

Estimation and Decomposition of TFP Growth in the Presence of Inefficiency and Production Risk

by

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Abstract

This paper addresses estimation and decomposition of total factor productivity (TFP) change. Usually TFP change is decomposed into technical change and scale effects. If inefficiency exists, it also contributes to productivity change. Here we decompose productivity change into efficiency change (both technical and allocative), technical change, and scale effects. Three alternative approaches using parametric production, cost, and profit functions, which differ in terms of behavioral assumptions on the producers and data requirements, are considered. Finally, we consider TFP growth when output is risky.