

# Causal Parameters, Structural Equations and Treatment Effects

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## Abstract

The evaluation of public policies is a central task of economics and statistics. Two distinct approaches are currently pursued in evaluating microeconomic programs: (a) the structural equation approach based on scientific models and (b) the treatment effect approach. This lecture examines the benefits and limitations of each approach and the role of social experiments in recovering the parameters required to answer different questions using each approach. We consider the policy evaluation problem, the problem of causal inference, and the policy forecasting problem. We establish how treatment effects approximate well-defined causal effects. We present a *ceteris paribus* model-based definition of causal effects that economists have used since the time of Marshall (1961 version of 1890 edition). We compare this definition with a recent model-free definition of causality presented in the statistics literature as the Rubin (1978) model. We argue that the Rubin model is incomplete and a poor guide to science.