An integrated household expenditure and input-output model

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Author: Umed TEMURSHO

Taylor (2013) developed an empirical approach to the analysis of household consumption behavior, which has been further extended and applied in a series of subsequent papers by the same author. It turns out that the so-called â€œintra-budgetâ€• coefficients, which quantify the direct relationships between an exhaustive set of expenditure categories and are econometrically derived from consumer expenditure surveys, displayed remarkable stability quarter-to-quarter when using the BLS quarterly Consumer Expenditure Surveys from 1996 through 2005. Taylorâ€™s consumption expenditure model is attractive for several other reasons, including its purely empirical basis and consistency with a variety of preference structures, representation of the conjunctive effects of household tastes and preferences together with those of prices and income, its straightforward use for calculating own- and cross-price elasticities, and its applicability for the distributional analysis of various policies such as inflation, carbon taxes, and the Covid-19 pandemic.

In this paper, we connect Taylorâ€™s consumption expenditure model to Leontiefâ€™s quantity and price input-output (IO) models. By linking consumption reactions and the interindustry models, the economy-wide (production and consumption) spillover and feedback effects between the two types of models are properly accounted for. Thus, this integrated macro-micro framework allows incorporating the circular consumption-production-income roundabout impacts, drawing on the empirical regularities of interconnectedness of household consumption expenditures obtained from household budget surveys. We study in depth some of the main theoretical properties of this new integrated macro-micro IO model. As an empirical application, we study the distributional impacts of recent increases in energy prices in the EU27 economies. Additionally, as a byproduct of this work, we provide researchers with a comprehensive set of price and income elasticities for 27 EU countries and 5 household income groups.