

New Indexes of Labour Productivity Growth: Baumol's Disease Revisited

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Abstract

We introduce two new indexes of labour productivity growth. Both indexes are intended to capture the change in the production frontier, which can be attributed to technological progress or growth in capital services. The two indices adopt distinct approaches to measuring the distance between the production frontiers. One is based on the distance function and the other is based on the profit function. In the end, we show that these two theoretical measures coincide with the index number formulae that are computable from the observable prices and quantities of output and input. By applying these formulae to the U.S. industry data of the years 1970–2005, we compare newly proposed indexes of labour productivity growth with the growth of average labour productivity over periods and across industries. We revisit the hypothesis of Baumol's disease throughout our observations on the trend of industry labour productivities in the service sector.

Key Words

Productivity, index numbers, Malmquist index, Törnqvist index, output distance function

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