

Objectives

The objective is to study the modeling of “feedback” externalities in a general equilibrium context with a particular emphasis on public finance and transport issues. These are externalities where the level of the externality affects the generation of the externality itself. Typical example is traffic congestion: the more cars are used on a given road segment, the lower the average speed; the lower is the average speed, the lower will be the demand for car use.

There are many more examples of this but the feedback feature is not always modeled.

Lecture material

The lecture material will consist of a selection of academic papers + lecture slides.

Structure of the Lectures

1. Introduction

Discussion of the problems in the traditional externality modeling in partial equilibrium models (no feedback in externality, no other distortions, no income distribution issues) and what a general equilibrium approach can offer.

2. Model of Health effects of externalities

Williams R., “Health effects and optimal environmental taxes” J. Pub Econ, 2003

This model is a simple extension of the typical double dividend type of papers that tend to focus on separable externalities that do not affect the consumption of taxed goods.

3. Model of traffic congestion externalities and the supply of labour

Parry I., Bento A., “Revenue Recycling and the Welfare effects of road pricing”, Scand.J.Econ, 2001

This AGE model is a more complex and more structured extension of the typical AGE model with specific attention and structure for the effect of the externality (congestion) on labour supply.

4. Model of freight and passenger traffic with congestion

Calthrop, E., De Borger B., Proost S., (2003), "Tax reform for dirty intermediate goods: theory with an application to the taxation of freight transport", Discussion Paper

AGE model where one can only address one of the two origins of the externality problem (trucks but not cars).

5. Model of tax reform, traffic congestion and income distribution

Mayeres I., Proost S., (2001) "Marginal tax reform, externalities and income distribution", J. Pub. Econ

AGE tax reform model that includes explicitly income distribution issues

6. Model of traffic congestion and imperfect competition

de Palma, A., Proost S., (2006) « Imperfect competition and the city », forthcoming in J. Urban Econ,

simple model that allows to show how to treat feedback externalities in the presence of another market distortion than existing taxes.