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Determinants of technical efficiency of Slovenian farms

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Motivation: To shed light on how farm performance might evolve and on which farms will possibly survive the international competition post-accession

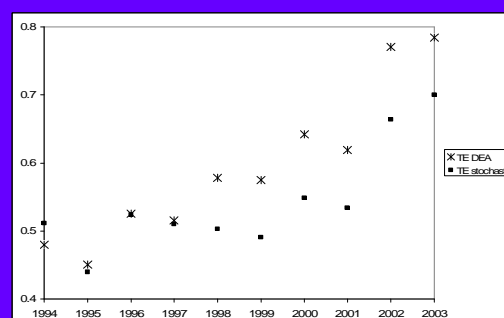
Methods: Farm performance is studied from the point of view of technical efficiency
Calculated with stochastic frontier and non-parametric Data Envelopment Analysis (DEA)

Data: FADN, 1994-2003, family farms

Results:

- both methods give consistent results
- initial large inefficiencies (degree of technical efficiency increased from 0.5 to 0.8)
- a jump in efficiency prior the EU accession
- farm specialisation is a crucial determinant for increasing technical efficiency
- negative impact of farm commercialisation due to intra-farm intermediary consumption in livestock production
- negative influence of public support

Figure: Evolution of technical efficiency calculated with DEA (TE DEA) and with stochastic frontier (TE stochastic)



| | Determinants of technical <u>inefficiency</u> calculated with stochastic frontier | | Determinants of technical <u>efficiency</u> calculated with DEA | |
|-------------------------------------|--|--------------|--|--------------|
| | coefficient | significance | coefficient | significance |
| Constant | -0.110 | *** | 0.870 | *** |
| Share of hired labour | -0.298 | | 0.002 | |
| Share of rented land | -0.178 | | 0.001 | ** |
| Share of marketed output | 0.225 | *** | -0.006 | ** |
| Herfindahl specialisation index | -0.263 | * | 0.206 | *** |
| Production subsidy to revenue ratio | 0.214 | *** | -1.090 | *** |
| Time trend | -0.472 | *** | 0.032 | *** |
| Log likelihood | 25.60 | | 134.05 | |

*** 1 percent level of significance; ** 5 percent level of significance; * 10 percent level of significance

Conclusions: technical efficiency growth might slow down after accession due to increased support; but positive influence of public support can be expected on technological change, and thus on farm productivity

Future research: impact of the EU accession on farm productivity