

# Land Policy and Farm Efficiency: The Lessons of Moldova

Large farms of the same organizational form perform better

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As a result of the agrarian reform in Moldova, which started in the early 1990s and was virtually completed by 2000, over one million residents became landowners. Many of them used their privately owned land to establish independent family farms, while others entrusted their land to managers of newly created corporate farms. As of today, 50% of agricultural land in Moldova is used by individual producers. This is in stark contrast to the pre-reform situation, when individuals cultivated only 2% of agricultural land.

The shift of agricultural land from corporate to individual farms has led to significant changes in the production structure of Moldovan agriculture. While at the beginning of the reforms, the individual sector was producing 20% of agricultural output on less than 10% of agricultural land, in 2003 individual farms produced three-quarters of agricultural output on half the agricultural land.

We analyze the efficiency and performance of Moldovan farms along two dimensions — organizational form and farm size.

## Individual Farms More Efficient

The partial productivities of land and labor estimated using national statistics decreased over time in both corporate and individual farms (see Figure). Yet, the land productivity of individual farms was significantly higher than that of corporate farms over the entire period of 1990-2003. This is similar to other transition countries. The difference in labor productivity (which is usually higher for corporate farms in other transition countries) was not statistically significant in Moldova during this period.

Our calculations of total factor productivity (TFP) using national statistics show that the TFP for individual farms was higher than for corporate farms over 1990-2003. The respective means for 1990-2003 were 11.5 for individual farms and 4.4 for corporate farms.

When comparing the efficiency of specific farms to the production frontier (constructed using survey data) we find that while all farms surveyed are relatively inefficient, individual farms achieve higher efficiency scores than corporate farms, implying that they utilize land and labor more efficiently than the corporate farms.

The partial productivity measures for small and large farms in four recent surveys in Moldova show a mixed picture. Small farms have a higher partial productivity of land (output per hectare) and a lower partial productivity of labor (output per worker); moreover, they employ a much higher number of workers per hectare than large farms.

We resolve the ambiguity in partial productivity measures by calculating TFP from survey data. This measure conclusively shows decreasing returns to scale: large farms produce less per unit of inputs in the margin than small farms.

Since large farms are typically corporate farms while small farms are family farms, we tried to disentangle the farm size effect and the organizational form effect by looking at two homogeneous samples: one of corporate farms and the

other of family farms. Our analysis of corporate farms shows that the land productivity clearly increases with farm size, whereas labor productivity does not. Most importantly, TFP shows a definite increase with farm size.

In a sample of family farms, the standard of living of rural families (a proxy for farm performance) increased with farm size. Family farmers reporting a 'comfortable' standard of living had 11 hectares on average, compared with less than 5 hectares for farmers with 'subsistence' standard (sufficient to buy food and necessities) and those on a 'poverty' income (not sufficient to buy food). Thus, policy measures should facilitate augmentation of the small family farms.

## Conclusions

Our results thus demonstrate that family farms are more productive than corporate farms. Farm performance improves with increasing size for farms of the same organizational form, but not across different organizational forms.

Higher efficiency of family farms does not necessarily imply that corporate farms should be eliminated. Market economies have achieved an equilibrium farm structure, which includes a mix of individual farms (the dominant majority) and corporate farms (a small minority) determined by resource availability, managerial capacity, and personal preferences of farmers and investors. A similar process can unfold in Moldova, but the development of corporate farms must be left to market forces, free from government intervention. At the same time the government should focus on improving the environment for small individual farms.

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### Land and Labor Productivity for Corporate and Individual Farms

