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QUO VADIS HUNGARIAN AGRICULTURE? LESSONS FROM EU ACCESSION

QUO VADIS WĘGIERSKIE ROLNICTWO? LEKCJA Z PRZYSTĘPOWANIA DO UNII EUROPEJSKIEJ

Key words: agricultural changes, production effectiveness, alternative strategies

Słowa kluczowe: zmiany rolne, opłacalność produkcji, strategie alternatywne

Abstract. The agriculture and food industry have become the most problematic sector for most new members of the European Union (EU), including Hungary. This situation has arisen due to economic and social changes over the last 15 years. Its proportion has decreased significantly in both the production process and employment; however, almost 20 per cent of the Hungarian population is still involved in agriculture. This study examines the main agricultural processes on the basis of data from the General Agricultural Census (2010), compares the results with Poland and determines why Polish agriculture can be considered as a winner of EU enlargement and what Hungary has to learn about its success. New requirements in agriculture raise the necessity to determine possible farming alternatives, which provide a viable option for its participants. The study shows the effects of change in the agricultural sector in Hungary, the structure of farms, the profitability of agricultural producers and possible farming strategies, with special attention paid to the economic possibilities and consequences of the decreased use of artificial chemicals.

The study refers to the plenary session of the Polish Association of Agricultural and Agribusiness Economists held by the author in Lublin, in 2005.

Introduction

The agriculture and food-industry have gone through a radical change in Central-European countries during the last twenty years. This situation is a result of socio-economic transition, which includes property structure, land usage, production structure and internal rates.

The role of agriculture, the food industry and forestry radically decreased during the 1990's. In 1995 their share of GDP was 10.9% (agriculture: 6.4%), in 2000 7.7% (agriculture: 4.0%) and in 2011 8.3% (agriculture: 4.5%).

Despite this decreasing tendency, agriculture maintained a positive balance in international trade. From all the branches of production only agriculture and the food industry managed to maintain a surplus and positive national financial balance. At the beginning of the socio-economic transformation in 1990, the share of agriculture and food industry amounted to 24.9% from export and 8.5% from import. This rate decreased to 8% from export and 3.2% from import in 2000 and was 7.2% from export and 3.5% from import in 2012. For Hungary, the main agricultural trading partners are the first European member countries (EU-15) and the V4 countries (V4). After EU accession, a strong growth in market expansion could be observed, but the starting base was relatively low. However, the value of growth steadily increased and market relations were less affected (Tab. 1). Between 2000 and 2011, the agro-trade balance of Hungary in relation to EU-15 countries was positive but showed a decreasing tendency. However, export dominance could be maintained. The ratio was EUR 2.5 million in 2000 and decreased to EUR 1.3 million by 2011.

The competitiveness of agricultural trade of new member states was examined using the Herfindahl–Hirschman-index (HHI) and the Balassa-index. It was observed that export structures were equally sensitive to relative costs and the differences between non-price factors [Fertő, Hubbard 2005, Jámor, Török 2012, Vásáry 2012]. The authors stated that competitiveness depended on

Table 1. Export growth rate in country groups in case of total export (extra EU-27)*
*Tabela 1. Tempo wzrostu całkowitego eksportu w grupach krajów (ekstra UE-27)**

Export growth rate in period 2001-2011/ <i>Tempo wzrostu całkowitego eksportu w latach 2001-2011</i>											
In EU-15 relation/ <i>W relacji do UE-15 [%]</i>											
Country/ <i>Kraj</i>	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Czech Rep./ <i>Czechy</i>	41	100	18	58	43	50	50	50	25	18	34
Hungary/ <i>Węgry</i>	58	100	100	86	47	32	52	25	17	16	44
Poland/ <i>Polska</i>	46	74	66	76	61	58	69	50	10	59	44
Slovakia/ <i>Słowacja</i>	36	3	0	52	36	11	29	12	-100	-20	21
In V4 relation/ <i>W relacji do V4 [%]</i>											
Country/ <i>Kraj</i>	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Czech Rep./ <i>Czechy</i>	49	100	5	44	42	61	45	44	67	63	55
Hungary/ <i>Węgry</i>	-3	100	-26	22	17	35	14	21	16	39	38
Poland/ <i>Polska</i>	9	32	6	14	16	21	9	19	19	10	12
Slovakia/ <i>Słowacja</i>	60	88	48	47	56	75	76	61	100	94	75

* For reasons of simplicity and applicability, the extreme values were indicated as 100% and -100% in some cases/*Ze względu na ułatwienie skrajne wartości zostały oznaczone jako 100% i -100% w niektórych przypadkach*

Source/*Źródło*: Vásáry 2012

many non-price factors. In the case of Hungary, a major market loss could be observed in relation to V4 countries and other EU members. Juhász and Hartmut [2012] also reached similar conclusions.

As Hungary's position was weakening, it was important to focus on the natural processes that were characteristic in the investigated decade of Hungarian agriculture.

Due to the socio-economic transformation, the former property structure (large production collectives, state farms) was transformed into smaller units in the early 1990's. Nearly 1350 production collectives and 130 state farms were liquidated and divided among private owners and a structure of small farm ownership developed that was mainly involved in cash-crop production. 8382 enterprises, 958 534 private farms and 835 617 other households – called non-farms – were interested in agricultural activities in 2000. About 270 000 farming units were authorized for area-based subsidies in 2004. This significantly improved the situation of producers and led them to focus on arable crop production.

Before Hungary's EU accession, the ratio of animal husbandry of agricultural gross production was about 40-45% and the ratio of agricultural services was about 7%. By the end of the decade the ratio of crop production and horticulture exceeded 60% (32.2% – 6.1% – 61.7% in 2011) [Takács-György 2008, *A Magyar...* 2012].

Cereals and oil-seeds are dominant (30-33%) in Hungarian agro-trade exports. Typically, materials and primary processed products represent the export base, while the rate of highly processed products increases the import of agro-products.

Material and methods

The aim of the study was to examine the main changes that took place in Hungarian agriculture after the millennium with special regard to the period after EU accession. Moreover, to compare Hungarian and Polish processes, emphasis was placed on the branches in which changes took place from the perspective of international competitiveness. Moreover, the paper aimed at highlighting the situation in which Polish agriculture is a winner and Hungary a loser of EU accession from the perspective of Polish – Hungarian bilateral trade. The following sources of data were used: the Hungarian General Agricultural Census [2010], the database of the Ministry of Rural Development, and EUROSTAT as a secondary database. Besides longitudinal analysis, tracking analysis was

also carried out to characterize the tendencies of property structure, land use, natural processes of animal husbandry and crop production between 2000 and 2010. Data regarding product groups were available for the Polish – Hungarian agro-trade period of 2000-2011.

Results

In 1994, a census was conducted in agriculture; the results show that out of 3.5 million households, some 1 501 000 could be considered agricultural producers. The number of “farm-sized households” declined significantly during the transformation, while the amount of land used by them increased greatly (cultivated land by 33%). As a result of privatization, 95% of land fell into private hands. The old and new owners rented their inherited lands or part of their lands to transformed collectives, farm businesses or the small but growing number of family farms. In Hungary, a growth in the number of family farms was observed, their role being strengthened by cash-crop production (The number of registered family farms was about 35 000 in 2002). Land use went through a great change with over 93% of land users cultivating only 11.5% of arable land in 2003, while 0.8% of farms cultivated 67.5% of land. 3460 thousand hectares belonged to companies, agricultural enterprises and co-operatives, and 3953 thousand hectares to private farmers. It can, therefore, be observed that the rate of rented land was very high. This led to several problems concerning profitability [Baranyai 2008]. The proportion of individual farmers using more than 50 ha was slightly higher than 1% at that time, but the area cultivated by them was nearly 40% of the total land cultivated by individual farmers. The average area used by agricultural corporations was 503 ha. As far as production activities are concerned, 28% of corporations and 63% of individual farms dealt with animal husbandry. 72% of the enterprises carried out crop production only and, at the same time, their proportion increased and specialization could be observed. In comparison to the year 2000, the number of stock farming and pig-breeding enterprises decreased by 16%. The rate of decrease was 40% and 10% in the case of individual farms, respectively.

Ten years later the number of agricultural enterprises had not changed significantly but there was a radical decrease in the number of private holdings (Tab. 2).

Table 2. Number of agricultural enterprises and private holdings, by production profile – Standard Production Value (2001-2011)

Tabela 2. Liczba przedsiębiorstw i prywatnych gospodarstw rolnych, podział ze względu na profil produkcji – Standardowa Produkcja (2001-2011)

Standard production value/ <i>Produkcja standardowa</i> [thous. EUR]/ [tys. euro]	Agricultural enterprises/ <i>Przedsiębiorstwa rolne</i>				Private holdings/ <i>Prywatne gospodarstwa rolne</i>			
	animal husbandry/ <i>hodowla zwierząt</i>	crop production/ <i>zbiór plonów</i>	mixed/ <i>mieszany</i>	total/ <i>razem</i>	animal husbandry/ <i>hodowla zwierząt</i>	crop production/ <i>zbiór plonów</i>	mixed/ <i>mieszany</i>	total/ <i>razem</i>
< 1.9	30	1 731	109	1 870	92 261	225 214	58 541	376 016
1.9-14.9	82	1 069	387	1 538	31 551	40 339	89 362	161 252
15.0-49.9	54	747	540	1 341	541	8 487	13 138	22 166
50.0-499.9	207	1 013	1 486	2 706	252	2 682	4 906	7 840
500.0-1499.9	89	90	580	759	22	23	114	159
1500.0-2999.9	33	4	215	252	3	3	4	10
3000.0≤	20	–	120	140	1	–	2	3
Total/Razem	515	4 654	3 437	8 606	124 631	276 748	166 067	567 446

Source: own study based on International trade in service 2012

Źródło: opracowanie własne na podstawie International trade in service 2012

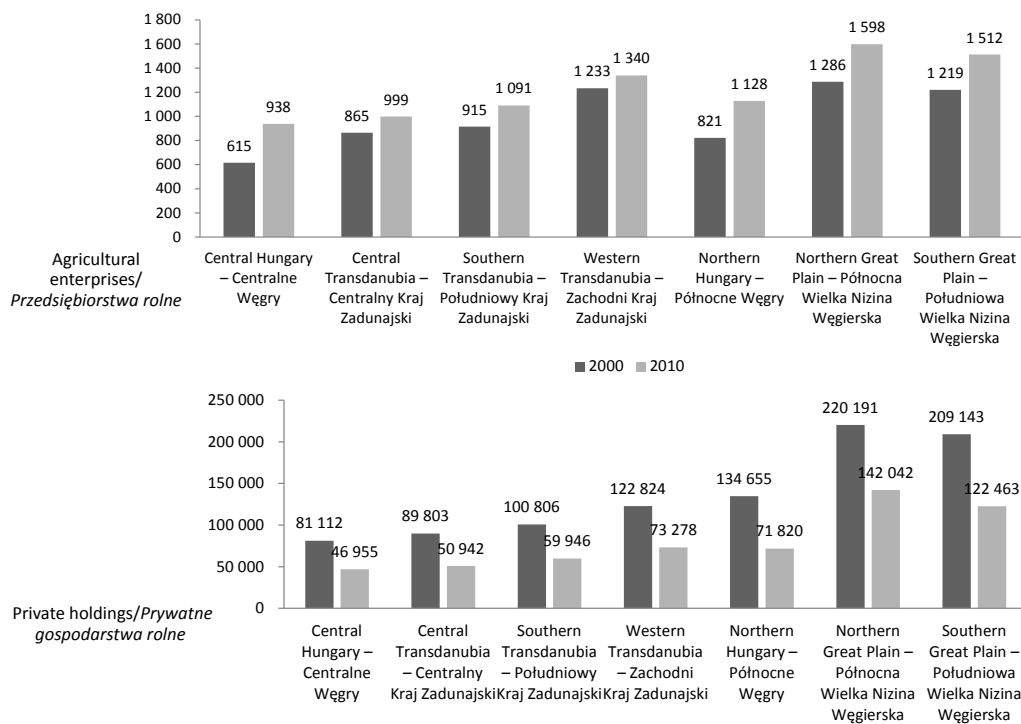


Figure 1. Changes in the number of holdings using land area by group of legal forms and region (2000-2010)
 Rysunek 1. Zmiany w liczbie gospodarstw domowych uprawiających rolę, podział na grupy prawne i regiony (2000-2010)

Source: see tab. 1

Źródło: jak na tab. 1

Differences in the number of agricultural enterprises could be observed among the seven Hungarian statistical regions and private holdings. The majority of agricultural enterprises was operating in the Great Plain and in West Transdanubia. Their number increased by 23 % (from 6 954 to 8 606). However, the number of private holdings decreased in every region, from 958 thousand to 567 thousand, which is a 40 % decrease (Fig. 1). The number of farmers who could be subsidized in 2010 had not exceeded 210 thousand, while this number amounted to 170 thousand in 2012.

As mentioned previously, the role of animal husbandry and animal products suffered a serious decrease in the gross production of agriculture. The number of agricultural enterprises keeping animals decreased by 11% (from 2000 to 2010), and their number amounted to 2188. Only 6% (515) of enterprises dealt with animal husbandry, 54% (4654) operated as crop producers, a remaining 40% (3437) had a mixed production structure. The number of animals keeping private holdings was almost halved during the evaluated period of 10 years (from 731 thousand to 379 thousand). The share of animal keeping private holdings was 19.8% (139742), crop producing 50.8% (357682 db) and with a mixed profile 29.4% (207233 db). Over 435 thousand (61.8%) of private holdings produced only for self-consumption purposes, 19.6% (138 thousand) sold their surplus and only 18.6% (130 thousand) produced for the market.

Before the transformation, employment of an American-style (based on large-sizes and the use of highly productive machinery) cooperative system and state farming system, supplemented by home production, produced impressive results. The yearly produced crop surpassed domestic need. For example, potato production decreased from 3001 thousand tonnes to 600 thousand tonnes from 1960 till 2011 and the share of potatoes from arable land is less than 0.6% today (Fig. 2).

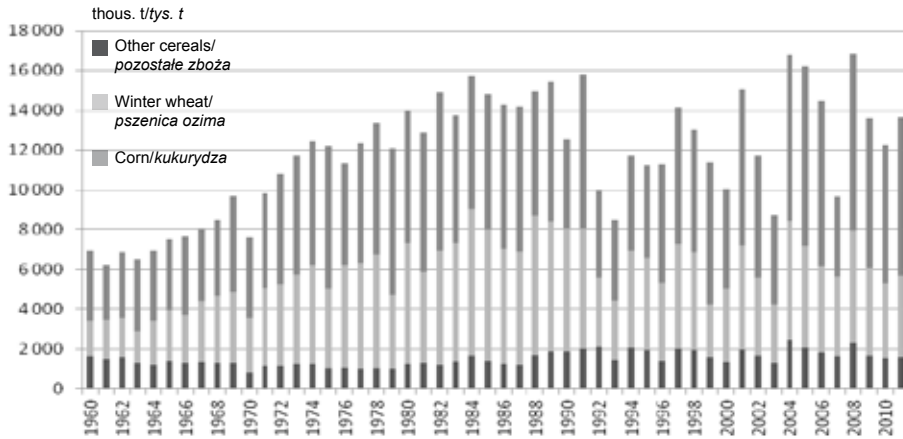


Figure 2. Cereal production in Hungary (1960-2011)
Rysunek 2. Produkcja zbóż na Węgrzech (1960-2011)

Source: see tab. 1

Źródło: jak na tab. 1

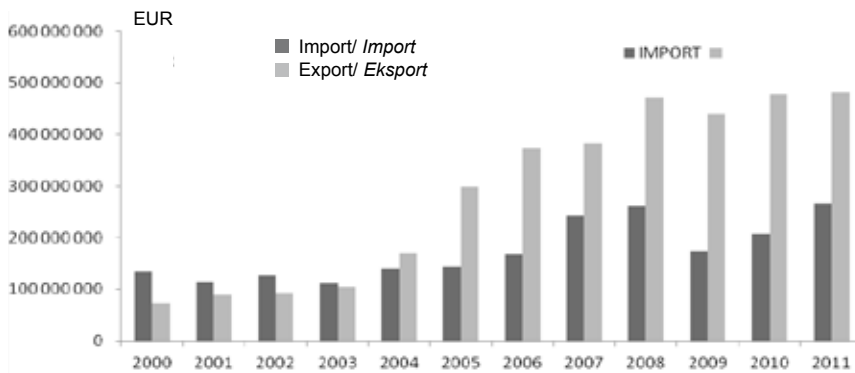


Figure 3. Agro-trade balance between Poland and Hungary (2000-2011)

Rysunek 3. Agro-bilans między Polską a Węgrami (200-2011)

Source: own study based on *International Trade...* 2012

Źródło: opracowanie własne na podstawie International Trade... 2012

This decreasing tendency was characteristic and declined radically in 1970. As a result, Hungary is now a net importer of potatoes, mainly from the Netherlands and Poland. Beside the potato, sugar beet is also a loser of the last decades. Its production in the 1980s slightly increased, mainly due to more intensive technologies (drilling machines, species, plant nutrition), the produced yield had not decreased while crop land halved from 1960. A decrease can be observed in sugar beet volume after the socio-economic transition. The reason for this was the return of the privatization process. As mentioned previously, the Hungarian agro-trade balance showed a decreasing value. Before EU enlargement, Hungarian agro-trade with Poland had a positive balance. After 2004, Poland became a net exporter to Hungary and the balance increased. Hungary saw itself as a loser in the scope of agricultural bilateral connection (Fig. 3).

Conclusions

Nearly ten years after EU enlargement, the winner and loser countries can be differentiated from an agricultural perspective. Although Poland and Hungary had different historical backgrounds – mainly concerning property structure – the economic and social environment remained the same during the investigated decade. In spite of many similarities, the two countries' agricultural development differed. Taking the decreasing gross output of Hungarian agriculture into consideration, the livestock number and worsening trade indicators, it can be stated that Hungary is not the winner in this comparison. Certain general questions concerning Hungarian agriculture remain to be answered.

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Streszczenie

Przemysł spożywczy oraz rolny stały się najbardziej problematycznymi sektorami dla większości nowych państw członkowskich Unii Europejskiej, wliczając w to również Węgry. Wiąże się to z ekonomicznymi i socjalnymi zmianami, które miały miejsce w ostatnich 15 latach. Rozmiar tych sektorów zmniejszył się znacząco, zarówno jeśli chodzi o proces generowania zysków, jak i pod względem liczby miejsc pracy. Mimo to, prawie 20% populacji węgierskiej nadal w mniejszym bądź większym stopniu jest związana z rolnictwem. Przedstawiono główne procesy rolne zaistniałe w pierwszej dekadzie XXI wieku, bazując się na danych z Powszechnego Spisu Rolnego (2010). Dane sektora węgierskiego porównano z polskimi, oceniając dlaczego polskie rolnictwo może być uznawane za sukces rozszerzania UE oraz, z których polskich doświadczeń może czerpać rolnictwo węgierskie. Nowe wymogi w rolnictwie stwarzają potrzebę określenia alternatywnych sposobów uprawy roli dostępnych dla indywidualnych gospodarstw, co stworzy opłacalne warunki dla sektora rolnego. Badania wskazały skutki zmian dokonanych w węgierskim sektorze rolnym, strukturę gospodarstw rolnych, rentowność sytuacji procedur rolnych oraz dostępne strategie uprawiania roli, z wyszczególnieniem możliwości ekonomicznych oraz konsekwencji ograniczonego stosowania środków chemicznych.

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