from 2002; and that in general a more considerable foreign trade turnover growth occurred in relation with the EU-15 countries than towards the countries accessing the EU together with Hungary or third countries.

The **analysis of the post-accession performance of our exports** confirms that majority of the products presented medium export performance equally in relation of the EU-15, EU-9 and third countries, but in the case of the latter two target markets, the number of products qualified as weak or unimportant was remarkably higher. If approaching from the side of the product structure, we find exclusively processed (frozen and canned) products among the five best performers, and only one fruit-based product (sour cherry preserve) beyond the two field vegetables (green peas and eating corn). The fresh products are placed in majority in the lowest third, meaning that their export performance following accession may be ranked in the disadvantageous category. Analysing the reasons of the changes, and among them the elimination of the tariff barriers through trade liberalisation, it can be established that the best performing products were not those experiencing the highest market opening but just the contrary. This seems to be in controversy with my own hypothesis, may be however explained by the fact that we had tried to dismantle the tariff-like obstacles from the way of our best performing export products already prior to the accession by the help of the EU and CEFTA agreements. The highest average market opening could be experienced by the products with weak performance on small markets. The tariff level changes of the products with average performance were also of medium importance: the customs charges decreased by 5% in the averaged, while the highest decrease implied halving of the tariff and the highest increase amounted to 25%.

Analysing the post-accession performance of our imports, it can be established that majority of the selected products in the EU-15 countries showed average performance, but there were a many of threatening ones, too. In the case of the countries accessing together with Hungary and the third countries already the ratio of the unimportant products was determining, followed by those with average performance, while the number of threatening products was trifle in

both relations. Contrary to the exports, four fresh products are found among the first five best performing products and only one processed – orange juice. It is a premonitory sign that beyond tropical fruits not growing in our country, also a domestic vegetable – tomato – is to be found among the best performing import products. An other important difference against export results consists in the fact that majority of the products under study derives from considerably lesser suppliers even if their number is increasing. Upon comparing the import performance and tariff level changes occurring in consequence of our EU accession, it can be established that the tariff change features of the clusters including products deriving from the extra-EU third countries and of those not including or including only a few of such products are well differentiated, but no differences can be found by performance categories.

7. Main publications

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8. Curriculum vitae

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Végzettség

1991-1997 University of Horticulture and Food Sciences, Budapest
Horticultural engineer MSc
2003- University of Agricultural Sciences, School of Economics
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Employment

1997- Research Institute of Agricultural Economics (AKI), Budapest
Research fellow
2009-11-02 Research Institute of Agricultural Economics (AKI), Budapest
Head of Department Markets and Trade

Work experience

1997- Twelve years experience in the policy analysis and research
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Main research areas

1997- ongoing

1. Effects of EU accession on the Hungarian agro-food market
2. Effects of WTO agreement on the Hungarian agro-food policy
3. Hungarian food retail trade sector and the situation of food suppliers
4. Hungarian fruit and vegetable sector, especially foreign trade and vertical coordination issues

Languages:

English middle level “C” type exam (proficient user)

German basic level „C” type exam (basic user)

Other personal skills:

Competent with Microsoft Office programs and SPSS