Integrating Benefit-Cost and Computable General Equilibrium Analysis For Homeland Security Applications

Scott Farrow
UMBC

Statement of work, milestones and deliverables
Objective: A synthesis useful to the Department of Homeland Security and economic analysts on the extent to which a Computable General Equilibrium (CGE) model is or can be theoretically consistent with a benefit-cost framework.
Key issues: 1) the conditions, under which a computable general equilibrium model and a benefit-cost framework are consistent, and 2) specific issues in the application of CGE models that may be different from standard benefit-cost practice when used in a partial equilibrium analysis but which may be consistent with a general equilibrium benefit-cost analysis, 3) application issues such as central or peripheral role of system-wide effects, whether there are distinctions between positive or negative shocks, and whether systematic effects may differ across cost or benefit aggregates including those in the labor market.

Task: Review articles, books and agency practice for conceptual and empirical issues; synthesize, elaborate, or resolve issues then report the findings.
Relevance: CGE models are used in economic consequence analysis for numerous homeland security applications and sometimes interpreted as a benefit-cost based result. Benefit-cost models are used for other management purposes in homeland security. A clearer understanding of their similarities, differences, and equivalence can be useful to analysts and decision-makers.

Milestones and deliverables:
July 1, 2015: initiate project
Summer 2015: research literature
Winter 2015: present preliminary results for feedback to DHS and academic audiences
Early summer 2016: Finalize synthesis in two documents: 1) recommendations for DHS offices using CGE and benefit-cost methods, and 2) an academic article.