Prompt for Modeling Workshop
James Sallee
ARE 264

Policymakers wish to promote a new, environmentally friendly technology in some consumer product category. The government has allocated some fixed revenue to be distributed in the form of consumer-side subsidies for adoption of these goods. There are a handful of products that embody the new technology available in the market, sold by different firms. The goal of policy is to maximize the quantity of sales of the new technology, given the budget. Policymakers also appear to be concerned about equity implications of who gets the subsidies.

You have estimated a demand model for products that use the new technology. There are several different products on the market, some better selling than others. You have estimates of the demand system for these different products, and you have estimates of how demand varies with basic demographic attributes (e.g., income).

Your plan is to write a paper that has three pieces: a theory model, these demand estimates, and some policy simulations that use the demand estimates to shed light on the theory.

(For a concrete example, imagine that the technology is Energy Star certified refrigerators, and you want to maximize the market share of these green products given the current product offerings and a fixed budget to spend on subsidies.)

The goal of your theory section should be to provide a model that gives principles for how subsidies should be structured so as to maximize diffusion.

Before class, think about this problem. I am not asking you to write, or even outline, the theory section. But, think seriously about what questions you might want to answer, what things need to be in the model, and how to pick notation and get started.

Most importantly, spend some time writing down a model that begins to address the problem.

The goal here is to give you some context, but also give you a not completely standard objective, and then to face you with a "blank piece of paper". How do you get started?