Wage Inequality and Segregation by Skill

Kremer, M., & Maskin, E. (1996). **Wage inequality and segregation by skill** (No. w5718). *National bureau of economic research.*

Link

- growing wage gap based on education
- less common for low and high skill workers to work in same firm
- model low and high as imperfect substitutes
- When mean and variance of skill increase, firms have to specialize in one over the other.

Consider firm which needs two tasks done, and hires labor q (assistant) and q' (manager) to do each.

$$f(q, q') = q^c + q'^d \equiv qq'^2$$

Better to assign high skill employee to manager position.

- one-good economy
- exogenous distribution of workers of different skills
- indefinite supply of firms, same production funciton
- dispersion of skill distribution decreases dispersion of skill between manager and assisstant.
  - Example: two people with skill L, two with H
  - Should the be matched by skill or should low-skill be paired with high
  - cross-matching makes sense if

$$L^3 + H^3 < 2LH^2$$

    , which happens if

$$H < (1 + \sqrt{5})L/2$$

- Two competing effects:
  - Assymetry between tasks promotes cross-matching (high skilled all managers),
  - but complementarity promotes assortive matching

Example with wages

- three skill levels: $L < M < H$
- population x with skill L, x with skill H, more than $2x$ with skill M.
- $H < (1 + \sqrt{5})L/2$, so no self-match for H or L types
- Both H and L types should be matched with M types because $LH^2 + M^3 < LM^2 + MH^2$
- There will be some M types left over.
- Assume workers absorb all revenue. Then:
  - M-types in M,M firms earn $w(M) = M^3/2$
  - Other M types earn the same
  - L types in L,M firms earn $w(L) = LM^2 - w(M) = LM^2 - M^3/2$
  - H types in H,M firms earn $w(L) = MH^2 - w(M) = MH^2 - M^3/2$
- what happens when M skill increases?

$$\frac{d}{dM}w(L) = 2LM - \frac{3}{2}M^2$$

$$\frac{d}{dM}w(H) = H^2 - \frac{3}{2}M^2$$

- If $L \approx H$, then a marginal increase in M causes $w(L)$ to rise and $w(H)$ to fall.
- test

Tangential idea. To what extent does a private school paying teachers lower the quality of public schools.