Discussion of
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The Macroeconomics of Labor Markets in Europe and the US

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The Missing Swedish Skill Premium

- An interesting new fact
  - Swedish skill premium fell dramatically 1970-1990

- A plausible explanation
  - Expanding public sector demanded more unskilled labor
  - Competitive labor markets in the private sector

- A calibration to show the explanation works quantitatively
Calibration exercise

- Production function with K-S complementarity (KORV 2000)

\[ y_t = A k_{s,t}^\alpha \left\{ \theta_u h_{u,t}^\sigma + (k_{e,t}^\rho + \theta_s h_{s,t}^\rho)^{\sigma/\rho} \right\}^{1-\alpha/\sigma} \]

- Perfectly competitive labor markets

\[ \frac{w_{s,t}}{w_{u,t}} = \frac{\text{MPS} (k_{s,t}, k_{e,t}, h_{s,t}, h_{u,t}; \theta)}{\text{MPU} (k_{s,t}, k_{e,t}, h_{s,t}, h_{u,t}; \theta)} \]

- Investment-specific technological progress

\[ k_{e,t+1} = (1 - \delta_e) k_{e,t} + p_e,t (y_t - c_t - i_{s,t}) \]

- Calibration

  - \( k_s (r_{s,t}, h_{s,t}, h_{u,t}; \theta) \) and \( k_u (r_{s,t}, h_{s,t}, h_{u,t}; \theta) \) from FOCs capital
  - \( r, \delta_{s,t}, \delta_{e,t} \) and \( p_{e,t} \) from literature (same both countries)
  - \( \theta = (\theta_u, \theta_s, \alpha, \rho, \sigma) \) calibrated/estimated for each country
Calibration exercise: assumptions

- Interest rate and depreciation rates same in both countries
  - Rental rates same in both countries
- Production function different between countries
  - Capital inputs different between countries
- Fall relative price equipment (5%/year) same in both countries
  - Capital equipment tradable
  - Technological progress same in both countries
- Capital-skill complementarity
  - Skill-biased technological progress same in both countries
Capital-skill complementarity

Figure 1. Two measures of changes in capital equipment prices: Gordon's vs. The NIPA's (%).

Figure 3. The skill premium: Skilled vs. unskilled wages per hour (normalized with 1963=1).

Krusell, Ohanian, Rios-Rull and Violante (2000)
Relative price: DiCecio (2005); Cummins and Violante (2002)
HP filtered (smoothing parameter 1000, annual data)
Capital-skill complementarity?

Response skill premium to investment-specific shock

Balleer and van Rens 2008
Capital and skill appear to be substitutes (1979-2000)

- Skill-biased technology shocks increase relative price
- Investment-specific shocks decrease the skill premium
Calibration exercise: results

United States: model predicts evolution skill premium well (Krusell, Ohanian, Rios-Rull and Violante 2000)
Sweden: model predicts premium in *private* employment well, but does not match the dramatic decrease in total employment.
Calibration exercise: results

Sweden: model predicts premium in *private* employment well, but does not match the dramatic decrease in total employment.
Interpretation of the results

- If public sector were the same as the private sector
  - Skill premium would have remained constant 1970-1990
  - Increase supply of skill = increase demand (SBTC)
- But skill premium fell dramatically
  - Supply of skill same for both sectors
  - Public sector demand unskilled labor increased
- Parameters aggregate production function changed!
Public sector demand for unskilled labor increased.

Relative demand for skill, private sector / total employment

![Graph showing the relative demand for skill, private sector vs. total employment from 1970 to 2000. The graph indicates a consistent increase over time, with a notable rise in Sweden compared to the U.S.](image-url)
Suppose wages equal marginal products also in the public sector

- Production function requires more unskilled labor &
- Public sector expanded
  - Public employment increased by 15% of the labor force
  - Expansion was 100% unskilled (day care)

Suppose the public sector labor market is not competitive

- Skill premium lower in public sector
- Excess supply of low skilled workers, excess demand high skill
- Search frictions → unemployment rate increased for low skilled workers
  - Gomes 2008