

Accepted Manuscript

Consistent inference in fixed-effects stochastic frontier models

Federico Belotti, Giuseppe Ilardi

PII: S0304-4076(17)30194-X

DOI: <https://doi.org/10.1016/j.jeconom.2017.09.005>

Reference: ECONOM 4431

To appear in: *Journal of Econometrics*

Received date: 10 May 2012

Revised date: 18 July 2017

Accepted date: 13 September 2017

Please cite this article as: Belotti F., Ilardi G., Consistent inference in fixed-effects stochastic frontier models. *Journal of Econometrics* (2017), <https://doi.org/10.1016/j.jeconom.2017.09.005>

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.



Consistent inference in fixed-effects stochastic frontier models

Federico Belotti^{a,*}, Giuseppe Ilardi^b

^a*Department of Economics and Finance, University of Rome Tor Vergata.*

^b*Economic and Financial Statistics Department, Bank of Italy.*

Abstract

The classical stochastic frontier panel data models provide no mechanism to disentangle individual time invariant unobserved heterogeneity from inefficiency. Greene (2005a,b) proposed the so-called “true” fixed-effects specification that distinguishes these two latent components. However, due to the incidental parameters problem, his maximum likelihood estimator may lead to biased variance estimates. We propose two alternative estimators that achieve consistency for $n \rightarrow \infty$ with fixed T . Furthermore, we extend Chen et al. (2014) results providing a feasible estimator when the inefficiency is heteroskedastic and follows a first-order autoregressive process. We investigate the behavior of the proposed estimators through Monte Carlo simulations showing good finite sample properties, especially in small samples. An application to hospitals’ technical efficiency illustrates the usefulness of the new approach.

Keywords: Stochastic frontiers, Fixed-effects, Panel data, Marginal simulated likelihood, Pairwise differencing

JEL: C13, C16, C23

*Corresponding author: Federico Belotti, Department of Economics and Finance, University of Rome Tor Vergata, via Columbia 2, 00133 Rome, Italy. E-mail: federico.belotti@uniroma2.it, phone/fax: +39 06 7259 5621.

Download English Version:

<https://daneshyari.com/en/article/7358126>

Download Persian Version:

<https://daneshyari.com/article/7358126>

[Daneshyari.com](https://daneshyari.com)