EC9AA Term 3: Lectures on Economic Inequality

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- **Supplement 3 to Slides 1**: Endogenous Information-Gathering

Supplement 3: Endogenous Information-Gathering

- Recall our question:
  - What explains the high rates of return to the rich?
- Two broad groups of answers:
  - The rich have access to better information on rates of return
  - The rich have physical access to better rates of return.

Investing in Investment

- A theory of individual-specific r:
  - Higher individual wealth $\Rightarrow$ higher rate of return on it.
  - More effort spent on gathering information.
- Compare/contrast with "efficiency wage" models:
  - Deliberate investment in information yields the higher rate

    unlike nutrition-effiency, but similar to dynamic incentives
  - Payoff is multiplicative (on r) as opposed to additive

    other "efficiency-wage" models generate level effects

A Model of Investing in Investment

- Individuals with more financial wealth will spend more effort finding good rates of return on it.
  - Simplest model of this:

$$\sum_{t=0}^{\infty} \delta^t \frac{c_t^{1-\theta} - 1}{1-\theta},$$

where $\theta > 0$, and

$$c_t = (1 + r_{t-1})F_{t-1} + w(1 - e_t) - F_t,$$

and

$$r_t = \Psi(e_t)$$

  - F: financial wealth, w: wage rate, and e: informational effort.
  - Ψ concave.

A Model of Investing in Investment

- Familiar Euler equation for choice of F_t:

$$\left(\frac{c_{t+1}}{c_t}\right)^{\theta} = \delta r_t$$

- Slightly less familiar Euler equation for choice of e_t:

$$\left(\frac{c_{t+1}}{c_t}\right)^{\theta} = \delta \frac{F_t}{w} \Psi'(e_t).$$

- Proposition. Individuals with a higher ratio of F to w earn a higher rate of return, and grow faster, even if the effect on their savings rate is ambiguous.

  - Proof. Combine the two Euler equations and definition of r to see that

$$r_t = \frac{F_t}{w} \Psi'(e_t) = \Psi(e_t)$$

    for all t. Now prove the proposition by contradiction.

  - Note: s and r reinforce each other when $\theta < 1$.

A Model of Investing in Investment

- Or you can have your cake and eat it too. Consider

$$c_t = r_{t-1} F_{t-1} + w - z_t - F_t,$$

  where $r_t = \Phi(z_t)$ (e.g., paying an expert to do your research).

  - Then Euler equation for z is given by

$$\left(\frac{c_{t+1}}{c_t}\right)^{\theta} = \delta F_t \Phi'(z_t),$$

- Proposition. Those with higher F earn higher rates of return.

  - PS: Contrast the two propositions.