

*Do Agroholding Members Perform Better than Independent Farms?
Evidence from the Belgorod Oblast, Oryol and Tatarstan*

Ekaterina Gataulina¹, Heinrich Hockmann² and Anton Strokov³

¹ All-Russian Institute of Agrarian Problems and Information Theory (VIAPI), Moscow, Russian Federation

² Leibniz Institute of Agricultural Development in Transition Economies (IAMO) Halle (Saale), Germany, hockmann@iamo.de

³ Eurasian Center for Food Security (ECFS), Moscow, Russian Federation

Extended abstract

In 2000s a massive formation of agoholdings was observed in Russia. Agroholdings are huge companies in the downstream and upstream sectors which control large part of agricultural production. Usually they are linked to the agricultural sector via contractual and ownership arrangements. Moreover, the agroholdings act as a parent company and conduct the strategic planning (investment, specialization), provide the financial means, and are responsible for the marketing of the produce. The member companies of the holding are normally legally independent organizations; however, they have to report to the parent company.

There is insufficient information about the performance of the parent companies since a consolidated budget is only published rarely. However, the growth or stock price developments of some companies provide an indication of the profitability and growth potentials. What effects result from the creation of agroholdings in the agricultural sector? Information on this issue can be very scarce. However, we were fortunate to be able to explain in detail the performance of members of agricultural holdings for three oblasts. These are Oryol, Belgorod and Tatarstan. In all three regions agroholdings were very active.

The objective is to provide information on the performance of the member companies of agroholdings using a comprehensive indicator (total factor productivity) obtained from efficiency analysis. The performance of the agroholding members is compared to a reference group, the legally independent agricultural corporate farms in the regions. In order to ensure at least a minimum of comparability of the results the analysis is based on a similar approach.

First, we describe the development of factor inputs and the production in the regions. Based on this, we can derive first conclusions on strategies of agroholdings regarding their specialization in production and their approaches for the development of factor inputs and technologies. This is followed by an econometric study of the individual production structures. Data provided by ROSSTAT will be used. However, the data were collected for different projects. This ensures that the structure of the data is comparable; however, the time periods vary considerably. For Belgorod we have data for 2001, 2004 and 2007. The data for Oryol and Tatarstan cover the years 2007 to 2009.

The econometric analysis relies on a translog specification for all three oblast. The output and input variables are defined for all regions in a similar way. Outputs are defined as the sum of gross productions of individual outputs in constant prices. The unit prices of the individual output were directly calculated as a relation of the quantities sold and the money received. This relation was used together with the production shares to calculate a multilateral consistent Törnquist Theil prices index of outputs. Four inputs were distinguished: land, labour, capital, and variable inputs. Land was measured in total hectare devoted to agricultural production, labour input consists of the amount of full time workers. Capital input was approximated by the amount of depreciation and the aggregate variable inputs comprise the expenditures for feed, seed, fertilisers, energy and others. The data in current values (capital, fertilizer) are deflated by regional price deflators for the individual input category. In addition a time trend was used to account for the effect of technical change.

Although the definition of the variables was very similar specification of the translog function differed slightly. For Belgorod specification in efficient inputs was chosen to save the number of parameters. The efficient inputs were assumed to be functions of time (technical change), land quality and membership to an agroholding. Expanding the function with efficient inputs gave the conventional formulation of a translog function with linear and quadratic effects of technical change, factor quality and membership variables, except that these parameters are not directly estimated but calculated from the parameters of the efficient inputs. For Oryol and Tatarstan we returned to the conventional formulation of the translog function. However, we used the Just and Pope approach to consider the effect of production risk in the estimation.

The estimations indicate that the effect of agroholding membership is not homogeneous in all regions. In Belgorod agroholding members experienced a far greater growth of TFP than independent enterprises. Moreover, in 2003 the holding members were well behind independent farms. However, especially because of the intense investment into new technologies they overtake the independent farm and by 2009 they define the frontier of the technology. The situation was different for Oryol and Tatarstan. In these regions the difference between holding members and independent farms was not so pronounced. Moreover, there was indication that agroholding members could not keep up with the development of independent farms.

In the conclusion some reflection is drawn whether these different developments are due to the specialization of the regions. Belgorod specialized on pork production, Tatarstan was the largest milk producing region in Russia, and Oryol had a rather diversified agricultural production. Pork production can be highly mechanized and favours highly integrated industrial production structures.