ECON 100A - Section Notes
September 18, 2025

GSI: Clotaire Boyer

Quick reminders on the course notions

Reminder: An inferior good is one whose demand falls as income rises ($\partial q/\partial y < 0$). A Giffen good is a special inferior good where, due to a strong negative income effect outweighing the substitution effect, demand rises as its own price rises; the follwoing example is good: coarse staples like 19th-century Irish potatoes. Why is this potato example relevant? Poor households consumed potatoes as their staple, with little substitution possibilities. When the potato price rose, two effects competed:

- Substitution effect: normally pushes people away from the now more expensive good.
- The income effect is the story for Giffen goods!! Here, higher potato prices drastically reduced real income, forcing households to cut out more expensive foods (like meat, bread) and consume even more potatoes to survive.

Because the negative income effect dominated, demand for potatoes actually increased as their price went up!

Veblen goods, which have similar looking demands are instead about exclusivity and perceived social value mechanisms.

Demand Function. A *demand function* describes the relationship between the quantity demanded of a good, Q, and its determinants, typically the good's own price P, income Y, and possibly the prices of other goods. Formally, we may write:

$$Q = D(P, Y, P_{-i}),$$

where P_{-i} denotes the vector of other goods' prices.

Representations. Two common ways to represent demand are:

- **Level form:** $Q = D(P)$, emphasizing how quantity changes with the price level.
- **Logarithmic form:** $\ln Q = f(\ln P)$, emphasizing proportional (percentage) changes.

Elasticity of Demand. Elasticity measures the responsiveness of demand to price changes. It can be expressed as:

$$E = \frac{dQ}{dP} \cdot \frac{P}{Q} \quad \text{(derivative–ratio form)}$$

or equivalently as

$$E = \frac{d \ln Q}{d \ln P} \quad \text{(logarithmic form)}.$$

Practice

1. WARP with Two-Good Budgets

In each of the three situations depicted on the board, you have observed the decision maker face the budget set bounded by line A and choose $c(A)$. If you also observed their choice from the budget set bounded by line B, what choices from that budget would be *consistent with WARP* and what choices would *violate WARP*? Be as specific as possible, and explain your answers.

2. Demand Elasticity

- A consumer has utility $u = 2lnx1 + x2$, has income m, and faces prices p1 and p2. Use the tangency method to find the consumer's demand functions. Derive an expression for the consumer's price elasticity of demand for good 1. Explain what you find
- What kind of things do you think might have price inelastic / price elastic demand?
- Brainstorm some examples of people who might want to know the price elasticity of demand of something and why.
- (Harder: IO research related). Can you point out specific issues regarding identification of demand for an empirical researcher ? Can economists just regress the quantity demanded on the price for a given good?

3. Demand under Kinked Budget Constraints

Three people have preferences represented by the utility functions $u1(x1; x2) = min(x1; x2)$, $u2(x1; x2) = 3x1 + 2x2$, and $u3(x1; x2) = -x1 - 2x2$. What bundle would each person pick if faced with the budget set pictured on the board? In each case, briefly explain some intuition for why.