



Two Sector Closed Economy CGE Model: Exercises

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Outline

- Introduction
- GAMS model coding
 - Changing sets and data
 - Declaring & Assigning Equations
 - Declaring & Initialising Variables
 - Declaring & Assigning Parameters
- Tax policy experiments
- Changing a Macroeconomic Closure
- Changing a Factor Market Clearing Conditions
- Results
 - Starting to interpret results


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Aims

- Learn to
 - Code a GAMS model
 - Calibrating parameters
 - Generic (GAMS) programming skills
 - Organising code
 - Resolve syntax errors
 - Resolve execution errors
 - Run policy experiments
- Write a policy experiment
 - Make the experiment ‘real’
 - Macroeconomic closure
 - Market clearing
- (Start) interpreting CGE results


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Follow the instructions in the document *2 Sector Model Exercises.pdf*

Start at the beginning and work through each exercise.

Techniques and skills used here will be used repeatedly in the course. We may not do things the way you are used to doing things.

Even if you knew ‘everything’ before you may learn something new.


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User Model Library & New Project




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A New Project & The Course Library


- In C:\cgemod\clmod add new (sub) directory clmod2
- Open GAMS Studio select File>New Project, search for the new directory clmod2 and name the project clmod2.gsp
- The project clmod2 will open in Studio with the path C:\cgemod\clmod\clmod2
- All the files for these exercises are already in your course library - Practical CGE Library
- In Studio open the Model Library Explorer (F6)
- Select the Practical CGE Library
- Select clmod2 (SeqNr: 3) and Load
- Opens clmod2.gms in the project clmod2



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Model Development

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Assigning Equations

- The template (`clmod2.gms`) contains
 - Some set declarations and assignments
 - Some parameter declarations and assignments
 - Some variable declarations and initialisation
 - Some equation declarations
- In this part of the exercise you will
 - Declare and Assign parameter, variables & equations
 - Declare and initialise variables
 - Resolve all syntax and execution errors you cause
- The exercise document provides details for all the stages
 - Most importantly it shows one way to do the coding systematically

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Policy Experiments

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Experiments

- You will code and run six tax policy experiments
 - Each involves three different increases in two tax rates
 - GST
 - Income tax
- Builds on previous coding methods
- For each experiment you will
 - Collate the results
 - Answer questions about the results

The answers to the questions are **VERY** important.
This is an early step in learning how to interpret
the results from CGE models.

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Macro Closure & Market Clearing

- Macroeconomics in CGE models
 - ???What???
 - Closure in macroeconomics
- Market Clearing
 - Voluntary vv involuntary unemployment
 - Asset fixity

Macroeconomic models and closure: Count vv Economics

Who is right:
Keynes, Samuelson, Friedman, Marx, ...??

Policy Analysis for the Real World

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Skills


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GAMS Skills


- Coding a model
 - Sets and data
 - Parameters
 - Variables
 - Equations
 - Checks on the model
- Running Experiments
 - Choosing the ‘right’ model settings
- Collecting results
 - Organising experiment files
 - Organising results files
- Interpreting results
 - Interpretation is critical

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The End

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