An Integrated Input-Output Based Method of Multifactor Productivity Measurement

Topic: Productivity and efficiency analysis I (Chair: Douglas S. Meade, Inforum)
Author: Douglas S. MEADE

An Integrated Input-Output Based Method of Multifactor Productivity Measurement
Douglas S. Meade
Abstract

In the United States, the Bureau of Labor Statistics (BLS) compiles multifactor productivity (MFP) measures of output per unit of combined inputs for the private business, private non-farm business, and manufacturing sectors, and for 18 NAICS 3-digit manufacturing industries. The Bureau of Economic Analysis (BEA) has been producing components of a KLEMS database at a level of about 65 industries for several years. In the Inforum LIFT Model, we have adopted the BEA classification for the industry sectoring, and have built a block of the model in which MFP can be calculated both historically and in the forecast. The data on which the LIFT MFP modules is based are internally consistent, and relate to the IO database used to build the model. The model can also yield an economy-wide aggregate MFP estimate.

Estimates based on the neoclassical approach to MFP measurement were presented in an earlier paper. In the current paper, we adopt a method that has been explored by Statistics Canada, that involves calculating the MFP related to the provision of each commodity of final demand. This method uses IO calculations to resolve productivity into the direct and indirect use of primary factors to produce each unit of final demand. We apply this technique to the U.S. model database described above, to obtain alternative measures of MFP growth by commodity for the U.S. for the period 1997 to 2020.