Empirical estimates of the elasticity of substitution of a KLEM production function without nesting constraints: The case of the Variable Output Elasticity-Cobb Douglas

Topic: Input-Output Theory and Methodology - II
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The outcome of Computable General Equilibrium models applied to climate crucially relies on the estimation of elasticities of substitution. We use a generalized production function that overcomes the restriction imposed by a nesting structure of the Constant Elasticity of Substitution (CES) production function assumed in most CGE models.

Constructing a panel of 44 countries and 14 periods from the World Input-Output Database (WIOD) tables, we estimate the production functions for 54 sectors using a Seemingly Unrelated Regression model. We compare these results to two standard KLEM nesting structures used in CES specification and find direct implications on the estimation results, especially for Capital-Energy substitutability.