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Panel estimation of sectoral substitution elasticities for CES production functions

This paper provides a broad range of estimates of substitution elasticities for 35 sectoral nested CES production functions, using panel data techniques, with the World Input-Output Database (WIOD) as the main data source. Although the related empirical literature has been growing over the recent years, there is still no single study focused on a large-scale estimation of various sectoral elasticities with a use of a common database and methodology. This paper constitutes an attempt to fill this gap.

Estimation results suggest a significant heterogeneity in elasticity values between various activity sectors, as well as between various nests of production function. It also turns out that, in most cases, obtained long-run elasticities are higher than in the short run, as well as significantly different from zero (Leontief specification) and unity (Cobb-Douglas specification). In addition, time series properties of panel data (stationarity and cointegration) play a crucial role in determining the type of dynamic model (autoregressive distributed lag model, error correction model or model for differenced series) to be estimated for a particular nest-sector combination and, in turn, in determining the obtained values of elasticity estimates.