ECON 100A - Section Notes
October 21, 2025
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RR3: Amartya Sen, "The Possibility of Social Choice"

1. **Arrow's framework vs. Sen's informational expansion.** Precisely state Arrow's key conditions (Unrestricted Domain, Pareto, IIA, Non-Dictatorship) on an *ordinal, interpersonally non-comparable* informational base.
   (a) Explain why this informational base is pivotal to the impossibility result.
   (b) Describe *two distinct routes* Sen highlights for restoring possibility: (i) permitting *interpersonal comparisons* (cardinal or at least ordinally comparable utilities/welfares), and (ii) enriching the informational base beyond utilities (e.g., rights, capabilities).
   (c) For either route, give a concrete social choice rule (or axiomatic relaxation) that becomes admissible once the informational base is broadened, and explain what Arrow axiom is effectively weakened or reinterpreted.

2. **Incompleteness and partial social orderings.** Sen emphasizes that a *complete* social ordering is not always necessary; *incomplete* (partial) social rankings can be normatively and practically meaningful.
   (a) Define a complete preorder versus a partial preorder on the set of social states.
   (b) Construct a simple profile (three alternatives, at least two persons) where insisting on completeness forces controversial interpersonal judgments, but allowing incompleteness avoids dictatorship or cycling.
   (c) Discuss how *public reasoning* can subsequently refine an incomplete social ordering, and why Sen views this openness as a strength rather than a defect.

3. **From welfarism to capabilities.** Sen argues for evaluating states via people's *capabilities* (feasible functionings) rather than utilities alone.
   (a) Define utilities, functionings, and the capability set. Explain what informational gains the capability approach brings relative to welfarism.
   (b) Provide a short example where two social states are utility-tied (or utility-misleading) but rank differently once capabilities (e.g., health, literacy, mobility) are considered.
   (c) State one normative consideration from the lecture (e.g., agency/freedom) that motivates capabilities over utility metrics in social choice.

4. **Applications: inequality, poverty, and practical social choice.** Sen connects social choice theory to measurement and policy assessment.

(a) Explain how allowing interpersonal comparisons and/or non-utility information underpins modern inequality/poverty measures (e.g., dominance tests, axiomatic poverty indices).

(b) Outline a brief procedure (two or three steps) showing how a policy evaluation could proceed with (i) partial social orderings and (ii) publicly reasoned value judgments about capabilities, noting where Arrow's constraints would have blocked aggregation.

Section Exercises

Problem 1

Tsunoda Corp. produces sushi (s) in a perfectly competitive industry with the goal to maximize profit. Their cost function is given by:

$$c(s) = 500 + 0.5s + 0.05s^2.$$

The market price of sushi is p.

1. Write Tsunoda Corp.'s profit function. Find their optimal choice of s as a function of p. Sketch their supply curve on the usual axes.

2. Based on the information we have, do we know how much economic profit Tsunoda Corp. will make in the short run? Why or why not? What about in the long run?

Problem 2

Jim Corp. produces economics quiz questions (y) using the inputs cups of tea (input 1, t) and hours of labor (input 2, L). His daily output when he uses t cups of tea and L hours of labor in a day is given by $y = 4\sqrt{t} + 0.5L$. His current production plan uses 4 cups of tea and 12 hours of labor per day.

1. Find the marginal product of each input and the technical rate of substitution, given this production function. What value do each of those three things take at his current production plan? Explain what each of those things means in simple terms

2. Does this production function have increasing, decreasing, or constant returns to scale? What does that mean, in simple terms? What does your answer tell us about the nature of Jim Corp.s isoquant map and why?

Problem 3

Masa is an economy of one. As a profit-maximizing producer, he operates *MasaFilm*, which makes movies (y) using a single input, labor (l), with production function:

$$y = 6\sqrt{l}.$$

As a utility-maximizing consumer, he is the sole owner of *MasaFilm* and so receives its profit, and is the sole supplier of labor to *MasaFilm*. He likes watching movies and dislikes working, with utility function:

$$u = 3y - \frac{9}{2}l^2.$$

Let the price of movies be normalized to 1, and let the wage rate be w.

1. Set up and solve *MasaFilm*'s profit maximization problem to find its optimal output y_S^*, its optimal labor demand l_D^*, and its profit π, all as a function of w. In a sentence or two, explain in simple terms why it would be worse for *MasaFilm* to produce a little bit more than y_S^*.

2. Set up and solve Masa the consumer's utility maximization problem to find his optimal demand for movies and his optimal supply of labor as a function of w. Then find and write down a competitive equilibrium in this economy.