Taxation in a Computable General Equilibrium (CGE) Model

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Course Description and Objectives

There is a long history in the use of computable general equilibrium (CGE) model for the analysis of taxation. A main reason for this is the fact that a CGE model can often capture many of the complex interactions between different types of taxes, and their effects upon different sectors, agents, or regions in an economy. These interactions are difficult and sometimes impossible to be analysed adequately in a simple analytical model. In this course, students will have a chance to get familiar with the basic concepts and theories used in the construction of a computable general equilibrium model – also known as applied general equilibrium (AGE) model, and then use this framework to analyse the impacts of some important taxes in an economy such as environmental tax or goods and services tax. We will look first at the issue of interactions (or trade-off) between different types of taxes given a particular level of taxation, and then look at the issue of optimal level of taxation which gives rise to the concept of marginal cost of public funds. The interaction between different types of taxes is often known in the public finance literature as the ‘second best’ problem, and this type of problem is best analysed within a CGE model because of its complex nature.

Prerequisites

The prerequisites for the course are:

1. Intermediate level in microeconomics
2. Basic level in macroeconomics, public finance, and trade theory
3. Calculus (constrained optimisation)

Timetable

1. 6 x 1.5 hour lectures.

Course Grading

The grading for this course will be based one final examination (100%) at the end of the course at a time convenient to students and agreed upon by the lecturer. Some home works may be given at students’ request if they feel this will help them in understanding the lectures and preparing for the final exam.
Course Outline

1. **Taxation in a First Best and Second Best Economy (2 lectures)**
   - Revision of basic taxation theories: first best and second-best theories.

2. **Computable General Equilibrium Modelling of taxation issues (3 lectures)**
   - Basic structure of a CGE model and how taxes fit into this structure.
   - Use of a CGE model to analyse some taxation issues:
     - Environmental tax, goods and services tax, labour income tax.
     - The concepts of excess burden of a tax and the marginal cost of public fund

3. **Some Empirical Examples (1 lecture)**
   - Analysis of the results from a practical CGE model of taxation.

References

There are no particular textbooks or references required for the course. All lecture and tutorial materials will be handed out to students during the course. The following comprehensive reading list, however, may prove to be useful to students who want to have an idea of what the course is all about. However, students should note that some of the materials contained in these readings may be highly specialised and advanced, therefore students should not be discouraged because of the difficult technical content of the references or the wide range of the topics. Where necessary, any advanced materials to be covered will be thoroughly explained during this course and given the short time period for this course, only selected issues of interests to students are covered in the course.

1. **Taxation in a First Best and Second Best Economy (2 lectures)**

2. **Taxation in a Computable General Equilibrium Model (3 lectures)**


3. Some Empirical Examples (1 lecture)


