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**CHANGES IN THE STRUCTURE OF AGRICULTURAL PRODUCTION, FARM
STRUCTURE AND INCOME IN HUNGARY IN THE PERIOD OF 2004-2006**

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Paper prepared for presentation at the 104th (joint) EAAE-IAAE Seminar

Agricultural Economics and Transition:

**„What was expected, what we observed,
the lessons learned.”**

Corvinus University of Budapest (CUB)

Budapest, Hungary. September 6-8, 2007

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Abstract

This study reviews the major changes in Hungarian agriculture that occurred between 2004 and 2006. Subjects investigated will include the structural shift towards crop production, the drastic decrease in the foreign food trade balance, and agriculture's deteriorating capacity to sustain and retain a rural population. (Hereinafter: sustaining and retaining capacity of agriculture). The author will diagnose related problems, but will not offer any solutions. Nevertheless, he will present a perspective stipulating that Hungarian agriculture's chronic problems require an agricultural strategy based on political consensus.

Key words

EU accession, structural change, foreign food trade, sustaining and retaining capacity of agriculture, agricultural strategy

Introduction

This study will review the major changes that occurred between 2004 and 2006. It will *also diagnose the problems stemming from these changes, but not submit proposals for their solution.*

As for a *database*, the study has relied on data and publications from the Hungarian Central Statistical Office (KSH), the Research Institute of Agricultural Economics (AKI), and Eurostat. When developing the analysis, assistance was provided by consultants from the University of Debrecen and elsewhere.

Three *factors* make it difficult to extend the topic's scope. *First*, so far only limited 2006 data are available. *Second*, when it came to weather the years 2004-2006 were better than average. *Third*, currently one can only offer a restricted evaluation of the Common Agricultural Policy's (CAP) effect on facets of Hungarian agricultural income. The same holds true for its environmental/nature conservation policies.

The two and a half years in question clearly show that Hungarian society – and especially the rural population – was not ready for the anticipated consequences and challenges posed by EU accession. While large-scale agricultural producers were well-informed, farmers with small and mid-size operations were fearful of the future.

Moreover, experts from the Research Institute of Agricultural Economics (Mészáros, 2002; Kartali et al., 2004a, 2004b; Popp et al., 2004; Potori and Udovecz, 2004) have published several papers on the possible consequences of EU accession. With the goal of facilitating future decisions, they conducted impact studies and forecasts on crop production and animal husbandry. And these impact studies and forecasts proved

most correct. However, a highly heterogeneous product range rendered forecasts for horticultural production unreliable.

Expansion and structural change in Hungarian agriculture

Table 1 shows agricultural production indices.

Table 1

Agriculture gross output volume indices (1986–1990=100)

Period	Agricultural production	Crop production	Animal husbandry
1986–1990	100	100	100
1991–1995	73	75	70
1996–2000	71	76	65
2001–2005	78	91	62
Of which:	(2001–2003=100)		
2001–2003	100	100	100
2004	118	139	88
2005	107	121	88

Source: KSH, 2006a

Even if the average of the 2001–2005 figures are considered, Table 1 still shows that the output figures did not equal those preceding the regime change. In the first half of the 1990s crop production reached rock bottom, but later recovered and shot straight up. However, animal husbandry appears in an unstoppable downward spiral.

In the 1970s and 1980s there tended to be a 50-50 percent output distribution between the main sectors, but subsequently this radically shifted toward crop production. Therefore, domestic demand for forage plants plummeted and caused severe sales problems.

In 2004 and 2005 Hungarian farmers were aided by superb weather conditions and, weather-wise, 2006 was also a pretty good year. It is thus expected that between 2004 and 2006 cereal production will be shown to have greatly surpassed the previous years' average (KSH, 2006h). These abundant cereal harvests had a decisive impact on the crop producing sector

Thanks to post-EU accession intervention procurement policies, those farmers producing *cereals, oil, and protein crops* (GOFR products) had a much bigger and guaranteed income. However, most of the 2004 area-based subsidies were delayed until 2005, creating severe liquidity problems for the majority of farmers. Storage problems

have largely been solved, but selling accumulated stock still poses great difficulties. On September 28, 2006 Hungary's intervention cereals stock was 5,616 million tons, most of which was maize (the latter constituting 80 percent of the entire stock of the EU 25 countries) (FVM, 2006b).

Table 2

**Cereal and horticultural product output,
1,000 tons**

Denomination	Average of 1996-2000	2004	2005	Average of 2004-2005
Cereals	11,967	16,779	16,212	16,500
Vegetables	1,683	2,033	1,547	1,790
Fruits	951	1,062	742	902
Grapes	671	789	536	663

Source: KSH 2006a

While the positive effects of EU market regulations and good weather combined to benefit crop production, in the **animal husbandry sector** the enduring fifteen-year crisis worsened.

Compared to the year prior to Hungarian EU accession, major stock species (excluding sheep) were smaller in the autumn of 2006. It was mainly private farmers that cut their stock numbers.

Between 2003 and 2006, the overall number of company farms raising cattle increased slightly, but 40 percent of private farms gave up raising cattle. The number of company farms and co-operatives raising pigs increased by 14 percent, whereas that of private farms decreased by 27 percent. The number of company farms maintaining hen stocks remained largely stable, but 26 percent of private entrepreneurs liquidated their stock. In post-accession Hungary only sheep stock somewhat increased. However, 7 percent of private producers also gave up sheep farming.

Table 3

**Livestock on 1 August of each given year,
in 1000 head**

	Cattle	of which cows	Pigs	Hens	Sheep
2003	766	359	5.138	45.014	1.226
2004	728	342	4.382	41.533	1.347
2005	722	343	4.194	40.634	1.419
2006	705	326	4.065	37.455	1.329

Source: KSH, 2006b

Pig and poultry farms are the key elements of the Hungarian animal husbandry sector. However, because of the paltry support provided by EU market regulations (CMOs), the decline of the Hungarian pig and poultry sectors was highly predictable. Moreover, national subsidies for these sectors are limited and their products no longer enjoy customs protection from products from new member states. Consequently the Hungarian domestic market was flooded by often poor-quality meat products from some countries which hindered consumption of better-quality, but more expensive domestic products.

Concurrent with EU accession, the Hungarian dairy sector underwent reforms which resulted in a steep fall in domestic dairy prices and prompted the bankruptcy of a number of producers – mainly private entrepreneurs. Hungarian dairy producers’ market position was eroded by imports of so-called “ersatz milk” and by imported cheap milk and dairy products from some of the new member states.

Moreover, the worldwide hysteria over bird flu hurt the poultry sector. As expected, it was only those involved in sheep and beef husbandry whose positions were perceptibly improved by the CAP.

The CAP only provides moderate subsidies for horticultural products. Furthermore, these plants are extremely weather sensitive and booming import competition badly damaged the sector’s market position.

Changes in foreign food trade

For decades Hungary enjoyed a positive foreign food trade balance, and this trend also held true for the EU-15. In 2004 and 2005, the sector was stunned when food imports increased much faster than food exports, especially in relation to Poland, the Czech Republic, and Slovakia. The competitiveness of Hungarian foods has definitely decreased, especially with regard to animal products. In 2003, milk and dairy exports surpassed imports by 173,000 tons. In 2005, however, Hungary imported 95,000 tons more than it exported. Within two years Hungary’s 81,000 tons pork export surplus became a 44,000 tons import surplus. As for poultry, the positive export-import balance decreased by more than 30 percent (AKI 2006a, 2006b).

Table 4

Foreign food trade balance at current price in billions of HUF

Year	Balance
2002	308.9
2003	303.1
2004	223.1
2005	181.1

Source: KSH 2006c

Table 4 shows that in the year Hungary joined the EU the balance fell by about HUF 80 billions, meaning approximately 26 percent. In 2005 the decrease continued at a slightly slower rate. The January–October 2006 data indicate some improvement.

The declining competitiveness of Hungarian food products within the European Union is mainly caused by logistical shortcomings and poor marketing, and this is especially true in relation to the “Visegrád Countries.”

However, on a national economic basis Hungary’s post-accession foreign trade balance has constantly improved.

Table 5 is most revealing.

Table 5

**2005 food trade turnover, according to country groups,
in billions of HUF**

	European Union			Non-EU countries	Total
	EU 25	EU 15	New member states		
Imports	480.5	341.1	139.4	56.4	536.9
Exports	486.3	371.6	114.7	231.7	718.0
Balance	5.8	30.5	-24.7	175.3	181.1

Source: KSH 2006a; KSH 2006j

The table clearly shows that Hungarian food exports (67.7%) and food imports (89.5%) are highly EU-centered. For many years Hungary’s export surplus with the *EU-15* had been declining, and then almost disappeared. Hungary’s considerable export surplus with new member states has been replaced by an import surplus. The greater part of the national export surplus is with non-EU countries.

Agriculture’s deteriorating capacity to sustain and retain the rural population

During the past 15 years Hungarian agricultural economic literature has given prevalence to the issue of competitiveness, allowing it to overshadow agriculture’s role in sustaining and retaining the rural population. Of course there have been some published papers on employment in agriculture (Ángyán, 2005; Kapronczai et al., 2005; Hamza and Tóth, 2006; Tóth et al., 2002; Varga, no datum). These papers approached agricultural potential and its role in employing the rural population from a variety of viewpoints, some of which radically differed.

Official labour statistics do not reflect agriculture's real role in sustaining the rural population. Agriculture still has an important employment role. This is especially true in two in Hungary's seven regions: specifically certain areas in the Northern and Southern Great Plain regions. For the foreseeable future this situation is not expected to change. To quote Gyula Varga, "...although agriculture is not and will not be able to provide more people with work and subsistence, this role has not been taken by anything else in most rural areas. This is the main reason for the lack of jobs in the country (EU Studies-VI)."

After EU accession, horticulture and major animal-husbandry sectors were pushed into the background, and employment opportunities in agriculture plummeted. However, income sources for part-time agricultural employees dropped even further. It is important to mention that in Hungary, *paid work is only 23 percent of agricultural labour input as measured in AWU. (Annual Working Unit – 1,800 working hours per year) (KSH, 2006d; KSH, 2006i).*

EU rural development subsidies have not provided adequate compensation for those displaced from agricultural production. Under the Agricultural and Rural Development Operative Programme (ARDOP), only relatively few people might be able to save their jobs or create new ones (FVM, 2006a).

It is also worthy of mention that only 6 percent of the programme's sources were earmarked for "Expansion of Income Opportunities for the Rural Population"

In the older 15 EU member states agricultural production is firmly dominated by family farms. In Hungary, agricultural enterprises (companies and co-operatives) also have a major role. *KSH's 2004 data show that 53 percent of gross agricultural output and 39 percent of GDP were created by agricultural enterprises. The remainder was created by private systems working on a full or part-time basis (KSH, 2006a)m, and in terms of GDP this entailed the biggest portion.* If one considers the totality of agricultural procurement, then because of the latter's higher personal consumption quota, enterprises certainly dominate. But most horticultural products, for example, come from private farms.

Besides approximately 8,000 agricultural enterprises, KSH's 2005 Farm Structure Survey (KSH, 2006e) listed the data from more than 700,000 private farms. However, only 15 percent of these private farms should be regarded as actual commodity producers. Around half of them produce exclusively for their own consumption, and one-third occasionally take their produce to market.

There is a major difference between the two sectors' production tendencies. Nearly three-quarters of agricultural enterprises operate exclusively in crop production. The percentage of those ventures raising livestock only comes to 9%. In comparison, 47 percent of private farms only produce crops with a strong emphasis on horticultural products. Only a fifth of these farms are involved exclusively in raising farm animals.

According to AKI's 2004 Farm Accountancy Data Network survey, the distribution of agricultural-product *sales figures* is as follows:

Table 6

**Distribution of 2004 sales revenues,
in terms of percentage**

	Private farms	Agricultural enterprises
Arable crop production	40	35
Animal husbandry	42	56
Horticulture	18	9
Total	100	100

Source: Keszthelyi, 2005

The above table shows that crop production has roughly the same revenue share in the two sectors. As for animal husbandry and horticulture, the figures are markedly different. KSH's data suggest that 80 percent of vegetable, fruit, and vine output is produced on private farms.

In terms of area size, Hungarian agriculture is bipolar in nature. Farm companies and co-operatives have on average 374 hectares of cultivated land. This is more than 100 times the typical size of private farms (3 hectares) (KSH, 2006d).

Agricultural enterprises involved in large-scale crop production wish to minimize labour costs. For this reason a given region's employment picture is a matter of indifference to them. Clearly small and mid-size private farms practicing intensive horticulture and some animal husbandry provide better employment conditions than big enterprises focusing on GOFR crops.

If one compares the *GDP figures* per AWU per hectare of cultivated land for the two main sectors, the results are revelatory. With labour productivity, the agricultural enterprises' superiority is obvious (2.4-fold). And when it comes to area productivity the results are virtually the same. Large enterprises have the upper hand in terms of international competitiveness. Nonetheless, small and mid-size private farms have an important role when it comes to sustaining and retaining the rural population. This is due to the relatively high figure of gross added value (GDP) per hectare.

In any country calculating agricultural labour input poses problems. In Hungary, one uses a number of methodologies. The following table shows data using the most generally accepted method.

Table 7

**Number of people employed in agriculture between 2001–2005,
based on a thousand people**

Year	Number
2001	234.4
2002	240.9
2003	215.2
2004	204.9
2005	194.0

Source: KSH 2006d

The above data indicate that the number of full time agricultural employees decreased by 10 percent during the first two years after Hungarian EU accession. This outpaces the 2001-2003 rate (this statistic only includes those full-time private farmers with *entrepreneurial permits*).

In the EU actual agricultural income trends are usually measured with the so-called “A” index, meaning the real income change for factors per AWU (KSH, 2006k and Table 8).

Table 8

**“A” indices in some Central and Eastern European EU countries,
in terms of percentage**

Countries	2000	2003	2004	2005	2006*
Czech Republic	100	62.7	100.4	113.1	120.3
Estonia	100	172.6	268.2	272.8	260.8
Latvia	100	124.0	214.8	243.1	255.0
Lithuania	100	96.5	163.1	203.3	216.5
Hungary	100	91.7	142.1	129.9	135.7
Poland	100	103.5	201.9	205.7	213.9
Slovenia	100	89.4	134.7	129.1	125.6
Slovakia	100	93.4	133.5	119.3	118.3

*Preliminary data

Source: Szabó and Milella, 2006; FVM, 2006

The above table reveals that, compared with the 2000 database, substantial changes occurred in each of the mentioned countries in the post-accession period. Using the 2006 data allows these countries to be divided into two groups:

1. Poland and the Baltic countries have doubled real agricultural incomes per AWU.,
2. Hungary, Slovenia, the Czech Republic, and Slovakia, on the other hand, have done much worse (18–36 %).

With this particular indicator change is determined by real income dynamics and labour input. In 2005, among the EU-25, Hungary followed only the Czech Republic when it came to the decrease in agricultural labour input (Szabó and Milella, 2006). It must be stated that these data are not returns-oriented, meaning the earnings are not actual realized incomes. This is because the calculation supposes that farmers actually receive their share of annual subsidies in each given year. Unfortunately, because of Hungarian institutional weaknesses this supposition was hardly accurate.

Better than average weather conditions and an expanding subsidy system contributed to the increase in calculated agricultural earnings. In 2004, however, payment of area-based subsidies was delayed until 2005. This meant that farmers were only able to achieve part of this surplus.

Clearly most of this surplus was achieved by large-scale cereal-producing enterprises enjoying generous CAP support. Other sectors and smaller farms (especially private ones) did not achieve such rosy financial results.

Notably preliminary 2006 data indicate that in Hungary 76% of the *net entrepreneurial* income (HUF 337 billion) came from product subsidies (HUF 90 billion) and other subsidies (HUF 167 billion) (FVM, 2006c).

FADN data show the following pattern for per hectare pre-tax income regarding agricultural area: The mean figures for the 2001-2003 and 2004-2005 periods reveal that farms boasted a twofold increase. This includes 66-percent growth for private farms and more than a threefold rise for agricultural enterprises. Here several factors must be taken into account. One factor was expanding subsidies, but the base figures were also rather small and in recent years some of the poorly performing farms have ceased operation.

Weakness in sustaining and retaining agricultural capacity is also revealed by full-time agricultural employees' *net earnings* which have not yet caught up to those of workers in other sectors. Data published from the first half of the current year suggest that their income lags behind the *national average by about 30 percent* (KSH, 2006f).

Lastly it is pertinent to mention that *the volume of agricultural investment* falling within the CAP framework has perceptibly decreased since 2004. This has had a detrimental effect on agricultural employment by hindering essential sectoral improvements. (AKI, 2006a; Keszthelyi, 2005; KSH, 2006i).

For all FADN farms the average net investments per hectare of agricultural area during 2004 and 2005 reached only 30 percent of the previous three years' average. Although agricultural enterprises only suffered a 10% decline, the negative private farm figures suggest that the erosion of assets started in 2004–2005 (Keszthelyi, 2006).

As for 2007, one need only read the following AKI forecast: “As an overall assessment, it can be stated that the restrictive measures effectively siphon off the 2007 increment of subsidies originating from the Union ... collective enterprises will be forced to bear the brunt of excess burden (AKI, 2006a).”

Conclusions

1. Despite the previous three years of good performance, Hungarian agriculture's output level (as reflected in the 2001-2005 average) still lagged behind the 1996-2000 period.
2. In the pre-accession period, agricultural policies did not properly deal with the sector's competitiveness issues nor with its role in sustaining and retaining capacity:
 - Modernizing farm animal buildings and technologies did not occur. Nor did the modernization of plantations.
 - Basis agricultural infrastructure (transport, storage, and freezing capacities, etc.) was not properly developed.
 - Community and business marketing activities are completely inadequate.
 - Building horizontal and vertical co-operation networks among agricultural producers progressed at a very slow pace.
 - Private farms' economic importance and social role regarding employment were neglected.
3. The overall impact of EU accession on Hungarian agriculture cannot yet be properly evaluated. The following tendencies seem to clear:
 - Compared to previous years, from 2004-2006 the balance between the two major sectors substantially shifted towards crop production. Contributing to this were a GOFR-crop focus linked to CAP subsidies, plus good weather conditions.
 - Other than for sheep, major animal stock was significantly depleted and this occurred chiefly on private farms.
 - The foreign food trade positive balance steeply declined, especially for animal products. Contributing to this were factors outlined above, plus increasing market competition.
 - Information on the extent of agriculture income growth and its distribution among sectors and enterprise groups is currently only accessible through FADN surveys conducted by the Research Institute of Agricultural Economics.
 - Despite overall income growth across the entire sector, the net investment performance plus agriculture's sustaining and retaining capacity deteriorated during the post-accession period. This is particularly problematic for the Northern and Southern Great Plain regions, since there both the ratio of persons employed in agriculture and the unemployment rate greatly exceed the national averages.
 - An obvious future need is the creation of a comprehensive national agricultural *and rural development strategy*. This should not be replaced by the so-called National Rural Development Strategy that serves the sole purpose of drawing upon EU financial resources.

Acknowledgement

In compiling this study I owe a debt of gratitude to my university colleagues, Professors Dr. István Gonda, Dr. Sándor Mihók, Dr. Zsolt Nemessályi, and Dr. Péter Pepó for their professional assistance.

Of the experts from the Research Institute of Agricultural Economics, I received help first and foremost from Department Heads Mr. Imre Bognár and Mr. János Kartali.

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