Commodity classification and valuation system conversions of household demand in the IO framework. Methodological aspects and modelling implications

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Abstract

Whenever the consumers' behaviour and their responses to prices or income changes are central to the analysis and comparison of policy intervention options (e.g. fiscal policies, etc.), the IO model is customarily coupled to a specific model that simulates the budget allocation of households. Such consumption models consist in general of a set of econometrically estimated equations containing income and price elasticity parameters to explain and quantify how households reallocate their expenditure among different consumption purposes, e.g. buying food, staying at home, using the car or travelling, when the relative prices change, for instance due to the implementation of a tax policy. The income and price elasticities are used to reshape the final demand vector that is then used in the Input-output framework as the exogenous and 'pulling' variable of the model.

This paper elaborates on two methodological and practical modelling issues that emerge from the coupling of these consumption models with the Input-output model utilised for impact analysis. Firstly, the econometrically estimated elasticities refer to the expenditure allocation among consumption purposes that are fulfilled combining different goods and services (e.g. driving a car requires the purchase of the car, of fuel and spare parts, and of insurance services), while the household consumption in the IO framework is expressed on a product basis. As a consequence, a bridge between the household final demand expressed as consumption purposes and products demand is required (in the European System of Accounts, between COICOP and CPA classifications respectively). Secondly, households buy goods at purchaser prices, while the price layer of the IO model is usually the basic price. The ensuing valuation mismatch between the two household demand specifications needs be corrected by redistributing the trade and transport margins among sectors and by recording the net taxes on products paid by the consumer. The paper approaches these issues both from the methodological and practical angles. Its main contribution is a clear discussion of the issues on a theoretical ground and the proposal of a consistent modelling framework to link the household demand model with an IO model. A stylised application is also presented to elucidate the advantages of the proposed modelling approach in comparison to other possible alternatives.

Keywords: Input-output models, Consumption modelling, Valuation system.