smod_t Exercises

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Outline

- Introduction
- Running the model
- Review model data and structure of the economy
- Load the model and test the model runs correctly
- Trade Policy Shocks
  - Use TMADJ - adjustor variable
  - Tax replacement
  - Factor market clearing
- Analyze the results
  - **Follow the prices – use the price tree diagrams!**
- Sensitivity to elasticity of substitution in CES
- Calibrating Stone-Geary utility functions
- International transfers

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Course Library & Working Directory

- All the files for these exercises are already in your course library
  - `C:\cgemod\cgemod_lib\pract_lib`
- Create a New Project (`File>New Project`)
  - `C:\cgemod\pract\smod\smodt1`
- The library index file in Model Library Explorer
  - `Practical CGE Library`
  - Items 8 & 9 will be used

Create a new directory smodt1, i.e.,
`cgemod\pract\smod\smodt1`

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Exercises

- Exercise 1: Run the base model
  - Access files from the model user library
  - Model checks
  - Analyze the structure of the economy
- Exercise 2: Trade policy shocks
  - Equiproportionate reduction in tariffs
  - Reduce the tariff in a single sector
- Exercise 3: Tax Replacement
  - Replace lost tariff revenue with income taxes

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Exercises

- Exercise 4: Factor Market Clearing
  - Tariff reduction with:
    - Full employment – long run
    - Full employment – activity specific factor (short run)
    - Surplus labour (Unemployment)
- Exercise X (post course!): Sensitivity Analysis
  - Change the elasticity of substitution between imports and the domestic variety

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GAMS Coding Skills

- Run policy simulations in a Loop (review)
  - **Check the simulation is implemented!**
  - Create parameters to collect results
- Write results to GDX files
- Use GAMS Studio to review contents of GDX files
  - Export to Excel
- GDX Merge Utility
  - compare.gms
- Avoids the need to run a Loop within a Loop
  - Reset required
  - Reintialise variables required
- Use include files for experiments

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Interpret Results

- Where does the policy shock affect the price structure?
  - Review the price tree diagrams
- What results do you **expect** to find?
  - Do this **before** you actually look at the numbers.
- What are the direct effects in the market you have shocked?
- What are the indirect effects on other markets?
- What are the general equilibrium effects?

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Stone-Geary Utility Function

- Complete demand systems
- Calibrating a Stone-Geary utility function
  - aka Linear Expenditure System

Normalised elasticities

```
sumelast(h) = SUM(c, alphah(c,h)*ELASTY(c,h)) ;

yhelast(c,h)$sumelast(h) = ELASTY(c,h)/sumelast(h) ;
```

Marginal Budget Shares

```
            beta(c,h)      = yhelast(c,h)*alphah(c,h) ;
```

'Subsistence' consumption

```
qcdconst(c,h)$(PQD0(c) and frisch(h) and beta(c,h))

   = [HEXP0(h)/PQD0(c)]*(alphah(c,h)+(beta(c,h)/frisch(h)));
```

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International Transfers

- Transfers are important international transactions
  - Remittances
  - Aid
  - Factor service payments
  - FDI
  - ….
- The data used assumes these are all ZERO

International transfers can have important economic consequences

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smod_t Exercises

The End

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