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Agric. Econ. – Czech

**Vasiliev N., Suuster E.,
Luik H., Värnik R.,
Matveev E., Astover A.:**

Productivity of Estonian dairy farms decline after the accession to the European Union

Agric. Econ. – Czech, 57 (2011): 457-463

The aim of the study was to analyze the productivity change of Estonian dairy

the European Union. The Malmquist productivity index was measured and separated into the technical and efficiency change using the data envelopment analysis for the pre-accession period (years 2001– 2003) and the post-accession period (2004– 2006). Second-stage regression was applied to estimate the possible variables determining the productivity and efficiency change. Productivity growth of Estonian dairy farms was negative for both observed periods; the mean annual growth rate of the Malmquist productivity index was – 0.7% in 2001– 2003 and – 2.6% in 2004– 2006. The share of farms with declining productivity increased from 36% to 50% after the accession to the EU and is induced mainly by a significant deterioration in the efficiency change. Remarkable changes in the line-up of most efficient dairy farms occurred between 2000 and 2006, producers with greater initial efficiency have experienced significant regress, with efficiency score decreasing from 0.842 in 2000 to 0.608 in 2006 and the new front-runners, forming the efficiency frontier, have emerged. Capitalization was positively

related with the cumulative technical change. Nevertheless, increasing investments and assets have not affected efficiency change and investments have often not been harnessed in the best possible way.

Keywords:

Malmquist productivity index (MPI), data envelopment analysis (DEA), bootstrapping, dairy farms

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