



**AgEcon** SEARCH  
RESEARCH IN AGRICULTURAL & APPLIED ECONOMICS

*The World's Largest Open Access Agricultural & Applied Economics Digital Library*

**This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.**

**Help ensure our sustainability.**

Give to AgEcon Search

AgEcon Search

<http://ageconsearch.umn.edu>

[aesearch@umn.edu](mailto:aesearch@umn.edu)

*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*

# Factors Determining EU-Competitiveness of the Hungarian Agriculture: Trade policy approach

Peter Halmai  
e-mail: halmai@ntt.hu

Andrea Elekes  
e-mail: andraelekes@hotmail.com



**Paper prepared for presentation at the X<sup>th</sup> EAAE Congress  
'Exploring Diversity in the European Agri-Food System',  
Zaragoza (Spain), 28-31 August 2002**

*Copyright 2002 by Peter Halmai and Andrea Elekes. All rights reserved. Readers may  
make verbatim copies of this document for non-commercial purposes by any means,  
provided that this copyright notice appears on all such copies.*

# **FACTORS DETERMINING EU-COMPETITIVENESS OF THE HUNGARIAN AGRICULTURE**

## **Trade policy approach**

**by**

**Prof. Péter Halmai and Andrea Elekes**

Szent István University Management Education Institute. Address: H-1143 Budapest, Ida u. 2.  
Phone: +36 1 462 2066. Fax: +36 1 462 2055. e-mail: [halmai@ntt.hu](mailto:halmai@ntt.hu) or [andreaelekes@hotmail.com](mailto:andreaelekes@hotmail.com)

### **Abstract**

As regards EU accession of Hungary one of the most important questions is how the adaptation of the Common Agricultural Policy (CAP) will affect the competitiveness of the Hungarian agriculture. Competitive effects of CAP can be revealed in several ways (quantitative, comparative analysis, simulations etc.) but the results may differ significantly. That is why it is interesting to compare the results of different methods. This paper concentrates on the competitive effects of changing trade policy by comparing the results of comparative analyses (producer prices, export subsidy systems and import protection) and simulations. The results of the simulation confirm the conclusion that the CAP adaptation will favour basically the cereal production. CAP adaptation will intensify the already existing (competitive) differences between the two large sectors of agriculture (plant and animal products). All of the analyses came to the conclusion that the prospects of arable crops are favourable. Less reassuring are the prospects of animal products. There are apparent efficiency problems, and rising feed costs (due to accession) may further weaken the position of this sector. Without basic structural reforms the sustainability of the sector's competitiveness is questionable.

**Keywords:** EU accession, trade policy, competitiveness

# FACTORS DETERMINING EU-COMPETITIVENESS OF THE HUNGARIAN AGRICULTURE

## Trade policy approach

### 1 Introduction

As regards EU accession of Hungary one of the most important questions is how the adaptation of the Common Agricultural Policy (CAP) will affect the competitiveness of the Hungarian agriculture. After joining the EU the competitive environment will basically change: changing trade policy, changing price relations etc. Comparative advantage of certain products can disappear while other products' competitiveness can improve. It is unavoidable then to analyse the effects of changing factors on competitiveness.

Competitive effects of CAP can be revealed in several ways (quantitative, comparative analysis, simulations etc.) but the results may differ significantly. That is why it is interesting to compare the results of different methods.

The research concentrated on the competitive effects of changing trade policy by applying comparative analyses (producer prices, export subsidy systems and import protection) and model results. Due to limited extent of this paper, here we present only the most important findings of the project.

### 2 Comparative analysis of producer prices

Competitive position of Hungarian agricultural products can easily be evaluated on the basis of relative producer prices. It is important to stress that no long run conclusions can be drawn on the basis of price comparisons, although important tendencies can be identified. Definite agricultural competitiveness can be seen if we compare Hungarian producer prices to EU average producer prices (Table 1). At the same time, there are large differences between producer prices even within the Union, so it is worth doing alternative comparisons: a) Hungarian producer prices relative to prices of potential markets and b) Hungarian producer prices relative to most competitive (lowest) EU prices (Table 2).

**Table 1: Hungarian producer prices, in percentage of EU prices**

	1998	1995	1993
Wheat	56	48	55
Barley	53	56	53
Maize	47	50	57
Sugar beet	50	49	44
Oilseeds	98	88	62
Tomatoes	43	53	59
Apples	52	78	59
Beef	.	57	44
Pig	113	105	88
Poultry	92	86	79
Milk	79	63	61

Source: EUROSTAT, KSH

As Hungarian producer prices are usually lower than EU average prices it is not surprising that the same refer to producer prices of the potential markets. However, efficiency/competitive problems occur if we examine Hungarian producer prices relative to the lowest EU prices. Competitiveness of two traditional Hungarian export products (pig and poultry meat) becomes doubtful in this approach.

The main conclusions of the various price comparisons are the following.

- Hungarian cereal prices are usually lower than EU internal prices. Without duties (due to European Agreement or accession) the sector can preserve its competitive position on former markets (Danube valley, Austria, Northern Italy).
- Producer price of sugar beet is much lower in Hungary than in the EU. At the same time, strict quantity limits can prevent a production boom after accession.
- Producer prices of beef and milk are also significantly lower in Hungary. This can be explained by the fact that these two sectors are highly subsidised in the EU.
- Producer price of pig meat is around or above the EU price. The potential increase in feed (cereal) costs after accession will boost the already existing efficiency problems of the sector. Similar tendencies can be identified in the poultry sector.
- Most of the horticultural products seem to be competitive but comparisons are difficult (quality, seasonality etc.).

**Table 2: Producer prices in Hungary and in the EU, 1997**

	ECU/100 kg						
	Wheat	Barley	Maize	Potatoes	Beef	Pig	Poultry
Highest EU price	15,66	15,28	15,73	20,7	343,45		120,0
Lowest EU price	9,87	9,71	11,13	4,22	221,87	105,58	66,54
EU-15	12,964	12,14	13,56	16,16	254,35	139,55	83,18
Hungary	10,69	11,28	8,42	7,76	76	102,67	87,25
HU price in % of lowest EU price	108,3%	116%	75,7%	183,8%	34,25%	97,24%	131,12%

Source: Eurostat, KSH

Taking over CAP institutional prices is one of the most important elements of CAP adaptation. Two important conclusions should be emphasized. (a) A possible rise in Hungarian producer prices can be expected for products of which current price is lower than the CAP institutional price. This in turn will reduce the price competitiveness, what is more, rising food prices can result in a narrowing internal demand. (Problems are less significant, if the rise in producer prices is accompanied by the improvement of the product – product differentiation.) (b) Fluctuation of prices reduces stabilising agricultural prices and farm incomes.

Higher producer prices may have significant macroeconomic effects, which in turn may influence the agricultural competitiveness. Although higher producer prices encourage production, they may result in decreasing price competitiveness and decreasing domestic food demand. Consumers in Hungary spend relatively large share of their income on food so the adaptation process may contribute to the inflation.

The increasing profitability of agricultural production may result in a rise of input (labour, capital and land) prices. Theoretically there is no problem if rising input prices are accompanied by improving efficiency. If this is not the case, speeding up of inflation and deteriorating competitiveness can be expected. (From this point of view we should remember

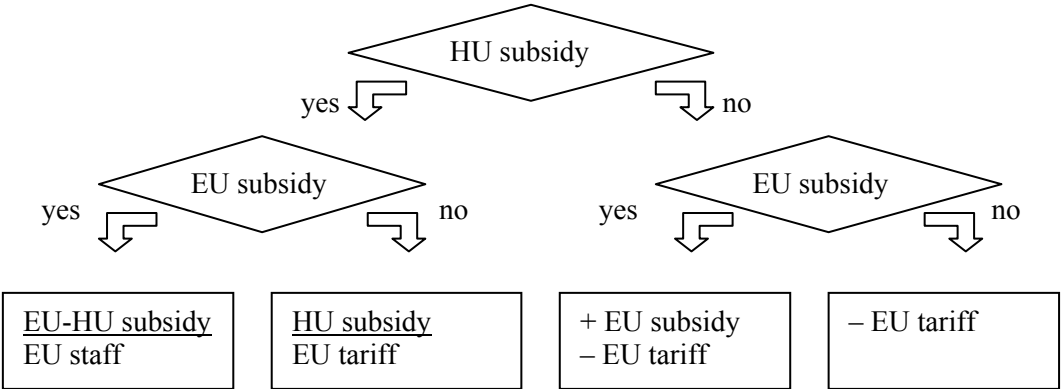
the so called Balassa-Samuelson<sup>1</sup> effect, as the share of non traded products is especially high in the agricultural sector.)

It is important to stress that low input prices (labour, land) are one of the most important sources of Hungarian agricultural competitiveness. Improving profitability of agricultural production will certainly be followed by a rise in factor prices. Factor price increase will in turn threaten one of the most important elements of price competitiveness. To keep the competitive position three solutions seem to be viable: a strict control over factor prices, product differentiation and market segmentation. Supposing free movement of labour and capital the first solution seems to be hardly feasible. The latter two strategies on the other hand would require a restructuring of Hungarian export structure in order to export products with higher value added. This restructuring would require at the same time deep changes as the experiences (e.g. the analysis of export subsidy systems) show the largest difficulties just in these sectors (e.g. processed fruits and vegetables, canned meat).

### 3 Comparative analysis of export subsidy systems

After accession there will be significant changes in the applied trade policy instruments. Position of Hungarian exporters will be determined by four factors: the extent of the former Hungarian export subsidy, the EU export subsidy, import charges applied by the EU and import charges applied by third countries on EU export. (Because of the wide range of products and countries the analysis of this latter factor is a very complex task so it requires further research.)

**Figure 1: Export subsidies and competitiveness. Source of potential benefit/loss**



<sup>1</sup> According to the Balassa-Samuelson effect in the catching up economies efficiency of sectors producing traded products increases faster than in sectors producing non traded products. As regards traded products, real wages are determined by the marginal productivity of labour. Supposing equalization of wages between sectors, we can say that wages in the sectors producing non traded products do not accommodate to labour productivity resulting in an additional inflation.

This point overviews the possible changes of market access of selected product groups (cereals, pig and poultry meat, fruits and vegetables). Selection was based on sensitivity and significance of the product groups.

Table 3 shows the structure of the agricultural export (1999) based on customs tariff classification. The examined four product groups made up 55% of the turnover. The share of cereals and products thereof was 13%, the share of pig meat and products thereof was 10%, and the respective shares of poultry and fresh and processed fruits and vegetables was 11% and 20%.

**Table 3:**  
**Structure of the Hungarian agricultural export, 1999**  
**(Share of total turnover, %)**

HS	Product	%	HS	Product	%
01	Live animals	4	13	Shellac, gum, rosin	0,0
02	Edible meat, by-products and inmeats	21	14	Plant products not listed elsewhere	0,3
03	Halak, rákok, víziállatok	0,5	15	Animal fat and vegetable oils	5,5
04	Dairy and other animal products	4	16	Fish and products of it	4,3
05	Other animal products	3	17	Sugar and products of it	1,4
06	Plant products	0,6	18	Cocoa and products of it	1,0
07	Vegetables, roots	6,6	19	Products from cereals or flour, or with starch or milk	1,5
08	Fruits and nuts	4	20	Products from vegetables or fruits	10
09	Coffe, tea, spices	1,5	21	Other edible products	3
10	Cereals	10	22	Beverages, alcohol and vinegar	5
11	Products of the milling, industry malt, starch, inulin	2	23	By-products, waste, prepared feed	3
12	Oilseeds and other seeds, industrial and drug plants, straw and fodder	5	24	Tobacco and processed (tobacco) substitute	2

Source: KSH

The analysis aims to answer the following questions:

- Which products are subsidised both in the EU and in Hungary? (What is their ratio?)
- Which are the products for which the deterioration of market access can be expected due to the abolishment of export subsidies?
- Of which products' market access will improve?

Due to the changing export subsidy system – taking into account the former subsidies and import concessions – the position of the exporters can alter in the following ways. (Figure 1 shows a guide to the analysis.)

- 1) **There is no export subsidy either for the European Union or for Hungary.** If this is the case, the only source of potential benefit comes from the abolishment of import charges (see Table 4). The potential benefit can be realized in three ways: (a) if the exporter's bargaining power is high, he can fully exploit the possibilities arising from the abolishment of duties; (b) potential benefit is realized by the importer; (c) divided benefit between partners. In the case of (a) and (c) the exporters can follow two strategies based

on the demand price elasticity. If demand (on the target market) is inelastic exporters can increase their export income through the raise of export prices. (The extent of the increase is limited on the abolished duty or the share of potential benefit in case of (c).) If demand is elastic exporters can increase their export income through the decrease of export prices. Products belonging to the first group are e.g.: ox- tongue and liver; turkey (73% and 83%), legs; hams, shoulder and loin salted or in brine; fattened goose and duck liver. There are also products for which tariff concessions were applied such as: sheep and goat meat; turkey breast and cuts; potatoes; onions (fresh); melon; cabbage; poultry liver; cuts of duck; goose (72% and 82%); rabbit and hare.

**Table 4: Products with favourable market access prospects<sup>1</sup>**

CN	Product	Reason of favourable market access		
		Higher export subsidy	Abolished tariff (preferential)	Abolished MFN tariff
02062100, 2290	Ox-tongue and liver frozen			X
02072410, 2490	Turkey (83%, 73%)			X
02072660, 2760	Turkey legs			X
02101111	Ham salted or in brine			X
02073410, 3490	Fattened goose and duck liver			X
0204	Sheep and goat meat, fresh, chilled or frozen		X	X
02072650, 2750	Turkey breast		X	X
02073251,3351;3259,3359	Goose (82%, 72%)		X	X
02081011, 1019	Rabbit (meat)		X	
07011000	Potatoes (seed)		X	
07032000	Garlic		X	
08071100, 1900	Melon		X	X
02011000	Carcass and half carcass of beef	X	X	X
100300	Barley	X	X	X
080810	Apples	X	X	X
08061010	Table grapes	X	X	X
080930	Peaches	X		X
07020000	Tomatoes	X	X	X
190530	Biscuits	X		X
1902	Pasta	X		X

Notice: 1) Selected products. The list is not complete.

**2) Export subsidy is applied in Hungary but there is no subsidy in the EU.** The potential benefit or loss is determined by the ratio of the abolished export subsidy and tariff. The smaller the abolished export subsidy is relative to the abolished tariff, the larger the potential benefit. In the worst case the abolished subsidy is higher than the abolished import charge. The profitability of the export will certainly decline but this does not imply a compulsory deterioration of market positions. (This latter will depend on the fact whether the exporter stood in need of the subsidy or he was overcompensated.) The following products belong to this group e.g.: hybrid maize seeds; frozen cherry; purée and compote of apples. There are also products for which tariff concessions were applied: frozen beef, first quarter, boneless; pork carcass and half carcass fresh or chilled, legs, shoulders, ham, lion and flank fresh, chilled or frozen; chicken breast; and most of the processed fruits and vegetables.

**3) Both Hungary and the European Union apply export subsidies.** There are two sources of potential benefits: the higher export subsidy and the abolished tariff. As regards the



import charges see point 1. As for the export subsidies three factors should be examined: (a) the extent of the Hungarian and the European export subsidy; (b) direction of the Hungarian export and subsidised trade relations of the EU; (c) Hungary's geographic situation, distance from potential markets. Products belonging to this group are e.g.: products from tomatoes; sweet corn; chicken (70% and 65%); first quarters of beef fresh, chilled or frozen; sausages; ham and wheat.

- 4) **The European Union applies export subsidy but there is no subsidy in Hungary.** These subsidies may improve market access conditions on third markets. The following products belong to this group e.g.: carcass and half carcass of beef; dried or smoked ham; rye, barley, oats, rice; apples, table grapes, peach, tomatoes, eggs and certain pasta (non Annex I products). Products subsidised under the sugar and dairy regimes belong also to this group. What is more, both sugar and milk are basic products so certain processed products can also be subsidized (e.g. sugar confectionery, pasta, biscuits, dairy products etc.)

The following conclusions can be drawn on the basis of the analysis. Due to abolishment of tariffs, market access will certainly improve in the case of products for which Hungary has not applied export subsidies. (E.g. sheep meat, turkey breast, rabbit, melon etc.) The situation is more favourable if the EU applies export subsidies. If this is the case, the Hungarian exporters' market access prospects may improve on third markets too. (As regards the above mentioned, we should notice that the analysis was based on the data of 1999. Conditions can change significantly until the accession takes place. There may be changes both in the Hungarian and the EU subsidy system, what is more, the EU declared that under certain conditions it is willing to negotiate on the total abolishment of export subsidies on the agricultural negotiations.)

Market access conditions will undoubtedly worsen if Hungarian export subsidy is higher than the tariff applied by the EU or Hungary has applied export subsidies on third country exports, while the EU has not. Very important products belong to this group, e.g.: most of the processed fruits and vegetables; carcass and half carcass of pigs; ham, shoulder, lion and flank, fresh, chilled or frozen; chicken breast.

#### **4 Comparative analysis of import charges**

Adaptation of the CAP import regime will have overall economic effects. This analysis focuses only on the effects which directly influence the producers'/exporters' situation after accession. Direct effects may arise both on input and output side of production.

##### *4.1 Possible impacts on the input side*

As regards the future competitiveness, it is important to examine the costs of import materials incorporated in export products. According to tariff union theories with the abolishment of tariffs and quantitative restrictions a reduction in transaction costs can be expected, which may result in a reduction of consumer prices. Under the Europe Agreement however, the majority of inputs – with the exception of some sensitive products – can enter Hungary duty free even now. From this perspective the accession will not significantly affect production costs.

**Table 5: Import charges on selected inputs in Hungary and in the European Union (percentage), 2001**

CN	Product	EU duties	HU/EU duty	II <sup>3</sup>	I <sup>4</sup>
310221	Ammonium-sulphate	6,5	1,5	10	3
310230	Ammonium-nitrate	6,5	1,5	10	3
310310, 20	Super-phosphate	0	0,6	3,8	0
3104	Potassium	0	0	0	0
3105	Compound (nitrogen, phosphor, potassium) fertilizer	6,5	0,8	5,0	0
38081010	Piretroid based insecticides	6	1,3	5	0
38081020	Chloric hydrocarbon based insecticides	6	1,5	9,8	-
38082010	Cupric fungicide	4,6	1,3	8,5	0
38082015	Other fungicide	6	1,3	8,5	0
38083011	Fenoxi phytohormon based herbicide	6	1,3	8,5	0
38083030	Ant-germination formulation	6	1,3	8,5	0
0713109000	Dried peas	0	0	40	38
10020000	Rye	30,04-43,04 EUR/1000 kg <sup>1</sup>	-	32	-
1003009000	Barley	-	-	32,8	-
10040000	Oats	89 EUR/1000 kg	-	32	-
1005900000	Maize	-	-	32	-
1007009000	Sorghum	30,04-43,04 EUR/1000 kg <sup>1</sup>	0	0	0
1008100000	Buckwheat	37 EUR/1000kg	0	0	0
1008200000	Millet	56 EUR/1000kg	0	0	0
1008300000	Canary seeds	0	0	0	0
1008901000	Triticale and other cereals	93 EUR/1000kg	0	0	0
1201009000	Soya beans	0	0	0	0
1203000000	Copra	0	0	0	0
1214901000	Cattle-turnip, cole	5,8	0	40	38
2102201110	Fodder yeast		0	0	0
2301100099	Meat meal not for human consumption		0	15	-
23021010	Meal and bran from maize	44 EUR/1000kg	-	12,8	-
23023010	Meal and bran from wheat	44 EUR/1000kg <sup>2</sup>	-	12,8	-

Source: VPOP and TARIC. Notices: 1) Depending on the departure and arrival port the tariffs are: 33,04; 31,04; 30,04 or 43,04 EUR/1000 kg. 2) In quota tariff: 30,6 EUR/1000kg. 3) II: MFN (most favoured). 4) I: Preferential rates, only for certain countries with certificate of origin.

Similar conclusions can be drawn also as regards the adaptation of the EU's import system. A small reduction in production costs can be expected on the field of crop production due to lower EU tariffs (see Table 5) on chemical products (fertilisers, insecticides etc.), but this reduction will certainly be overcompensated by the rise in factor prices. The EU applies significantly higher tariffs on animal feed (especially for grains), but the expected rise of feeding costs can be attributed to entirely different factors: higher grain and factor prices due to the adaptation of CAP internal regulations.

#### *4.2 Possible impacts on the output side: situation of the Hungarian producers on the domestic market*

After accession to the EU all import charges will be abolished mutually. This means that not only the Hungarian producers' market access conditions will improve but also that of the EU exporters. The consequence may be an increasing competition on the domestic market. From this point of view it is important to stress that there are several traditional Hungarian

export products (e.g.: pigs and poultry meat, certain processed fruits and vegetables etc.) of which competitiveness has already been doubtful. Without the necessary steps (modernization, improving efficiency, new varieties etc.) the Hungarian producers may face with decreasing market shares on the domestic market too.

Another important effect of the customs union is that the average level of protection (against third country imports) will increase after accession. However, possible effects may be different product by product. Possible effects on selected products are summarized in Table 6.

**Table 6: Effects of accession on import charges (ad valorem equivalent, selected products)**

	1997	Bound duties from 2000	Change after accession (%) <sup>1</sup>
<b>Wheat</b>	41	32	+30
<b>Oilseeds</b>	0	-	-
<b>Sugar</b>	69,3-74	68	+60
<b>Beef</b>	91,9	72	+33
<b>Pork</b>	56,5	52	-37
<b>Poultry</b>	49,9	39	-56

Source: Country Reports, DG VI, 1998. Notice: 1) Supposing the adaptation of EU bound tariffs.

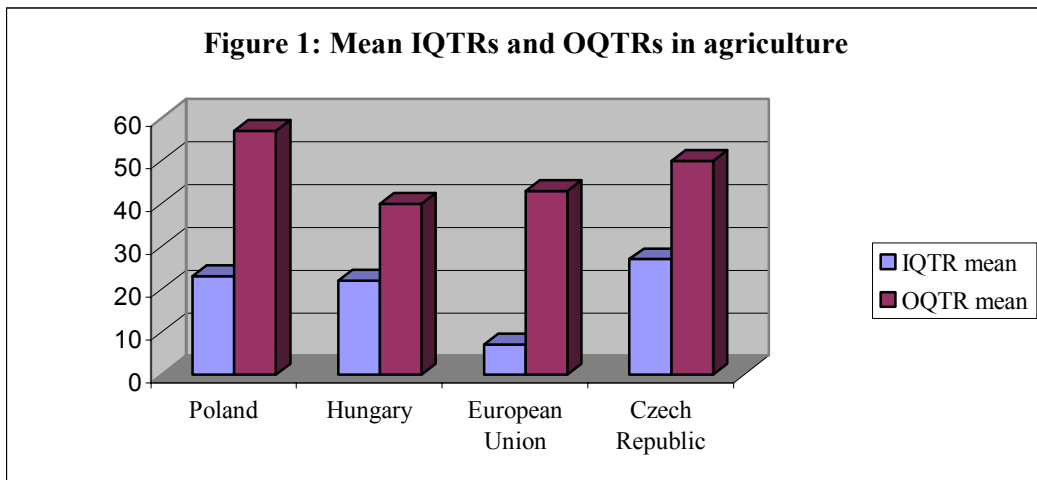
Two important conclusions should be stressed on the basis of the data in Table 6.

- Although the **sugar** sector has already been highly protected, a further increase (+60%) in protection can be expected after accession. This high level of protection accompanied by a relatively highly protected internal regime will certainly rise consumer prices.
- The former analyses have already highlighted the weakness of the **pork and poultry** sectors<sup>2</sup>. Comparison of the levels of protection confirms this conclusion. Decreasing market share can be a real threat for the Hungarian producers as after accession not only the European import will be duty free but also the protection against third country imports will decrease.

As most of the trade is realized under preferential agreements both in the EU and in Hungary we can get a more shaded picture of import protection if we examine not only the MFN tariffs but also in (IQTR) and out of quota tariffs (OQTR). (See Figure 2.)

---

<sup>2</sup> Import charges are not directly comparable as specific tariffs are applied on these products in the European Union. During calculations ad valorem equivalents were applied. (EU import charges are divided by world market prices – e.g.: OECD reference prices.) The comparison in that way is not really reliable, as the calculation is very sensitive on the development of the world market price. Reduction of world market prices results in a relatively lower Hungarian import charge, while the increase of world market prices weakens the import protection of the EU.



Although mean OQTR is somewhat higher in the European Union than in Hungary, in quota tariffs (preferential tariffs) are significantly higher in Hungary. Tariff quotas were set for about 45% of Hungarian agricultural products. The mean IQTR is 21%, which can be considered relatively low. IQTRs are 0-20% ad valorem duties or specific tariffs in the European Union<sup>3</sup>. In quota tariffs are the highest for cheese in the European Union (1000 EUR/t), while for sugar, sugar confectionery, butter and (bread) cereals in Hungary (50-70%). OQTRs are the highest for beef (about 80%) and for products of 23<sup>rd</sup> product group (67%), while they are the highest for butter (102%) and for beef (72%) in Hungary.

## 5 Analysis of model results

The former analyses concentrated only on one aspect (producer prices, export subsidies or import protection) of competitiveness. In order to evaluate the future competitiveness models or indices should be developed which are able to handle various price and trade policies, interference of macroeconomic factors and latest phenomenon of international agricultural trade (intra-industry trade, higher value added, product differentiation etc.). Such models have already not been developed but we can utilize the results of models developed to simulate the effects of CAP adaptation. During the analysis we used the results of the models developed and run by M. Banse and W. Münch (Banse, 1999; Münch, 1999).

### 5.1 Short description of models

A general and a partial equilibrium analysis are coupled in the model. ESIM (European Simulation Model) was used as a partial equilibrium analysis. This model can simulate the CAP adaptation in the acceding country. The model involves 16 agricultural products, 9 processed products and 6 production factors (see Table 7).

<sup>3</sup> There are no EU bound tariffs for certain cereals. Tariffs are calculated in order to assure the full utilization of quotas. No ad valorem equivalents can be calculated for these products.

**Table 7: Products covered by the model**

	<b>Primary commodities</b>	<b>Processed products</b>
<b>Arable crops</b>	wheat, durum wheat, barley, other cereals, soya-bean, rape seeds, oilseeds	soya flour and oil, rape meal and oil, sunflower meal and oil
<b>Cereals substitutes</b>	cassava, maize gluten, other protein crops, other energy feeds	
<b>Animal products</b>	milk, beef, pork, poultry meat, eggs	skimmed milk powder, butter, cheese

Supply, demand, market prices and budgetary expenditures were determined in the framework of the model. Demand and supply reactions are based on price elasticity. Exogenous (real exchange rate, real incomes, population, structural changes, CAP prices, duties, quotas etc.) and endogenous variables (supply, area allocation, yields, demand, net export, domestic and world market prices, budgetary expenditures) were also taken into account.

Adaptation of the CAP has serious macroeconomic consequences especially in Hungary where macroeconomic significance of agriculture is high. Equilibrium conditions change fast in transition economies so development of macroeconomic factors can not be based on expectations. That is why a general and a partial equilibrium analysis were coupled (see Banse, 1997 and 1998). Outputs of the general equilibrium model (exchange rates, costs, income etc.) are used as inputs of the partial equilibrium analysis.

Conditions of the accession are still uncertain so different scenarios were examined. There are three main scenarios in the partial equilibrium analysis (see Table 8):

- a) Hungary joins the European Union but CAP is not extended to Hungary;
- b) accession with CAP but without direct payments;
- c) accession with CAP and direct payments.

**Table 8: Scenarios in the partial equilibrium analysis**

	<b>EU membership</b>	<b>CAP</b>	<b>Direct payments</b>	<b>Quantity restrictions</b>
<b>a)</b>	+	-	-	-
<b>b)</b>	+	+	-	+
<b>c)</b>	+	+	+	+

The scenarios are similar in the general equilibrium analysis but there is a base scenario (a) without EU accession. The scenarios are summarized in Table 9.

**Table 9: Scenarios in the general equilibrium analysis**

	<b>EU membership</b>	<b>CAP</b>	<b>Direct payments</b>
<b>a)</b>	-	-	-
<b>b)</b>	+	-	-
<b>c)</b>	+	+	-
<b>d)</b>	+	+	+

## 5.2 Analysis of model results: adaptation and competitiveness

Comparing the Hungarian and EU producer prices, in most cases price advantage can be revealed on behalf of the Hungarian producers. Decisions based on simple price comparisons however, could be hasty decisions, which may have undesirable macroeconomic and social effects. It is then worth testing the conclusions of price comparisons. The above-described model can be a useful instrument of testing.

### *1<sup>st</sup> step: comparative analyses*

Several competitive effects of CAP adaptation can be revealed by the help of a simple logical model or by comparative analyses. Based on the former analyses the following main tendencies can be identified.

- Price competitiveness seems to be obvious for most products if we compare producer prices.
- The situation is less unambiguous if we compare Hungarian producer prices to most competitive EU prices. In this case competitiveness of traditional Hungarian export products (pork, poultry) becomes doubtful.
- Due to abolishment of tariffs, market access will certainly improve in the case of products for which Hungary has not applied export subsidies. (E.g. sheep meat, turkey breast, rabbit, melon etc.) The situation is more favourable if the EU applies export subsidies. Products affected are e.g.: apples, peach, tomatoes, barley, table grapes, pasta, certain sugar confectionery and dairy products.
- Market access conditions will undoubtedly worsen if Hungarian export subsidy is higher than the tariff applied by the EU or Hungary has applied export subsidies on third country exports, while the EU has not. Very important products belong to this group, e.g.: most of the processed fruits and vegetables; carcass and half carcass of pigs; ham, shoulder, lion and flank, fresh, chilled or frozen; chicken breast.
- The higher average import protection of the pork and poultry sectors may also imply weakening competitiveness.

If we compare the above results, we can find significant differences.

- Competitiveness of Hungarian fruit and vegetable products seems to be unquestionable on the basis of price comparisons. However, we should remember that most of the processed products are subsidised which subsidy can not be continued after accession (or after the expiry of WTO waiver).
- Improving market access could be expected for potatoes based on the differences in export subsidy systems. Price comparisons at the same time, show price disadvantage for this product.
- Improving market access conditions could be expected for poultry based on the differences in export subsidy systems, but price comparisons and the level of import protection imply competitive problems.
- The conclusions of different analyses are unanimous for pork. Prices, subsidies and the level of protection, all show the competitive disadvantage of the sector.

The differences may be explained by the fact that the above-mentioned analyses could follow only the change of one variable. Long run decisions at the same time require more detailed analysis.

2<sup>nd</sup> step: Deeper analysis: ESIM

The basic question of the analysis is that how production, domestic consumption and net export will develop after the adaptation of the Common Agricultural Policy. The model does not directly give answers on questions regarding competitiveness. Based on the development of net export (Table 10) however, we can draw important conclusions.

**Table 10: Development of net export in different scenarios**  
(million tons)

	base	2003			2006			2013		
		a)	b)	c)	a)	b)	c)	a)	b)	c)
<b>cereals</b>	1,42	2,68	7,80	7,63	3,67	9,15	8,36	5,84	11,19	11,00
<b>from which</b>										
<b>wheat</b>	1,01	1,76	3,38	3,29	2,24	3,91	3,81	3,30	4,71	4,50
<b>grains</b>	0,32	0,92	4,42	4,35	1,43	5,24	5,15	2,54	6,49	6,04
<b>oilseeds</b>	0,13	0,42	-0,13	-0,14	0,49	-0,05	-0,08	0,55	0,07	0,04
<b>sugar</b>	0,06	0,14	0,03	0,02	0,19	0,03	0,02	0,28	0,04	0,04
<b>butter</b>	-	-	-	-	-	-	-	0,04	-	-
<b>cheese</b>	-	-	-	-	0,01	-	-	-	-0,02	-0,02
<b>beef</b>	0,02	0,01	0,02	0,02	-0,01	-0,01	-0,02	-0,02	-0,02	-0,02
<b>pork</b>	0,07	0,07	0,02	-	0,04	-0,06	-0,08	-	-0,24	-0,27
<b>poultry</b>	0,11	0,14	0,03	-	0,13	-0,02	-0,04	0,09	-0,08	-0,10

Source: Halmai, 1999. Notices: a) Membership without CAP. b) CAP without direct payments. c) CAP with direct payments.

Hungarian **cereals** production seems to be competitive both on the basis of comparative and sectoral analyses. This product seems to be the most sensible for the production incentive effects of the CAP. Here we can also see how important are the simulations. We could expect that both higher prices and direct payments have production incentive effects. The simulation however shows that both production and net export are lower<sup>4</sup> if direct payments are extended to Hungary. In the case of c) production incentive effects are limited by set aside requirement.

The significant increase in production and in net export relative to base scenario shows that the potential price increase and the improving market access conditions will overcompensate the expected rise of production costs.

There are sharp changes in the **oilseeds** sector. The simulation forecasts an increase in production without CAP, while after adaptation net import can be expected instead of the former net export. The reason may be the relatively higher sensitivity and input need of oilseeds and the fact that oilseeds does not show so large price advantage as cereals.

Comparative analyses revealed competitive advantage for **sugar**. However, the simulation discovered that no increase in net export could be expected, what is more, it would fall under the base level (1997).

Comparative analyses revealed competitive advantage for **beef**. However, the simulation shows that net import can be expected despite of higher prices and premium system.

The simulation confirms the concerns about the competitiveness of pork and poultry sectors. A decrease in net export of **pork** can be expected independently of CAP adaptation,

<sup>4</sup> The results (production incentive effects) are very sensitive on the basic assumptions: the whole sum of the direct subsidies is added to the prices or only part of them. In this model only part of the subsidies were taken into account.

but even net import of this traditional Hungarian export product can be a reality because of the adaptation. The situation of **poultry** is a slightly different as the decrease of net export is the exclusive result of CAP adaptation.

The results of the simulation confirm the conclusion that the CAP adaptation will favour basically the cereal production. CAP adaptation will intensify the already existing (competitive) differences between the two large sectors of agriculture (plant and animal products). If we examine the relative quantities we can see that large part of net export comes from cereals and mainly from grains. This strong specialization may be dangerous for Hungary, especially as regards the Hungarian trade balance. (It is also important to stress the limits of simulations. Models can only give a simplified picture of the real world and they are not able to take account all factors. The results may identify the potential threats but we should treat them carefully.)

## **6 Conclusions**

Examining the possible competitive effects of changing trade policy with different methods (comparative analyses: producer prices, export subsidies, level of import protection; simulation) we often get clashing results. Even so important tendencies can be identified. Relative simplicity is the advantage of comparative analyses but they can examine only the effects of one variable. Models however can simulate the effects of more interdependent variables (prices, policies etc.) under different scenarios.

Results of simulation confirmed several conclusions of comparative analyses. The results of simulations and the conclusions of the comparative analysis of the levels of protection are the most congruent.

Comparative analyses revealed that price advantage is one of the most important factors of EU-competitiveness. As there is close relation between competitive prices and low input prices (labour, land) one of the most important sources of Hungarian agricultural competitiveness will be threatened by the adaptation of the CAP. Improving profitability of agricultural production will certainly be followed by a rise in factor prices decreasing the price competitiveness of Hungarian agricultural products. To keep the competitive position three solutions seem to be viable: a strict control over factor prices, product differentiation and market segmentation. Supposing free movement of labour and capital the first solution seems to be hardly feasible. The latter two strategies on the other hand would require a restructuring of Hungarian export structure in order to export products with higher value added. This restructuring would require at the same time deep changes as the experience (e.g. the analysis of export subsidy systems) show the largest difficulties just in these sectors (e.g. processed fruits and vegetables, canned meat).

The results of the simulation confirm the conclusion that the CAP adaptation will favour basically the cereal production. CAP adaptation will intensify the already existing (competitive) differences between the two large sectors of agriculture (plant and animal products). All of the analyses came to the conclusion that the prospects of arable crops are favourable. Less reassuring are the prospects of animal products. There are apparent efficiency problems, and rising feed costs (due to accession) may further weaken the position of this sector. Without basic structural reforms the sustainability of the sector's competitiveness is questionable.



## References

- Abott, P. C. (1998): Competitiveness: Theoretical Foundations versus Empirical Observation. Paper presented at the 59<sup>th</sup> EAAE/ISHS Seminar. April 22-24, 1998. Apeldoorn, the Netherlands.
- Agra Europe, London, various issues
- Balassa, B. (1989): Comparative Advantage, Trade Policy and Economic Development, New York and London
- Baldwin, R. E. (1994): Towards an Integrated Europe. London
- Banse, M. (1999): Macro-economic analysis. Major factors and impacts of EU-adaptation of the Hungarian agricultural economy. Interim Report, Göttingen.
- Banse, M. – Guba, W. – Münch, W. (1998): Eastern Enlargement of the EU: How competitive is the Agri-Food Sector in Central Europe under EU conditions? The Example of Hungary and Poland. Paper presented at the 59<sup>th</sup> EAAE/ISHS Seminar. 1998. április 22.24. Apeldoorn, Hollandia.
- Directorate-General for Economic and Financial Affairs (1997): The CAP and enlargement. European Economy, No.2
- East Europe, various issues
- Elekes, A. (2001): A magyar mezőgazdaság EU-versenyképességét meghatározó tényezők, különös tekintettel kereskedelempolitikai feltételrendszerünkre. Doktori értekezés
- European Economy (1996): The CAP and Enlargement – Economic Effects of the Compensation payments. European Economy, Vol. 2.
- European Economy (1997): The CAP and Enlargement – Agrifood price developments in five associated countries. European Economy, Vol. 2.
- European Commission (DG VI) (1999): Prospects for Agricultural Markets in the Central and Eastern European Countries. Working document, Bruxelles.
- European Commission (1998): Agenda 2000 – Legislative Proposals. Brussels.
- European Commission (DG VI) (1998): Agricultural Situation and Prospects in the Central and Eastern European Countries. Working document, Bruxelles.
- Eurostat publications (1994-2000), Luxemburg
- FVM (2000): A földművelésügyi és vidékfejlesztési miniszter 6/2000. sz. (II. 26) FVM rendelete az agrárgazdasági célok 2000. évi költségvetési támogatásáról. <http://www.aik.hu>
- Halmai, P. (2000): A Közös Agrárpolitika (CAP) keleti kiterjesztésének alapproblémái. Az adaptáció lehetséges közgazdasági hatásai. In: Halmai Péter (szerk.): Magyar agrárcsatlakozás. Dilemmák, lehetőségek, megoldandó feladatok. Agroman Oktatási Alapítvány, Budapest.
- Halmai, P. (1999): A CAP adaptációjának a magyar agrárgazdaságra gyakorolt makrogazdasági hatásai, Phare-tanulmány
- Halmai, P. (ed.)(1995): Az Európai Unió Agrárrendszere. Mezőgazda Kiadó, Budapest
- KSH (1990-2000): Statisztikai Évkönyv, Budapest
- Münch, W. (1999): Partial impact analysis on agricultural markets. Interim Report. Göttingen.
- OECD (1999): Agricultural Policies in OECD Countries
- OECD Trade Directorate (2000): Review of Tariff Synthesis Report, TD/TC(99)7/FINAL
- Pouliquen, A. (1995): Agrofod Dynamics and Competitiveness in Central Europe: Implications for the EU Enlargement. In.: Somai, M. (ed.): Agricultural Accession of the Central and Eastern European Countries to the European Union.
- Tangermann, S. –Banse, M. (ed.) (2000): Central and Eastern European Agriculture in an Expanding European Union, CABI