Overview:
Bringing Firms Into Wage Determination

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Pure efficiency units models keep firms in background.

Let $\bar{L} =$ aggregate labor, $\bar{K} =$ aggregate capital.

$$Y = F(\bar{L}, \bar{K})$$

$$w = \frac{\partial F}{\partial \bar{L}} \quad r = \frac{\partial F}{\partial \bar{K}}$$

No theory of which workers and firms are matched.
Bring back the identity of firms to develop a theory of matching and heterogeneity.

Issues: How to match workers to firms?

- Trivial in the case of pure efficiency units models.
- Not so trivial when workers have different efficiency at different firms.

We start our investigation under the assumptions of perfect certainty on both sides (No private information).

No transactions costs (mobility costs).
Gorman-Lancaster is multi-attributed efficiency units model

- An efficiency units model makes the identity of the firm irrelevant (workers equally productive at all firms)—a model of general human capital. Rearrange workers among firms and get no change in output at each firm as long as total efficiency units the same in each firm.

- A model with comparative advantage emerges if workers have different advantages in different sectors but assignment of a worker to a sector does not preclude any other worker going there. Sectors may be firms or industrial sectors. Now sorting matters—and a nontrivial labor supply function and demand for labor function emerges.
The Guiding Principle is Neither Comparative Nor Absolute Advantage

1. It’s opportunity cost.
2. Place worker A at firm $\alpha$.
3. Means worker B can’t go to firm $\alpha$.
4. Not just relative productivity, but who is best relative to the next best allocation determines the assignment. Continuous versions — worker and firms have close substitutes.
5. Discrete version (Koopmans–Beckmann) — no close substitutes. (Raises rent division problem).
The discrete version requires no notion of comparing the “quality” or “efficiency” of any 2 workers (no need for a scale of labor quality).

Roy model is a model of comparative advantage (at least consistent with comparative advantage).