

On the Interface between input-output and CGE models

Topic: 516C Special session: Exploring the Interface between IOA and CGE

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The Input-Output Analysis (IOA) and the Computable General Equilibrium (CGE) model have many commonalities as well as differences. Both describe the production and consumption of goods and services by multiple sectors, while general perception on the two models, which are largely based on archetypical versions of the two, focuses primarily on their differences in (1) sector/product resolution, (2) fixed-coefficients/substitution, and (3) handling of price effects.

At the same time, there have been many attempts that made the distinction more blurred. Furthermore, in recent years, environmental assessment community, Life Cycle Assessment (LCA) in particular, has begun exploring the use of IOA, CGE, and other models for "consequential" assessment, and the interest in the relationship between IOA and CGE is resurfacing. In this presentation, I propose to discuss the similarities and differences of the two, their strengths and weaknesses in answering different questions under different data/resource situations, and various attempts of crossover.

A number of case studies that are based on IOA, CGE, and the models interfacing them will be presented and discussed including the Rectangular Choice of Technology (RCOT) model, and its stochastic extension. I anticipate that the discussion will help sharpen our understanding of two modeling approaches, identify a set of unique roles of the two models in economic modeling, and guide the development of new approach that can embrace the strengths of the two.