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General Notes:

First four classes - Microsimulation

Last four classes - Macrosimulation

Practical Evaluation - Python completing code

Lecture 1: Microsimulation in Static Models

Where as random control trials and natural experiments measure the impact of a policy *ex post*, micro and macro simulations were created to find the impacts *ex ante*.

Model Complexity

Population Complexity

Static model with no temporal element.

You have a database of a population with as many characteristics as you can gather about them.

See how this is effected by a proposed policy.

Behavioural Complexity

Temporal (Dynamic) Complexity

Spacial Complexity

Typology of microsimulation models

Hypothetical Model

Models tested using an synthetic/artificial population of households/individuals.

Used for:

- Illustrative purposes
- Validation
- Cross country comparisons

Limitations

As you can imagine this method has its own issues

- Limited heterogeneity
- Lack of representativeness
- Will often disregard detailed aspects of policy that matters a lot

Static Models

Models which use some form of micro-data, but no behavioural or temporal conditions. This method provides a focus on the complexity of a policy interacted with the complexity of population & “day after reform” effects

Behavioural Models

Dynamic Models

Static Models

Baseline Data

First you must build it:

- Using Admin data and Survey Data

Then you must maintain it:

- This brings a lag of a few years often

Coding Policies

Behavioural Responses and Dynamic Models

In previous lecture we saw models with no behavioural dynamics and no time dimension.

Structural Models

Reduced Form