

SYLLABUS

Introduction to CGE modeling

Introduction

Economists use several types of models to understand and explain economic phenomena. Among these tools, we find computable general equilibrium (CGE) models.

CGE models are not forecasting tools: they are above all simulation models that attempt to explain the mechanisms of transmission of economic shocks or public policies.

To be able to construct and use a CGE model, an economist must master each of the following aspects, which will be covered during this training:

1. Economic theory. CGE modelling is based on strong theoretical micro and macroeconomic foundations. It is therefore essential that these foundations are well understood by the modeler, both for the construction of the model and for the explanation of the results.
2. National accounting. The statistical basis of a CGE model is the social accounting matrix, a table of economic accounts built on the basis of the system of national accounts.
3. Programming. The resolution of a CGE model requires the use of software; we will use GAMS.

General objective

The objective of this course is to introduce participants to computable general equilibrium modeling. At the end of the course, the students will be able to:

1. Build a social accounting matrix.
2. Develop the theoretical and mathematical structure of computable general equilibrium models and understand the implications of the chosen assumptions.
3. Use GAMS to numerically solve a CGE model
4. Simulate policy scenarios and shocks, and interpret simulation results.

Specific objectives

Specific objectives for each lesson will be indicated at the beginning of the lesson. These objectives must be achieved by the end of each lesson as they are the basic requirements to successfully proceed to the next lesson. This means that at the end of each lesson, the students must be sure to understand the concepts of that session before moving on to the next one.

The students' understanding will be evaluated through regular quizzes and exercises to be done at different times during the session. An individual oral evaluation at the end of the session will complete the participants' evaluation.

Instructional approach

To facilitate learning, a progressive approach is proposed. This means explanations start with simple examples and the complexity of examples increases with the students' increasing understanding.

For each lesson, narrated presentations are available. The lessons also contain exercises and readings to allow the students to understand the notions and concepts. Finally, additional documents are made available to students to enable them to deepen their understanding of certain concepts.

Learning steps

For each lesson, the learning steps will be set out. In general, these steps consist of:

1. Watching the narrated presentation(s).
2. Reading the mandatory texts.

3. Doing the suggested exercises.
4. Making sure the concepts are mastered.

Supervision strategy

Students are encouraged to communicate their questions using the forum available for each session. In the case of a more specific problem, or in case use of the forum is not possible, students can communicate by email with the teacher. A period of availability will be determined at the beginning of the session.

Content and activities

Part 1 - Theoretical Framework

- Lesson 1 - Introduction
- Lesson 2 - Theoretical Framework
- Lesson 3 - A Simple Example

Part 2 - Statistical Base

- Lesson 4 - Social Accounting Matrix

Part 3 - Operationalization

- Lesson 5 - Model AUTA
- Lesson 6 - Model AUTETA
- Lesson 7 - Model EXTER

Part 4 - Applications

- Lesson 8 - PEP Standard model