Enterprise size and returns to scale effects in energy and non-energy industries

Topic: SAM and Multiplier Analysis
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The assumption of fixed technical coefficients in the multisectoral framework represents a critical issue particularly with reference to the dynamic perspective within a medium and long time horizon. A possible way to tackle this subject is that of designing the producing process through a partition of the technical coefficient into two components.

In this way the absorption of intermediate goods per unit of product will consist in a constant part and in a variable one. The latter will be treated as an industry-specific stochastic component of the coefficient incorporating specific and system effects.

As to the specific effects, the change of the technical coefficient will depend on the enterprise size, production costs and the change of the productivity factors. Whereas the system effects incorporate the cyclical fluctuations that the economy as a whole passes through. Through the use of a multisectoral extended model the effect determined by the different sizes of enterprises will be quantified, capturing in this way the returns of scale within the economic system (Ciaschini, 2000).
The empirical analysis will concentrate on the case of Romania. The multisectoral extended model, based on the Social Accounting Matrix (SAM), built on the dataset provided by the National Institute of Statistics of Romania for the year 2012, and which integrates the generation of the value added in the multisectoral framework with the generation and the distribution of income (Miyazawa, 1976), allows to verify the dynamics generated by the stochastic element on the main macroeconomic variables. Through a macro classification of the industry according to the energy-intensive criterion, different scenarios will be analysed, based on the European energy policies for Romania.

References:

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