Profitability and Cost-Efficiency in Hungarian Agriculture in the 1930s

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In the period between the two World Wars agriculture formed the primary sector of the Hungarian economy. The changes which followed the First World War, with the break-up of the Dual Monarchy and the loss of important territorial possessions, wrenched the Hungarian economy, and with it agriculture, out of an easy and heavily protected situation, and created a glaring contrast between productive capacities geared to the demands of the old Monarchy and the now more slender demands of the new market. Throughout the inter-war years the level of development of Hungarian agriculture remained too high for this market, yet still backward in comparison with other European economies.

Hungarian industry, like agriculture, also lost its former structure, since its most labour-intensive sectors were located in those regions that were now no longer part of Hungary. This meant that the economic prospects for the agricultural population became significantly narrowed, with the result that they became fixed at some 50% of the total population, a situation which by the mid-1930s had created a labour surplus of about 10% in the countryside (on the smaller peasant farms of less than 65 hectares the figure rose to 33%). In economic terms the most important consequences of this were to bring about undesirable cost increases, the devaluation of labour and the upgrading of capital leading to an inevitably low level of development and investment. These factors also determined the possibilities for the further development of the agricultural economy, both in the short and the long term. This situation is well illustrated by two typical data: in the 1930s no more than 2% of the total gross product in the food sector was produced within the integrated structure of the food industry while at the same time machinery of industrial origin represented only 3% of total value in the sector.

However self-evident these economic conditions may have been, contemporary specialists and publicists were not primarily concerned with them. Hungarian agriculture with its labour surplus, insufficient development and low profitability set the consumption of those it supplied at a low level and determined their social position. However, existing social tensions served to conceal the economic interests that had created this situation and maintained it.

To the contemporary observer, Hungarian agriculture was characterised by the existence of large estates of hundreds or thousands of hectares, and of the hundreds of thousands of landless agricultural labourers whose existence was precarious. It was generally believed that the elimination of this imbalance would solve all the problems. That this kind of solution did not lack some economic justification can easily be shown with the help of Laur's cost-regression law; that is if we accept that in a relatively early and primitive phase of economic growth, the productivity of enterprises using mostly human labour will be higher than any other. Such considerations, however, do not prove that this mechanism was effective in Hungarian agriculture in the period under examination. It seems more reasonable to assume that the break-up of the huge landed estates would have increased the immobility of the agrarian population, since the proportion of largely self-sufficient small enterprises would have grown, so decreasing the demand for industrial products which, in turn, would have led to a worsening of the basic economic problems.

Our assumption is, therefore, that the difficulties facing Hungarian agriculture were closely connected with the existing level of development of industry, both in economic and social terms. On the one hand, industry was unable to absorb the inevitably increasing surplus agrarian population, and, on the other hand, it could not provide the technical conditions needed to support population expansion either. A further factor was the particular structure of agriculture, where the newly formed subsistence farms failed to reach the size required, so that there were many types of farming enterprise that subordinated their economic activity to the need to employ and support the labour force available.

These problems form an introduction to the present analysis. Our main object is to describe the general conditions of Hungarian agriculture and then to compare the productivity of small (less than 65 hectares) and the large (over 650 hectares) farms in the most highly developed Trans-Danubian region. The source of the data analyzed here is the volume of statistics compiled at the request of the 14th Congress on Agriculture held in Bukarest in 1929. This volume contains data an agricultural annual balances, the values of which are given in Table I.

It should be noted that this is a so-called mixed table. We fully realize that the appearance of proportions and natural units of measurement together is

TABLE 1

AVERAGE SECTORAL VALUES OF NATIONAL AND TRANSDANUBIAN ANNUAL BALANCES IN AGRICULTURE, WITH CALCULATED VARIANTS

Variables	National		Large estates (over 650 h)		Small estates (under 65 h)	
	Average	V (%)	Average	V (%)	Average	V (%)
Plough-land/% of all cropland	81.77	16.8	79.82	18.2	80.43	16.4
Market garden + vineyard	2.25	160.4	1.44	135.8	4.60	87.1
Meadow + pasture	15.75	83.0	17.70	73.6	14.40	77.2
Grain/% of plough land	48.41	21.4	41.80	14.5	54.04	18.8
Root crops	26.92	35.3	25.21	21.5	22.53	41.1
Fodder	17.11	53.3	22.85	27.9	20.70	41.8
Wheat q/hectare	20.72	36.1	24.46	21.6	18.64	40.0
Rye	13.08	75.9	20.56	37.7	15.26	51.2
Barley	19.18	49.3	24.14	28.8	16.72	56.7
Oats	14.60	67.2	18.00	42.3	13.22	78,6
Maize	34.00	44.0	36.48	34.5	32.58	53.3
Potato	87.64	102.6	123.50	53.1	127.52	61.9
Cattle/standard animal (100 hectares)	29.24	55.9	29.10	38.3	41.34	48.1
Pigs	9.56	85.5	11.44	85.9	8.40	70.2
Total	41.68	57.4	42.82	42.4	51.08	43.7
Working assets/pengö (hectare)	347.48	47.1	380.98	38.4	451.34	42.6
Proportion of plant cultivation within gross produce (%)	54.82	39.6	52.88	26.9	47.11	26.3
Proportion of stock-breeding within gross produce (%)	35.78	46.0	36.09	38.8	45.32	28.1
Total gross income (pengö/hectare)	328.28	40.4	367.06	40.2	367.28	33.8
Wages-output ratio (%)	55.07	49.4	46.09	19.6	60.92	65.0
Total cost (pengö/hectare)	260.58	44.3	333.74	40.3	290.75	49.8
Proportion of plant cultivation within cash income (%)	46.45	73.8	47.96	85.7	39.61	147.1
Total cash income (pengö/hectare)	200.14	61.7	272.06	54.9	208.18	64.6
Total cash payment (pengö/hectare)	139.50	76.4	242.64	62.1	121.56	84.3
Net income (pengö/hectare)	72.74	139.7	18.16	169.7	97.16	162.2
Efficiency /%/gross product	132.52	35.3	110.66	18.6	141.53	51.1

a little unusual; however, we chose this form of illustration in order to present the whole structure better and to facilitate comparisons. With the exception of the indices representing land use and branches of cultivation all the quantities refer to one hectare of land.

No attempt will be made here to give a detailed analysis of the table, since the data are self-evident. We must point out, however, that the dispersion is very wide, and consequently the average values must be handled very carefully. It is important to note that the values for variants in the case of the larger estates are generally smaller than in the other sector, which leads us to conclude that this type of enterprise — over 650 hectares — became better adapted to the economic requirements of the period concerned and, on the other hand, it can be assumed that the small farms (under 65 hectares) reacted to the challenges of the market with a greater variety.

Our main concern here is the question of profitability. We have two indices for that: one represents gross product and the other net income. Let us examine first of all the scope of reference of these indices. Gross product, in modern terms, means gross production value. This includes all the new values created as the result of production or by the different services realized outside the enterprise in the fiscal year in question. The index shows first of all the productive capacity of the individual enterprises or groups of enterprises (which is very important for the national economy) and the extent to which these were able to take their share in the realization of national economic objectives. In other words, we can say that this index represents the ecokomic capacity of the enterprises analyzed. Net income provides a different nind of information, since it reveals the difference between gross product and total costs.

This short description of the two indices reveals a contradiction that proves difficult to solve. Market demands for the products of the enterprises concerned — and generally in the case of agricultural products — were constant or continuously growing. For the market — generally speaking — the conditions under which the production of higher and higher gross incomes (i. e. the gross value expressed in natural units of measurement) is of no direct concern. The market tends to maximize gross income. The contractor, however, within existing technical and market relations (such as the terms of trade between different branches of the economy) strives to maximise his net income, through factors like marginal productivity, seasonal character of production, etc... This dichotomy — which is as old as the multi-sectoral organization of the economy on the part of the state — can be solved only temporarily and with great difficulty. We get a clearer picture, however, if besides the gross product index, we also include the so-called gross income index — that is, the total of wage costs and net income. This new index well represents economic capacity, and the proportion of its individual

elements will indicate profits on the one hand, and the structure of expenditure. Table Two shows these quantities and proportions:

TABLE 2

GROSS INCOMES AND THEIR COMPONENT PROPORTIONS

	Gross income Pengö/hectare	Proportion of wages %	Net income %
Hungary	216.48	66.39	33.61
Large estates (over 650 hectares)	293.52	52.40	47.60
Small estates (under 65 hectares)	274.43	63.89	36.11

The two tables reveal quite clearly that the profitability of these two types of estate was much higher than the national average. What can be said about this national average? In the utilization of agricultural land, Hungary was above the European average with 82% of cultivated land, but in respect of the average yields of the leading products it lagged behind the European levels. There can be no doubt that besides the natural geographical conditions, the extensive form of cereal cultivation was also connected with the low yields. The level of yields in turn was closely interrelated with the technical conditions of production. In the mid 1930s chemical fertilizers represented only 3.5% of all the fertilizers used.

We have already mentioned the low proportion of machinery, and in addition to this it must be pointed out that combustion engines represented only 3% of all the motive power used in agriculture. On the one hand, this increased the oversupply of labour while, on the other, the immobility of agricultural labour was not decreased due to the seasonal character of the work.

All this greatly contributed to the fact that the wages-output ratio remained at 55% of total costs. This was neither numerically lower nor higher than the European average; it must be noted, however, that wages in Hungarian agriculture were much lower than the European average, consequently the 55% wage costs meant a significantly higher actual labour input. The well-known interrelationship between efficiency and productivity means that this situation reflects a low level of productivity.

In order to define gross product and net income more precisely and to find out the real situation of yields, we performed a factor analysis. It is important to note that gross product was closely related to the indices of capital supply, cost levels and money circulation in the first. Net income came into the second factor, together with the efficiency index, in such a way that their

trends proved to be opposite to those of the first factor. We have already referred to a certain dichotomy between the two indices, and it can now be seen that in the 1930s the tendency to maximize gross product was opposed not only to the effort to optimalize net income, but also to increasing efficiency in existing conditions. Since efficiency — as is shown in the fourth and sixth columns of Table I — was mostly connected with the input of human labour, it is self-evident that these economic requirements were opposed to the situation of the whole economic sector.

In order to get a clear picture of the efficiency of production it is very important examine the proportion of the main sectors which play a role in formation of gross product. Without denying the important role of market relations, we can state that these proportions reflect the real conditions of production. It is surprising that while most of the gross product was created by crop growing, the importance of this sector in the direct circulation of commodities was only secondary. This phenomenon must be closely connected with the different forms of internal consumption.

Turning now to the types of enterprise we can conclude that the larger estates (over 650 hectares) were more interested in increasing gross product than the small ones (under 65 hectares). This is why they accepted lower efficiency and net income. (In the period under examination here the proportion of land cultivated by one worker on a small estate was, on the average, 40% smaller). The most obvious explanation for this situation can be found in the different structures of production costs. Assuming that with respect to the so-called general costs, the differences between the two types of enterprise were negligible, we can conclude from Table I that the technical costs per hectare were 25% higher on the large estates than on the small ones. This is true only if prices remain unchanged, although contemporary experts estimated price differences to be 15-26% to the disadvantage of small estates. We cannot undertake here a detailed analysis of how the particular character of the technical equipment could determine the possibilities for technical development; we can only state that the interests and possibilities of large estates in this respect considerably surpassed those of the small estates. This, on the one hand, determined the level of productivity — as shown by the yield indices — but at the same time postulated a more intensive participation in the market.

If we add up the cash income and cost values given in Table I we can draw some conclusions about the extent of participation in the market. An aggregate view of money circulation will show that the money circulation per hectare on the large estates was 50% higher than the national average, or the level of small estates, which also means — regardless of other factors - a much more intensive market activity. The output of purchasing power was, at the same time 100% higher. The real importance of these phenomena

becomes obvious when examined from the viewpoint of the other productive sectors.

The internal proportion of money circulation also shows how accumulation was motivated by different types of economic behaviour. It is remarkable that in the case of large estates 90% of working assets was used to finance direct purchases, while in the case of smaller estates this proportion was under 60%. For the large estates the supply of working assets was ensured by pig-breeding, while the strategic animals of the small farms were cattle. (It should be added that the main type of cattle-breeding on the large estates was for rapid fattening). The small farms saved most of their incomes for production. However, since in this sector the technical level was low, and the labour supply high, the development of production usually meant the increase of land area under cultivation — that is, the extensive solution. All this could contribute to the increase of gross product and of net income.

This, and the previous statement according to which the small estates were net income-oriented, proves beyond doubt that the interests of the enterprises and the tendencies determined by their structures, were contradictory and the only solution to this problem would have been the modification of these structures.

We have already pointed out that the large estates used modern capital-intensive techniques as a greater input than labour. But one should add that contemporary agrarian techniques could be applied in Hungary only for the mechanization of the most important working processes, and this required the formation of a special type of production structure in which the peak of production could be mechanized thus producing a large amount of output and so reducing the specific overhead expenses of the investment goods. In this way it was also possible to ensure sales that were relatively indisturbed by price fluctuations at the market. This situation called for the dominance of cereals and root crops.

In the case of the smaller estates, the lack of technical facilities and new arable land should have led to the formation of a labour-intensive product structure. In spite of this, we have seen that in this type of enterprise the proportion of cereals, for example, considerably exceeded their ratio on the large estates. The explanation can be found not only in the traditions of production, but also in the necessity that these estates had to meet household demands, on the one hand, while, on the other, the size of these properties also imposed a certain pre-determined "cultivation constraint." Agrarian overpopulation resulting from the low labour intensity of other branches of production and the area under cultivation on these farms which was far beyond the optimal size of small enterprises, together contributed to the result that the production of small estates remained at a low level, thus blocking the social development of the agrarian population.

In conclusion, we can say that between the two main sectors of Hungarian agriculture in the period between the two World Wars, it was the larger estates that could adapt best to the existing conditions and their profitability structure were more suited to promote accumulation. In contrast, the small estates concentrated their efforts on self-sufficiency, and could only achieve extensive development. Failing to accumulate they lost their ability to adapt their own structure to the new conditions.