

Discussion of
Rising skill premium? The role of capital-skill
complementarity and sectoral shifts in a two-sector
economy
by
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Introduction

- Intriguing observation for Japanese labor market:
 - ▶ shrinking skill premium
 - ▶ rising sectoral wage gap
 - ▶ rising share of unskilled labor in non-manufacturing
- Contrast with pattern in most other countries, where the skill premium (college versus high-school graduates) has increased
- The authors propose a joint explanation of these observations: falling capital-skill complementarity in non-manufacturing sector
- Krusell, Ohanian, Rios-Rull, Violante (2000): capital-skill complementarity explains most of inequality increase in U.S.

The stylized facts

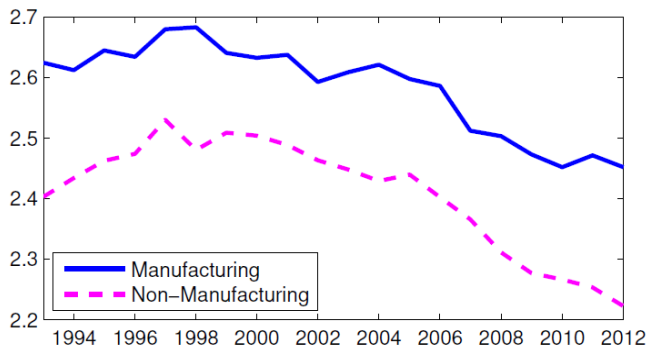
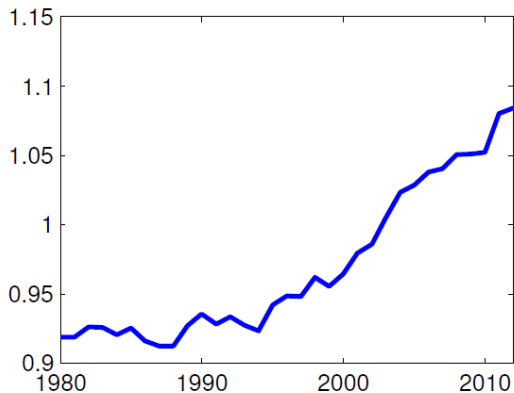


Figure 1: Skill Premium

The stylized facts



(b) Manufacturing to Non-Manufacturing Wage Ratio

The stylized facts

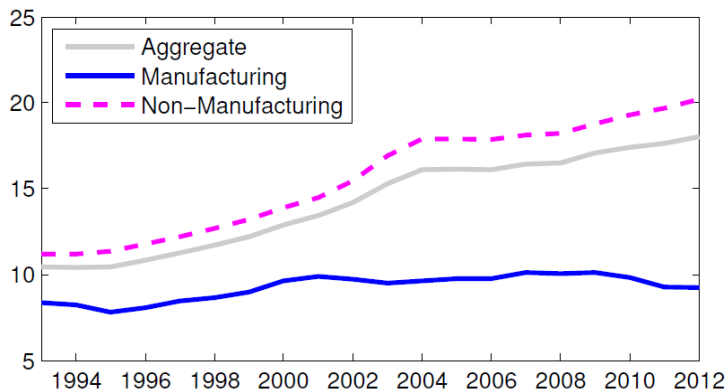


Figure 4: Fraction of Total Hours Worked by Part-time Workers (%)

The stylized facts

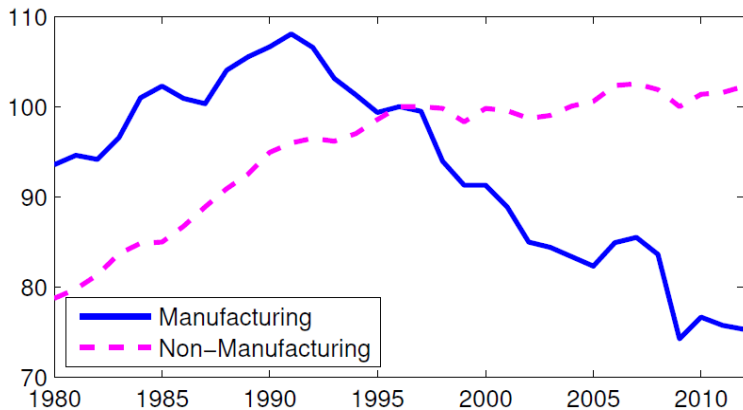


Figure 5: Sectoral Labor Inputs (1996 = 100)

Capital-skill complementarity: how does it work?

- Production function

$$Y_t = A_t \left[\mu (\psi_{u,t} U_t)^\sigma + (1 - \mu) (\lambda K_t^\rho + (1 - \lambda) (\psi_{s,t} S_t)^\rho)^{\frac{\sigma}{\rho}} \right]^{\frac{1}{\sigma}}$$

where μ and λ are parameters that govern income shares; and σ and ρ govern elasticity of substitution between unskilled labor, capital equipment, and skilled labor.

- capital is more substitutable with unskilled labor than with skilled labor: capital-skill complementarity
- Krusell et al. (2000):
 - ▶ rising skill in workforce lowers the skill premium through a quantity effect, but
 - ▶ higher complementarity of skills with capital and subsequent substitution of production away from unskilled labor led to rising skill premium, offsetting the quantity effect
- Hara, Katayama, and Kato aim to explain a falling skill premium

Why is rising share of skilled workers not enough?

- In Japan, skill supply has also risen since the 1990s: increased share of female college graduates (among highest in the world)
- But the skill premium has slightly fallen, even though the capital skill complementarity is even higher in Japan than in U.S.
- HKK
 - ▶ distinguish manufacturing and non-manufacturing sectors
 - ▶ propose an offsetting technological effect: capital-skill complementarity has fallen in non-manufacturing; low skill not substituted away
 - ▶ This leads to an increase employment of low-skill workers in non-manufacturing, with an upward pressure on wages
 - ▶ At the same time, it lowers the relative demand for high-skilled workers, keeping their wages subdued.

Quibbles

- Measurement
- Econometrics
- Alternative explanations

The data

- HKK associate more part-time workers with more low-skilled workers, show that share of part-time workers has increased
- But also: higher share of part-time among college graduates
- It seems that there are more high-skilled, part-time workers
- The authors argue that this is a good proxy, but it is not quite clear yet why they do not use a direct measure of skill
- Part-time versus regular work is an occupational feature
- They may be many high-skilled workers in low-pay jobs
- There is also the phenomenon of *freeters*: high-skill university graduate who only find part-time or temporary work

The econometrics

- The authors use data from various sources to estimate the economic structure of the model, ending the sample in 1995
- This is point when trends in the Japanese labor market changed
- Then, HKK conduct a counterfactual analysis, searching for the change in structural parameters that generates observed change
- Three comments:
 - ▶ Why not use full sample? and/or
 - ▶ Why not allow for time-varying parameters in estimation? or
 - ▶ Why not estimate model for later data window?
- If there is something in the data, something should show up in the estimates based on data from 1995 to, say, 2012

Alternatives

- Does the model allow for alternatives? Trade? Market structure?
- One alternative (or complementary) story from The Economist:
 - ▶ High-skilled female labor supply is among highest in world
 - ▶ But: in 2012, women made up an increasing share of Japan's temporary and part-time workforce. Now at 77%
 - ▶ Too few women in professional, technical, or managerial roles
 - ▶ Cooperate culture discriminates against women
- The falling skill-complementarity in non-manufacturing could reflect an inefficient allocation of high-skilled workers (particularly women) to low-skilled jobs.
- Nonetheless, they are high-skilled, so salaries are higher than for low skilled workers: hence the skill premium does not seem to rise

Suggestion on interpretation

- Give a summarizing view of Japanese economy: what is it that makes the structure so different?
- What does the finding mean? Technological opportunities should be the same across the world? Is it lack of competition in services sector? The corporate structure in manufacturing? Labor market regulation, or product market regulation, impediments to entry?
- Women's labor force participation?
- What are the policy implications? Is this a good sign or a bad sign?

Conclusion

- Interesting paper on an interesting issue: makes the reader think
- It may be good to expand the empirical analysis, estimate model over whole sample, or over a later window of data.
- Findings relate to outcomes in terms of jobs and occupations, need to know a little more about worker characteristics (age, gender, education,...).