



John Gilbert
Professor of Economics
Jon M. Huntsman School of Business
Utah State University

Choosing When to Use a Hammer: Some Thoughts on Computable General Equilibrium

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 (including myself). 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.