ARTNeT Introductory course on CGE Modeling for Trade policy Analysis

24-26 Sep 2014, Bangkok

The objective of this course is to provide participants with a solid foundation in Computable General Equilibrium (CGE) applications and methods in order to obtain better evidence on impact of trade and other related policy changes. Participants will learn how CGE models are constructed, used and interpreted.

Course costs: ARTNeT does not charge any tuition fee. Participants are expected to cover own travel and accommodation costs.

Instructor: Professor John Gilbert

Outline:

1. Introduction to CGE Analysis: An overview of CGE models and CGE modeling (uses, interpretation, strengths and limitations).

2. Recent CGE Analyses for Trade Policy: Review of selected recent applications in the CGE literature for trade policy in developing economies with the objective of gaining a better understanding of the types of questions to which CGE analysis can usefully be applied.

3. Theory: Non-technical discussion of the basic theoretical structure of the components of typical CGE models, including consumption, production and trade with the Armington assumption. Work with simulating pre-built models in GAMS of each component to develop intuition. Discussion of the meaning of closure and various closure options and their implications.

4. Data: Data requirements of CGE models and using a social accounting matrix (SAM) to organize and conceptualize the data in a CGE model. Sources of data for CGE analysis.

5. Hands On: Work with the 'standard' CGE model. A pre-built version of a typical CGE model in GAMS will be provided, and participants will have opportunity to see how the model can be used to simulate the economic impact of various changes in the economic environment and policy.

6. Wrap Up: Wrap up of the course. (Participants will be directed to more advanced resources, and will have the opportunity to discuss their research projects.)

Learn when to use a hammer: Introductory course in CGE modeling for trade policy analysis

"Computable general equilibrium (CGE) models are a widely used tool for simulating the effects of changes in economic policies, especially in the area of international trade. By combining a rigorous theoretical foundation with real-world data representing an economy, CGE models are able to generate insights into the effect of policy changes on an entire economic system. This makes them a valuable tool in the policy assessment toolbox, and policymakers often request CGE simulation results in support of policy proposals. CGE models generate quantitative inputs for the policymaking process, and can also generate important insights into the broader effects of policy changes. Nonetheless, despite their popularity, CGE models and results generated by them are also the subject of considerable mistrust. Why?

Part of the blame surely lies with practitioners. CGE models are complex and are often seen as a black box. This should not be the case. The models are deterministic, and modelers can and should explain the fundamental economic forces that drive the outputs.

CGE models are also sometimes used when they are not the most appropriate tool (we have all heard the expression "when you have a hammer everything looks like a nail.") CGE methods are appropriate when the policy under consideration is likely to have important general equilibrium effects, i.e., when the policy change is large and/or widespread, and when there is a desire to understand the effects of the policy on multiple economic variables. When this is not the case, other methods from the economists' toolbox, such as gravity modeling or partial equilibrium simulation, may be preferred on both transparency and precision grounds.

Finally, there is also sometimes, in my view, too much emphasis placed on the numerical results generated by CGE models, by both policymakers and CGE practitioners. While we hope that the quantitative results of CGE models are reasonable in terms of magnitude and direction, and put considerable effort into ensuring that is the case, the simple reality is that the results of CGE simulations can vary considerably with the assumptions made on the nature of the policy shock, with the underlying theory used by the model, and with the parameterization of the models' functional forms. Rather than focusing on numbers, the very best CGE work is much like the best economic theory – it tells a compelling economic story and highlights the less obvious (and perhaps unintended) consequences of economic policies."

John Gilbert
ARTNeT advisor on economic modeling
Professor of Economics
Jon M. Huntsman School of Business
Utah State University