Computable Production Prices with Fixed Capital as a Joint Product and Technical Progress --- A simple case

Topic: Structural change and dynamics 3
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The aim of this paper is to devise a scheme of computable production prices in the spirit of Sraffa's (1960) system of production, in order to identify stylised forms of technical progress (in the sense of Schefold 1976) in actual economies.

In particular, by connecting fixed capital replacement procedures (Gossling 1974) with the analysis of long-period production prices and activity levels in a dynamic Input-Output scheme (see Lager 1997, Lager 2000), an empirical treatment of fixed capital as a joint product for the simplest case of constant efficiency and exogenously given length of life of capital goods is advanced. Complementarily, the method of growing subsystems (Pasinetti 1988) is applied in order to separate growth from technical change in empirically observed structures, allowing to perform an analysis of comparative dynamics.

In this way, by computing shifts in wage-profit schedules implicit in different techniques in use, changes in the distributive possibilities of actual systems due to technical progress may be assessed.

An empirical application to the case of Italy for the period 1999-2007 is presented, and compared with traditional measures of economy-wide profitability (i.e. productivity-cum-exchange) like Total Factor Productivity Growth (TFPG). In order to correctly separate prices from volume growth, all magnitudes are computed directly from the set of commodity x activity Supply-Use Tables (SUT) of the System of National Accounts (SNA), avoiding the use of particular Input-Output technology assumptions which result in square matrices that include statistical price structures in the derived coefficients.

References

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