

The measurement of productivity: contributions to the analysis from IO economics

Topic: Productivity and efficiency and economic growth

Author: Rossella Bardazzi

This paper is devoted to the study of labour productivity at the sectoral level by comparing different methods which may be used to measure the content of labour per unit of output. This topic is part of the broader issue of understanding the drivers of economic growth, therefore an extensive literature has been devoted to productivity measurement and statistical offices and organizations have prepared large manuals to explain how to compute meaningful productivity indices and statistics. IO concepts and tools may prove to be very important when outsourcing and vertical integration take place but, generally, statistics at sectoral level largely disregard this information and neoclassical growth models usually ignores intermediate goods and analyze economic growth entirely in terms of value added (on this topic, see recently Jones, 2011). However, the analysis of productivity has a long history in input-output economics as reminded by a special issue of Economic Systems Research devoted to this topic (September 2007).

Our aim is to emphasize assumptions implied in conventional indicators to measure productivity which are not novel but are not acknowledged by mainstream economics. We will discuss the concept of real value added because, as mentioned in the OECD productivity manual, productivity measurement poses a problem of valuation both in the framework of consistent KLEMS calculations and in the value added based measures as “productivity is commonly defined as a ratio of a volume measure of output to a volume measure of input use” (OECD, 2001, italics ours). We will follow the line of reasoning proposed by Almon (2009) and will provide an empirical application with a comparison between indexes rooted in growth accounting methodology and measures computed by the IO approach to underline the shortcomings of the most popular indicators at the industry level.

Almon C. (2009), “Double trouble: the problem with double deflation of value added and an input-output alternative with an application to Russia”, in Energy Policy and International competitiveness, Bardazzi R. and M.Grassini eds, Firenze University Press.

Jones C. (2011), “Misallocation, economic growth, and input-output economics”, NBER wp 16742.