Abstract for “How do the Measurement of Capital and Output Affect Productivity Measures for the Services Sectors? An Application to EU-KLEMS”

Alicia Rambaldi (University of Queensland, Australia)
Antonio Peyrache (University of Queensland, Australia)

In this paper we evaluate the impact of alternative measures of inputs and outputs on the measurement of productivity growth with emphasis on the services sectors. The application is to the measurement of productivity growth in European countries and the US for the following sectors (as defined by KLEMS): financial intermediation; public administration and defence; compulsory social security; education; health and social work; other community, social and personal services; and renting of m&eq and other business activities. The paper is close in spirit to the work of Vancautern et al (2012); however, our econometric approach and emphasis differs. The econometric approach adopted here is by estimating the production frontiers using a panel data state-space model which allows flexible identification of country specific time trends (temporal variation in individual heterogeneity) and time variation in the vector of slope coefficients of the production frontiers (bias in technical change). The framework can be thought as an extension of the fixed effects model and is especially useful when dealing with EU-KLEMS data because of their “long” panel nature (i.e., small number of countries for a relative long time span). On the measurement of inputs we consider the use of Non-IT vs IT capital, while on the measurement of output we consider measures based on gross output, value added and the role of intermediate inputs to adjust output measures.

Reference