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Farm structure and competitiveness in the Hungarian agriculture

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ABSTRACT

After the political, economic and social transformation in 1989-1990, the farm structure in Hungary became undoubtedly more diverse than earlier. The new farm structure is radically different from the characteristics of its main competitors, mainly of other EU member states. The past two decades after the transition was a period long enough to appreciate the characteristics and the main changes in the farm structure, so the current relevance of this topic is unquestionable. Viability, subsistence and competitiveness are significant concepts which could be measured by the profitability of the agricultural holdings. It is very important to define the main criteria of viability, subsistence and competitiveness but we should not forget the multifunctional role of agriculture as this could solve very important challenges, especially in maintaining the rural population and helping their livelihoods.

Key words: transformation, farm structure, competitiveness, profitability, sustainability

INTRODUCTION

The political, economic and social transformations that have taken place in the Central- and Eastern-European countries in the 1990s have also resulted in important changes in the Hungarian agricultural economy: the structure of land use and land ownership has changed, the cooperative farms have been broken up and their place has been taken by the private economic organisations and individual farms. The transition and the transformation process is examined in a vast literature (e.g. Varga et al., 1995, 1997; Burgerné et al., 1999, 2003; Dorgai, 2004, 2008; Illner – Andrle, 1994; Blanchard, 1997; Kitschelt, 1999; Gill, 2002; Karadeli, 2004; Pop-Eleches, 2007; Cerami, 2009), but the effects of the structural change of the Hungarian agricultural economy on competitiveness has been neglected.

In Hungary the land ownership and farm structure have changed radically three times during the last 60 years. The first land reform took place during 1945-1948 when small-scale individual farms and relatively large state-owned farms were created, based on 15% of the arable land. The land reform started with the nationalisation of land and followed by land distribution to more than half a million poor peasants of 5 hectares of even smaller land areas.

The second land reform, the so-called collectivisation, happened when the individual farmers had been forced to join cooperative farms. This process was finished by 1962, when 90% of the total arable land was occupied by large-scale farms, cooperatives and state owned companies. After that period due to the so-called "economic reform" the agricultural policy included more and more market oriented factors and rules.

The third land reform took place in the 1990s, when the structure of properties and land use was

radically transformed during the political and economic transition period (Dorgai et al., 2004). The compensation and privatisation affected almost three quarters of the whole agricultural area, about 5.6 million hectares of agricultural land were distributed to the ownership of 2.6 million private persons.

An extremely fragmented, bipolar farm structure formed in which the number of small individual farms is disproportionately high. The size of individual farms is highly variable: the number of individual farms which cultivate only 1-2 hectares is very high (although it has decreased in recent years) and those which cultivate 50-100 hectares or more are still few. During recent years the number of private farms which cultivated 50-100 hectares has shown a slight increase but the utilised area is still very low. It means that in Hungary a slight differentiation between farms has started, and several non-viable holdings have begun a moderated land concentration in the last two decades.

Consequently, an organic development of the Hungarian farm structure and organisational system of agricultural production was not possible in the last 60 years, and this can constitute an impediment for the improvement of competitiveness.

MATERIAL AND METHODS

Firstly, the paper tries to identify the significant changes in the Hungarian farm structure after transition and Hungary's accession to the EU. Secondly, it examines the main profitability indicators based on the FADN database and tries to show a connection between farm size categories and the results of these indicators. Panel data were used and the results of 814 agricultural holdings during this period were examined. Based on the results, the return on total output indicator presents a significant connection between the farm size categories and the profitability of farming.

RESULTS AND DISCUSSION

The changes resulted in Hungary in the dominance of the private ownership of land (83%) which has not changed substantially in the last decade. Land ownership and land use are separated from each other and both are characterised by fragmentation. Amongst the various forms of agricultural holdings, the individual farms and the corporate farms predominate, which show opposite trends in terms of their numbers and land use.

Table 1. The number and distribution of area in the agricultural holdings in Hungary (2000, 2010)

Agricultural holdings	Holdings engaged in agricultural activities			
	number (1000 bit)	rate,%	area, (1000 ha)	rate, %
2000				
Farms in total	966,9	100,0	6394,1	100,0
from this: corporate farms	8,4	0,9	3779,8	59,1
individual farms	958,5	99,1	2614,3	40,9
2010				
Farms in total	576,0	100,0	6533,8	100,0
from this: corporate farms	8,6	1,5	3822,4	58,5
individual farms	567,4	98,5	2711,4	41,5
Index: 2000 = 100%				
Farms in total	59,6	-	102,2	-
from this: corporate farms	102,4	-	101,1	-
individual farms	59,2	-	103,7	-

Source: General Agricultural Census 2000; General Agricultural Census 2010.

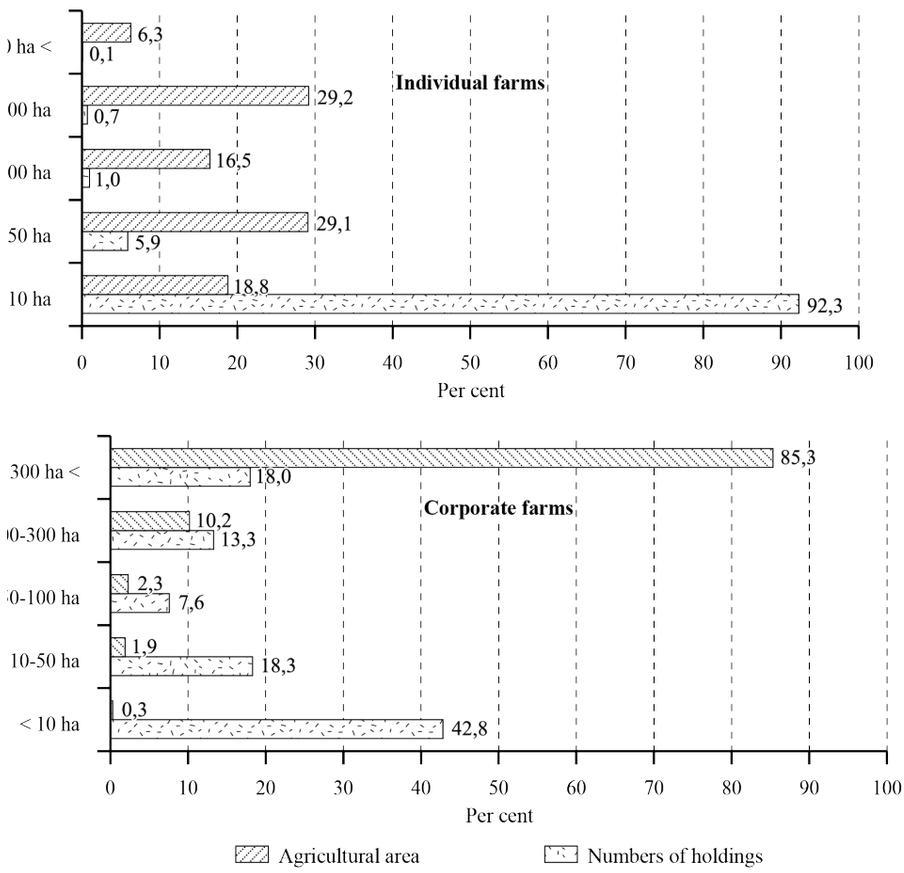
The majority of the individual farms cultivate only 10 hectares and 90% of them occupy less than 1 hectare. The majority of the corporate farms cultivate more than 50 hectares and there are many farms which cultivate more than 300 hectares. From the point of view of the future and the quality of farming the twin poles of land use is disadvantageous.

The number of agricultural holdings decreased by nearly 40% points in the examined period while the utilised agricultural area did not change significantly[1]. The number of corporate farms has shown a modest increase of 2% points in this period, but there was a significant decline in the number of individual farms, which decreased by 40% points over the past ten years (Table 1).

[1] In 1991 only 2.6 thousand corporate farms and 1395.8 thousand private farms operated in Hungary.

The number of corporate farms (mostly the legal successors of the former large-scale farms) compared to the total number of farms is quite low but their proportion by land use is around 60%. The private farms which account for the majority of agricultural holdings (98.5%) cultivated 41.5% of the agricultural area in 2010. The land use in the individual farms, the distribution based on farm size categories, in addition to a strong concentration, is very unbalanced (Graph 1).

In 2010, 92.3% of individual farms – a little more than one-fifth of their whole agricultural area – occupied less than 10 hectares of land. There is also a dominance of private farms under five hectares and nearly three-quarters of them cultivated less than one hectare agricultural land in Hungary. The farms between 10-100 hectares cultivated 45.6% of the whole agricultural area. During recent years,



Graph 1. The characteristics of the farm structure in the individual and the corporate farms in Hungary in 2010. Source: General Agricultural Census, 2010.

the territorial expansion of farms between 100-300 hectares has increased; they used 29.2% of the whole agricultural area. In terms of land use, individual farms have started a modest concentration in recent years but this process is only the first step towards the final result.

The number of corporate farms is relatively evenly distributed between farm size categories, while the vast majority of land use belongs to the holdings over 100 hectares. The land use of corporate farms over 300 hectares amounted to 85.3% of the whole agricultural area. Thus, there is a very extreme field in both forms of agricultural holdings which indicates the separation and concentration by land use.

The examination of the profitability indicators

Three profitability indicators were examined between 2003 and 2010 and the source of data is the Hungarian FADN system. This system consists of circa 1900 sample farms (1920 farms in 2010). The sample represents more than 106 thousand agricultural holdings over 4 thousand euro Standard Output[2] (SO). The 106 thousand farms cultivated 93% of the total agricultural area used by all farms that were registered in the framework of Farm Structure Survey 2007 and produced 90% of total SO. The Hungarian FADN makes accrual accounting not only for corporate farms but also for individual farms. It means that also individual farms have calculated balance sheets and profit and loss statements.

The profitability indicators are calculated in the following ways:

$$\text{Return on total output (\%)} = \frac{\text{income before taxes}}{\text{total output}} * 100$$

$$\text{Return on assets (\%)} = \frac{\text{income before taxes} + \text{interest paid}}{\text{liabilities}} * 100$$

$$\text{Return on net worth (\%)} = \frac{\text{income before taxes}}{\text{net worth}} * 100$$

The profitability of individual and corporate farms can not be compared directly, because individual farms do not account the labour of family members as wage costs. Part of the personal income of family members working in the individual farms appears in the accounting as the result of the farming activity. Comparability can be achieved only by correction during which identical wages are assigned to the same workload in both sectors. Comparing the profitability of individual and corporate farms, we can conclude that individual farms will be competitive only if they are able or willing to keep their labour costs and the consumption of their family members at a low level (Keszthelyi – Pesti, 2012). At present, no attempts have been made to compare the profitability indicators of the two economic groups. The focus was placed of the relationship between farm size categories and the results of profitability.

Table 2 summarises the main profitability indicators in the individual farms and corporate farms between 2003 and 2010. As we examine the results of the individual farms in 2003, the indicators were only positive in the case of the holdings over 50 hectares so it can be assumed that there is a relationship between the farm size categories and the profitability. In 2010, the profitability indicators have significantly improved in the examined private farms. The greatest improvement is shown in the "return on total output" indicator.

A highly unbalanced picture has emerged in the corporate farms in the same period; however. Typically the agricultural holdings over 50 hectares farm size have performed much better (Table 4).

It was assumed that there is a connection between the farm size categories and the results of the main profitability indicators. To demonstrate this hypothesis, a correlation analysis was made. Based on the results, it can be suggested that there is a medium-strong relationship between farm size categories and the indicator of return on total output. The changes in the profitability indicators between farm size categories are represented graphically in Graph 2 and 3.

The correlation analysis has showed a medium-strong connection between farm size catego-

[2]Standard output is a standardised production value related to a unit of agricultural production (one hectare of land or one livestock unit generated in usual weather and production conditions). Standard Output includes sales, farm use, farmhouse consumption and the value of changing of stocks in the case of main and by-products as well. It does not include any direct or other subsidies and also the value of organic manure (Keszthelyi – Pesti, 2010).

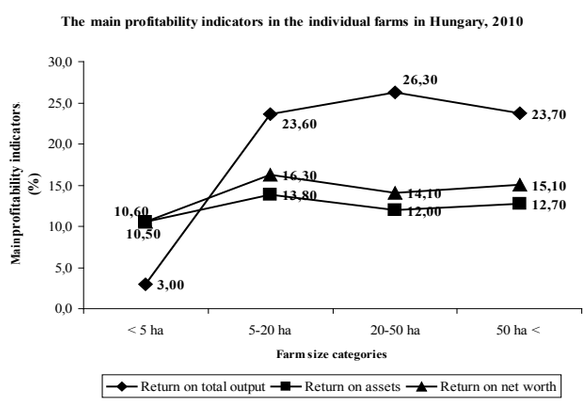
ries and the return on total output in the individual farms, the correlation coefficient amounted to + 0.58. The correlation coefficient was + 0.30 by the return on assets, and the coefficient was a little bigger, + 0.44, by the return on net worth. In the corporate farms, the correlation coefficient has presented a more confused picture. The correlation coefficient was + 0.47 by the return on total output, meaning, that it is also a medium-strong relationship as we have seen in the private farms. The coefficient was negative (- 0.03) by the return on assets in 2010 and by the return on net worth the indicator was + 0.29. Based on these results it can be presumed that the farm size significantly affects the profitability of farming and for this reason the competitiveness too, but this statement requires more thorough research[3] and needs more time.

[3] This study does not include a sectorial examination but presumably there is a significant scattering between the sectorial results.

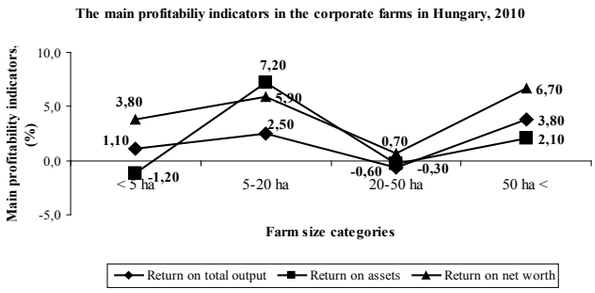
Table 2. The changes in the main profitability indicators

Indicators	Individual farms: size categories (%)			
	<5 ha	5-20 ha	20-50 ha	50 ha <
	2003			
Return on total output	-2,60	-6,50	-8,40	2,30
Return on assets	-6,90	-5,10	-1,10	3,90
Return on net worth	1,80	0,00	1,10	4,90
	2010			
Return on total output	3,00	23,60	26,30	23,70
Return on assets	10,50	13,80	12,00	12,70
Return on net worth	10,60	16,30	14,10	15,10
Indicators	Corporate farms: size categories (%)			
	<5 ha	5-20 ha	20-50 ha	50 ha <
	2003			
Return on total output	2,50	-15,10	-9,10	-2,80
Return on assets	2,00	-19,30	-25,60	-10,10
Return on net worth	5,40	-13,40	1,80	0,20
	2010			
Return on total output	1,10	2,50	-0,60	3,80
Return on assets	-1,20	7,20	-0,30	2,10
Return on net worth	3,80	5,90	0,70	6,70

Source: Hungarian FADN data base (panel data), 2012.



Graph 2. The main profitability indicators based on farm size categories in the individual farms in Hungary in 2010. Source: Hungarian FADN data base (panel data), 2012.



Graph 3. The main profitability indicators based on farm size categories in the corporate farms in Hungary in 2010. Source: Hungarian FADN data base (panel data), 2012.

CONCLUSION

Hungarian agriculture was a prosperous sector of the national economy before the transition. The political, economic and social transition resulted in a rapid and radical workforce loss in the whole economy: 1.7 million workplaces were lost in the early 1990s, mainly in the productive sectors. Agriculture discharged the largest number of employees (650 thousand people) and between 1990-2010 the sector's annual share in employment has fallen by three quarters, from 17.5% to 4.5%. The rearrangement of the farm and property structure, the reduction in the technical and technological standards, the privatisation of land and the loss of its important markets made it vulnerable.

More than twenty years have elapsed since the radical political, economic and social transition in Hungary, but the role of agriculture in contributing to an increase in the GDP is still a current question, as well as solving the problems of employment especially in the rural areas, and ensuring a secure livelihood for the farmers. There is also an important question regarding what kind of economic groups could meet the criteria of viability, subsistence and competitiveness and the multifunctional role of agriculture.

In Hungary, we tend to look at the small farms which are not significant from the point of view of the agricultural performance, but it is not true. The small farms contribute to a secure livelihood and a modest income for many families. On the basis of the profitability indicators it is not clearly evident that the smaller farms' results are much worse and the bigger agricultural holdings' much better. The small family farms are as important as the corporate farms which cultivate more than hundreds of hectares. In the future, the Common Agricultural Policy should establish a farm structure in Hungary, in which there will be a healthy balance between agricultural holdings and activities of different sizes and types of farms.

In the last two decades, neither the government nor the agricultural policy showed significant improvement in the organic development of agricultural production. Presently, it is not decided which form of farms will be supported more in the future: the smaller private farms or the bigger corporate farms. This question should be answered as soon as possible.

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Struktura farme i konkurentnost u mađarskoj poljoprivredi

SAŽETAK

Nakon političkih, ekonomskih i društvenih promjena od 1989.-1990. struktura farmi se u Mađarskoj bez sumnje značajno promijenila u odnosu na prethodno razdoblje. Nova struktura farme bitno se razlikuje po svojim obilježjima od strukture farme glavnih konkurenata, uglavnom ostalih zemalja članica EU. Protekla dva desetljeća nakon tranzicije trebala su biti dovoljna da se procijene karakteristike i glavne promjene u strukturi farme, tako da je trenutna važnost teme neupitna. Održivost, opstanak i konkurentost predstavljaju važan koncept koji bi se mogao mjeriti profitabilnošću poljoprivrednih posjeda. Vrlo je bitno odrediti glavne kriterije održivosti, opstanka i konkurentosti, no ne smijemo smetnuti s uma multifunkcionalnu ulogu poljoprivrede, budući da ona može riješti važne izazove, posebice u zadržavanju ruralne populacije i pomoći njihovim domaćinstvima.

Ključne riječi: transformacija, struktura farme, konkurentnost, profitabilnost, održivost