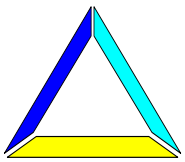
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The organisational forms and performance of agricultural enterprises in Ukraine: What conclusions can be drawn?

1. Introduction

One of the main goals of agricultural policy reform in general and the reorganisation of collective agricultural enterprises in particular is to enhance the efficiency and competitiveness of domestic agricultural production. One way to achieve this is to create conditions under which agricultural enterprises can evolve in accordance with market requirements. Critical steps towards the creation of such conditions were taken in Ukraine for example at the end of 1999 (Presidential Decree "On accelerating reforms in Agricultural Sector of Ukraine", December 1999) and recently with the adoption of a new Land Code. As a result, the structure of agricultural enterprises in Ukraine has changed more in the last two years than in the previous eight years of transition, and the heterogeneity of existing forms of agricultural enterprise has increased dramatically.

What lessons can be drawn from this experience? Using data on the results of the economic activity of agricultural enterprises in Ukraine, and detailed data on agricultural enterprises in Cherkassy Oblast, we focus on two important lessons in particular. The first concerns the issue of organisational form. Many policy makers and analysts in Ukraine continue to talk in terms of 'optimal' enterprise sizes and structures in agriculture. The data illustrates that this can be misleading and distracts from more important issues. The second lesson concerns the (mis)use of information on average performances when designing agricultural policies. Policy decisions based on average economic indicators will often 'miss the mark' considerably, providing unnecessary assistance to above average enterprises in agriculture, and too little assistance to below-average enterprises. In the following two sections we deal with these two lessons in turn, before drawing conclusions in section 4.

2. The organisational forms of agricultural enterprises that have emerged in the course of reforms and their performance

In the course of agricultural reforms, an integral part of which was the reorganisation of the so-called CAEs (collective agricultural enterprises), several organisational forms of agricultural enterprises have emerged that are new to Ukraine. These include private agricultural enterprises, farms, agricultural companies (mainly limited liability companies) and agricultural production co-operatives. The main goal of this reorganisation and the creation of new organisational forms was to enhance the efficiency of agriculture in Ukraine by establishing private ownership for production factors and providing factor owners and managers with market driven incentives.

The switch from collective to individual forms of farming is perhaps the defining feature of organisational form changes over the last 2 years. As illustrated in Table 1, this feature is reflected in an increase in the prevalence of such organisational forms

as private enterprises and family farms together with a considerable decline in the number of agricultural co-operatives. Between 2000 and 2001, the number of private agricultural enterprises and family farms increased by 448 units or 17.7%. The number of agricultural companies increased by 252 units or 3.8% (this increase is primarily due to an increase in the number of limited liability companies with minimal number of founders, coupled with a reduction in the number of joint-stock companies). Meanwhile the number of production co-operatives declined by 971 units or 31%. Generally speaking, agricultural production co-operatives do not comply with individual agricultural production criteria and have many features of kolkhozes. Dissatisfaction with this form of organisation on the part of members as well as its disappointing economic performance[1] are the mains reason for the decline in the number of production co-operatives.

Table 1. The number of agricultural enterprises that had emerged from collective agricultural enterprises as of 2000 and 2001, by organisational form

Organisational form	2000	2001	Change
Private enterprises and family farms	2519	2967	+ 448
Agricultural companies	6718	6970	+ 252
Agricultural productive co-operatives	3136	2165	- 971
Total	2373	12102	- 271

Source: *Main indicators of economic activity of agricultural companies, productive co-operatives, private and other agricultural enterprises in Ukraine in 2001. Statistical Bulletin*, - K.: Derzhkomstat, 2002, 152 pp.; *Statistical Yearbook Agriculture of Ukraine in 2000* – K.: Derzhkomstat, 2001, 262 pp.

Thus, the statistical information presented here supports the idea that an individualisation process (a switch from collective to individual organisational forms) is taking place in Ukrainian agriculture. This process is accompanied by a concentration of the land and property of the former CAEs into the hands of one person or a few persons. This tendency to individualisation is bringing Ukrainian agriculture more into line with agriculture in the rest of the world. Note that the trend towards individual ownership does not necessarily imply the creation small-sized enterprises. Experience both in Ukraine and elsewhere shows that a private enterprise or a family farm can be large and make use of thousands hectares of leased land. Certainly, in the industrialised countries of Europe and North America, the trend towards larger farm structures and consolidation is clear, even though for historical reasons the family farm continues to dominate in these countries.

Table 2 presents information on the size of agricultural enterprises, by organisational form in Cherkassy oblast in 2001. The data reveal that on average there are no substantial differences in the sizes of private farms, companies and co-operatives. This is true for acreage farmed, the average number of workers employed, production costs and total sales. As for profit, on average it is much higher for private farms than for companies and co-operatives. This supports the argument that individualised forms of asset ownership generate greater incentives to operate efficiently.

Note that the range of variation of profit is considerably higher in companies than in private farms and co-operatives. Furthermore, the largest companies are much larger than the largest private farms or co-operatives, when measured in terms of acreage

[1] We are referring here to the economic performance of co-operatives on average. This does not preclude some co-operatives performing comparatively well (see below).

farmed, capital and total sales. This illustrates that there is great heterogeneity within the individual categories – especially companies – in Table 2. One must therefore be very cautious when drawing conclusion about the performance of companies or co-operatives in general. In terms of profit, the best co-operatives perform quite well, even though co-operatives perform worse than other categories on average.[2] It would therefore be unreasonable to attempt to define or even prescribe an 'optimal' organisational form for agricultural enterprises in Ukraine. A form that works well in one setting may not work well in others.

Table 2. Sizes of agricultural enterprises in Cherkassy oblast by organisational forms in 2001

Indicator	Min.	Max.	Average	Standard deviation	Coeff. of variation
Private farms (57)					
Farming land, ha	6	3972	1467	926	0,63
Average number of workers	3	438	141	101	0,74
Fixed and current assets, thd. UAH	12	14296	3589	101	0,99
Production costs, thd. UAH	14	4153	1099	3539	0,94
Sales revenue, thd. UAH	17	6963	1406	1432	1,02
Profit, thd. UAH	- 373	3004	134	485	3,62
Profit per 1 ha, UAH	-220	756	86	173	2,00
Companies (450)					
Farming land, ha	3	35500	1688	1892	1,12
Average number of workers	2	3065	162	172	1,06
Fixed and current assets, thd. UAH	2	53378	4908	5690	1,16
Production costs, thd. UAH	28	44791	1461	2616	1,79
Sales revenue, thd. UAH	22	55291	1702	3201	1,88
Profit, thd. UAH	- 1394	3720	72	422	5,84
Profit per 1 ha, UAH	-19651	9467	16	1341	82,5
Cooperatives (45)					
Farming land, ha	12	3836	1846	931	0,50
Average number of workers	21	481	211	107	0,52
Fixed and current assets, thd. UAH	520	29560	8967	6513	0,73
Production costs, thd. UAH	79	3570	1477	786	0,53
Sales revenue, thd. UAH	77	4469	1683	990	0,59
Profit, thd. UAH	- 904	1649	51	374	7,50
Profit per 1 ha, UAH	- 10112	7067	- 115	1918	- 16,7

Source: The main economic indicators of farms activity of Cherkasy oblast for 2001. Derzhkomstat, Form#50S/H.

It is also unreasonable to attempt to define an 'optimal' size for agricultural enterprises, or 'optimal' sizes according to agro-climatic zone or type of production, etc. Analysis of the data reveals that size has no clear and unequivocal impact on enterprise performance in Ukrainian agriculture. One enterprise might perform very successfully with 10 ha, while another does the same with 10 000 ha. This is not surprising, and has been found to hold in other countries as well. Of course, in purely

[2] Note that the co-operatives in Cherkassy generated losses of 115 UAH/ha on average in 2001, while average profits per farm were positive at 51 000 UAH. This can be explained by the great losses incurred by some co-operatives that specialise in livestock production on small areas.

technical or engineering terms, there may be an optimal size for certain types of farm operation. In general, larger enterprises will benefit from scale efficiencies that enable them to produce units of output at a lower cost than smaller enterprises. However, managing an agricultural enterprise involves much more than optimising technical processes, and technical efficiency is only one of the many factors that contribute to enterprise performance. For example, the ability to manage, motivate and monitor workers is at least as important. As farms get larger, the costs of monitoring labour grow: it becomes more difficult to control shirking and even theft or sabotage, and the link between individual effort and individual reward becomes more difficult to establish. At some point the associated costs will cancel out any technical efficiencies that may be realised by further growth. Different managers in different settings using different organisational forms will each find their own optimal compromise between these competing factors. Any attempt to define or prescribe optimal sizes will not do justice to this heterogeneity.

This heterogeneity, by the way, is exceedingly valuable. Each agricultural enterprise, with its unique characteristics in its unique setting represents an experiment in which a specific organisational form, size and strategy is tested. Some experiments succeed while other fail, and in the process new ideas and new information on how to manage an agricultural enterprise and how to avoid pitfalls is generated. It has often been stated that one of the great weaknesses of current Ukrainian agriculture is that most farm managers are not willing to experiment; many are too accustomed to simply following norms passed down from above. Agricultural enterprises should be encouraged to experiment and seek solutions to problems that are tailored to the specific conditions on individual farms. Policy makers should not try to 'homogenise' enterprise structures and sizes, but rather should allow the combination of heterogeneity and market disciplines to drive agriculture towards new solutions and greater efficiencies.

This is not to say that scientist should not study the question of optimal sizes and the tradeoffs between technical efficiencies on the one hand and management inefficiencies on the other. Such study may be able to identify trends and to contribute to our understanding of the forces shaping the evolution of agricultural enterprise structures. For example, as grain-producing technology develops, it is becoming increasingly possible to replace labour with capital, thus making it possible to increase technical efficiency and reduce the costs of motivating and monitoring workers. The result is a clear trend to increasing sizes of grain enterprises, for example in the EU.

Indeed, it may be that many grain farms in Ukraine are much closer to the optimal size, however defined, than farms in the EU and elsewhere. However, this is contingent on Ukrainian grain enterprises employing the modern, capital intensive and labour extensive grain production technology referred to above. Given the current scarcity of capital and abundance of labour in Ukraine, employing this technology may not be possible. Under Ukrainian conditions it may make sense to employ more labour intensive technologies, even though this might entail somewhat smaller enterprise sizes. But this is not something to be decided or imposed by academicians, consultants or bureaucrats; the natural market 'laboratory' described above is a discovery mechanism that will find the best answer(s) quickly and flexibly. The degree to which agriculture in the Former Soviet Union lagged behind the West, in terms of technology but especially in terms of management practice, demonstrates how much

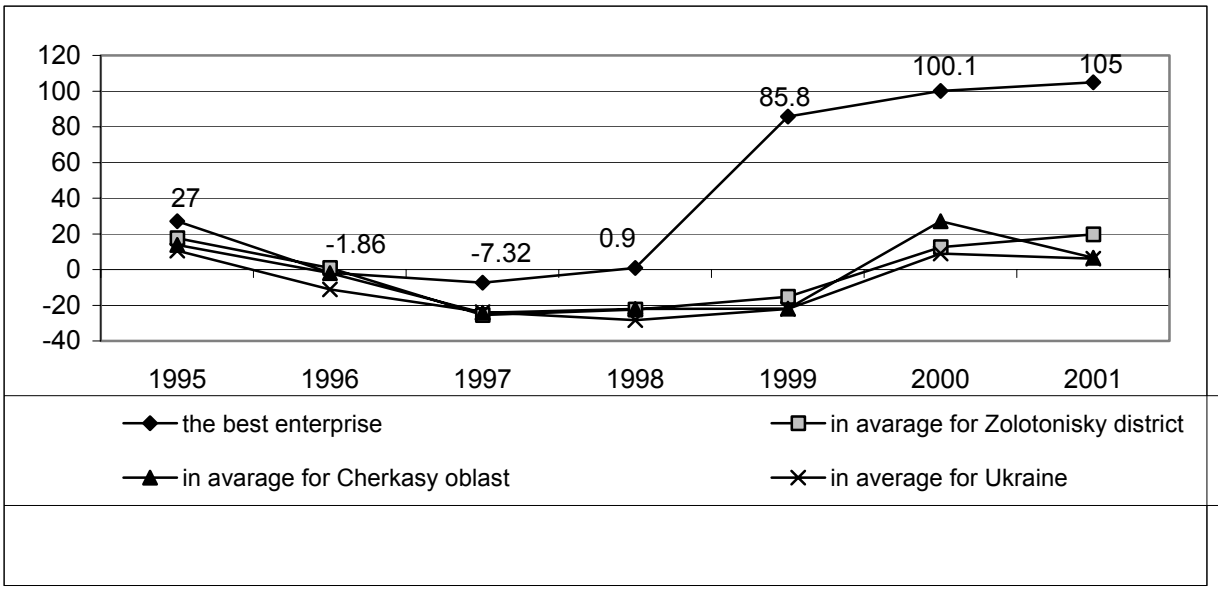
dynamic is lost when policy makers put an end to this experimentation and dictate rigid structures.

3. The (mis) use of average indicators of agricultural enterprise performance

The heterogeneity discussed above also has the important implication that average indicators of agricultural enterprise performance are often not representative of actual conditions in agriculture for the vast majority of enterprises. Hence, it is often not very sensible to draw conclusions about the activity and performance of agricultural enterprises in general on the basis of average indicators.

Figure 1 depicts the development of profitability levels for Ukrainian agricultural enterprises on average, for enterprises in Cherkassy oblast on average, for Zolotonisky district on average, and for one of the best enterprises in Zolotonishevsky district. Table 3 contains information on minimum, maximum and average values as well as the variation of the main indicators characterising agricultural enterprises in Zolotonisky district. Obviously, average indicators differ drastically from minimum and maximum values.

Figure 1. Agricultural enterprise profitability in Ukraine, Cherkassy oblast, Zolotonisky district, and for one of the best agricultural enterprises in Zolotonisky district.



Source: *Consolidated annual statements of enterprises* of Zolotonisky district; *Statistical Yearbook Agriculture of Ukraine in 2000* - K.: Derzhkomstat, 2001, p. 127; *Financial and economic results of enterprises' activity in 2001* – K.: Derzhkomstat, Express-Report #91, April 5, 2002, p.2.

As can be seen in Table 3, the profits per hectare for agricultural enterprises in Zolotonisky district range from -473 to +4614 UAH with an average value of 173 UAH. Capital investments range from 5.22 UAH/ha to 3003 UAH/ha. with an average value of 247 UAH/ha. Corresponding figures for the rate of profitability are -63.9%, 88.3% and -2.57%, respectively.; for current assets they are 208 UAH/ha, 11874UAH/ha and 1332 UAH. Note that Table 3 contains data only for enterprises located in one district. There can be little doubt that if we look at the results of economic activity of

agricultural enterprises in Cherkassy oblast or Ukraine as a whole, the difference between minimum and maximum values will be even greater.

Given these differences, how effective are agricultural policies that are based on average indicators? Imagine that parliament passes a law that provides for an agricultural subsidy that is calculated to ensure that the average farm in Ukraine attains a 10% rate of profitability. For many agricultural enterprises that are below average, this subsidy will still not suffice to make them profitable. On the other hand, enterprises that are profitable already (and such enterprises exist, see Table 3) will receive an unnecessary 'windfall'. As a result, the money spent on the subsidy will not yield the expected results.

Agricultural policy making on the basis of average performance indicators can be compared with medicine. Does it make sense to treat a hospital patient on the basis of the average body temperature of all patients in the hospital? This average temperature might be, for instance, 37^0. But this is little comfort to those whose temperature is 35^0 or 40^0. Applying a uniform treatment will be wasteful at best, and dangerous at worst. Agricultural policy discussions in Ukraine sometimes fall into a similar trap. The exemption from the uniform agricultural tax is justified by reference to the fact that the average profitability of agricultural enterprises in Ukraine is too low. This may be true, but the tax exemption provides the same amount of support per hectare to all enterprises, regardless of their profitability. The least profitable enterprises receive too little support to make a meaningful difference in their situation, while the most profitable enterprises are permitted to escape from their obligation to contribute a fair share to state revenues. Basing policy on averages creates the false impression that all farms are homogeneous and potentially profitable and thus deserve support to help them attain profitability. The fact is that a not negligible proportion of the agricultural enterprises in Ukraine is not viable. The sooner these enterprises are forced to exit the sector, the sooner their assets can be re-employed by better managers, and the sooner the government can redirect the support they receive towards enterprises that have a real chance to become profitable, or to reducing social hardships in rural areas in a targeted manner.

Table 3. The main indicators of economic activity of the agricultural enterprises in Zolotonishsky district in 2001

Indicator	Min	Max	Average	Standard deviation	Coeff. of variation
Profit, thd. UAH	-1334	3720	258	980	3,79
Profit per hectare, UAH	-473	4614	173	805	4,64
Capital investments per hectare, UAH	5,22	3003	247	486	1,97
Profitability, %	-63,9	88,3	-2,57	26,89	-10,46
Current assets per hectare, UAH	208	11874	1332	1837	1,38
Current liabilities per hectare, UAH	42,5	7760	846	1248	1,48

Source: Annual farm's reports of Zolotonisky district for 2001

4. Conclusions and Recommendations

1. Ukrainian agriculture faces a clear trend to individualisation. This can be observed as an increase in the number of private enterprises and family farms and as a substantial decline in the number of agricultural production co-operatives, which differ little from the kolkhozes. This trend is in accordance with worldwide experience in agriculture. Individualisation, however, does not imply the creation of small-sized agricultural enterprises. Private enterprises and family farms founded on the basis of CAEs tend to be large due to land and property leasing from the former members of CAEs. Furthermore, the size of an enterprise is not a criterion of its efficiency.
2. Despite the fact that private farms and co-operatives founded on the basis of CAEs are approximately the same in size, on average private enterprises and family farms generate more profits per hectare of land than agricultural production co-operatives do. This may indicate that co-operatives suffer from some organisational weaknesses compared with other forms. At the same time, however, the best co-operatives perform as well as the best private enterprises and companies. Hence, there is no 'optimal' organisational form for agricultural enterprises; different solutions will work in difference situations.
3. Analysis of the main indicators reveals that size has little impact on the economic performance of agricultural enterprises. Performance depends on specialisation and ratio between production factors – land, capital, labour and especially management. Determining the optimal size for an agricultural enterprise is not just a question of optimising technical or engineering processes. Management, especially the management of labour, becomes increasingly critical as size increases, and may make it impossible to reap all of the potential technical benefits of size.
4. Policy makers should view agriculture as a giant laboratory in which farms change, adapt and try to find the best possible sizes, organisational forms and strategies to suit their individual conditions. They should not attempt to dictate sizes and organisation forms, but rather should allow the combination of experimentation and market disciplines to generate innovations and new solutions.
5. It can be very misleading to draw conclusions about the performance of agricultural enterprises and to design agricultural policies on the basis of average indicators in a district, oblast or Ukraine as a whole. Such policies will lead to a waste of state funds and will not yield desirable results. The are huge differences between the values of the indicators describing the worst and the best agricultural enterprises. Average values therefore are not very representative of the real situation in agricultural sector. Policy makers should employ policy tools that can be focussed at enterprises that need and can make use of support.

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