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To whom it may concern,

I write this letter to summarize my evaluation of the dissertation by Viliam Druska.

The dissertation is motivated by classic questions in economics: why is productivity so different across firms and how can one reliably measure it? The classic solution is to use the Solow residual but such an approach, while being simple, has a number of drawbacks and a variety of solutions has been developed over the years. The present dissertation is methodological and applied in nature and proposes several estimators of productivity as well as presents a few applications.

Specifically, the first chapter of the dissertation is concerned with addressing serial and spatial correlation of errors in production function type estimators. This correlation is very likely to be empirically relevant as firms may have payoffs dependent on previous payoffs (e.g., serially correlated productivity shocks) or payoffs of other firms (e.g., monopolistic competition with strategic interaction). The key advantage of the proposed structure on errors—which can be cast as a GMM estimator in spirit of Kelejian and Prucha (1999)—is that even with small T (time series dimension of the data) one can obtain improvements in the statistical properties of the estimators. The properties of this approach are illustrated using a panel of rice producers in Indonesia and the stochastic possibility frontier framework.

The second chapter builds on the first chapter and extends the framework to the case where one can treat firm specific effects as random (rather than fixed). The key advantage of this alternative assumption is that one may exploit serial/special correlations even more. While the assumption of random firm effects may be appealing in some contexts, it is likely to be less attractive in the context of production function type estimators as it imposes no correlation between errors (effectively, productivity of firms) and regressors (inputs), which is unlikely to hold as firms choose inputs in light of their productivity. In any case, this is an interesting theoretical extension.

The last chapter of the dissertation is an application of data envelopment analysis (DEA) to a firm in the service sector. This is an interesting case study which should be interesting to experts in telecommunications industry.

Overall, I found this dissertation novel, carefully executed, and making an important contribution to the literature. The current draft of the dissertation warrants a dissertation defense and the eventual award of a doctoral degree.

Sincerely,

Yuriy Gorodnichenko