Estimation of behavioural Parameters of CGE Models For the 28 EU Countries

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NTTS 2015 - special evening networking session
Objective: Estimating industry behavioural parameters of the 28 EU countries (period to be defined)

- Time-space comparison of estimated parameters vs. macroeconomic theory (e.g., comparison of factor elasticity of substitution within similar industries and period for different countries) => Output consistency

- A higher accuracy of macroeconomic estimated model through more reliable CGE behavioural parameters => Better outcomes
METHODOLOGY

• Statistical data collecting and processing
• GAMS Code for the Non-extensive Cross-entropy Econometrics (NCEE) technique to estimate behavioural parameters (CETS, CET, Armington models)
• Applying the post-NCEE behavioural parameters to the existing EU CGE models
• Interpretation of outputs to be published.

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METHODOLOGY

Main characteristics of NCEE

- A Jorgenson-based econometric CGE model
- Connects the maximum entropy principle with the Bayesian approach
- Possible generalization of classical econometric (error minimizing) approaches
- Nevertheless, a time-consuming estimation technique, due to a difficult setting up of appropriate model optimization starting points.
METHODOLOGY
Classical econometric approaches

Competitive methods to be computed:
- Nonlinear least squares (NLS) approach
- Generalized method of moments (GMM)
- Maximum likelihood (ML).
Preliminary model outputs and concluding remarks

Case study: the 27 EU country aggregated data, Germany, France, Great Britain.

- Outputs from the NCEE technique are stable, irrespective of the involved statistical data and the countries selected.
- Outputs from other techniques sharply change with different data and for different periods. NLLS seems to behave better. ML outputs are worse.