

Causality & Approaches in Applied Micro

Applied Microeconomics

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I now take causal relationships to be the fundamental building blocks both of physical reality and of human understanding of that reality, and I regard probabilistic relationships as but the surface phenomena of the causal machinery that underlies and propels our understanding of the world.

Judea Pearl, Causality (2009)

One recurring theme is the triumph of explaining over evaluating: while we are adept at generating models to explain evidence, we are less capable at evaluating these models against the evidence. We can reason from evidence, but not so readily about the evidence or about the relation between our model and the evidence.

David Lagnado, *Explaining the Evidence: How the Mind Investigates the World* (2021)

Structural work until 1990

- Cowles commission's SEM
- Practice in non-GE models:
 - Derive simple choice model from theory
 - Implement as linear model + unobservables ("error")
 - "Introduce heterogeneity in a clever way so you can immediately take it out again" (Browning and Carro, 2005 ESWC)
- Leamer (1983) – reproducibility on various levels

1990s-2000s 1: LATE & friends

- Ashenfelter, Card, Krueger, Angrist, Rubin, Imbens, ...
- Exploit exogenous variation allowing for heterogeneous responses
- Dispose of economic models altogether

1990s-2000s 2: Lab experiments

- Smith, Selten, Roth, Camerer, Fehr, Loewenstein...
- Direct tests of economic theory (individual, strategic interactions, competitive markets)
- Tight experimental control
- Measurement of things that could not be measured before (beliefs, emotions, strategy profiles...)

1990s-2000s 3: More realistic structural work

- Eckstein, Keane, Wolpin, Rust, Attanasio, Blundell, ...
- Often based on dynamic programs
- Rational expectations

Since 2010: Convergence on many dimensions

- Exogenous variation alone not enough to publish well, mechanisms important
- Structural model without exogenous variation unpublishable
- Lab taken to the field, individual-level estimation
- Heterogeneity taken serious everywhere
- Beliefs, cognitive limitations taken serious more and more

Key impediment: Selection

- Why do some people end up with "treatment" and others without?
- Roy model is standard framework
- Will spend some time on this in the beginning