Application of dynamically calculated total requirements coefficients to CGE simulation analysis

Topic: CGE and econometric input-output modeling II
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Total requirements coefficients are applicable to analysis of results from computable general equilibrium models. For example, a carbon tax may operate to abate emissions in part by encouraging consumers to switch from more carbon-intensive to less carbon-intensive products. To measure the size of that effect, we need estimates of carbon intensity, which we can obtain as total requirements coefficients; but since the carbon intensities themselves change in response to the carbon tax, these coefficients should be calculated dynamically through the simulation. We develop a method for doing that, and illustrate its application to analysis of the simulated imposition of a carbon tax in an extended version of the GTAP model (GTAP-E).