Discussion on “Universities and the Rise of Services”

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May 2026

Summary

Question: How do universities shape spatial variation in structural change?

- **New mechanism:**

  University $\longrightarrow$ **new tasks** that use high-skill worker in service

  $\longrightarrow$ raises high-skill demand in service (relative to manufacturing)

- **Key implications:**

(1) higher skill wage premium

(2) **task reallocation**: old tasks (used by manufacturing) switch to low-skill labor

Motivating evidence: regions with (top) universities tend to

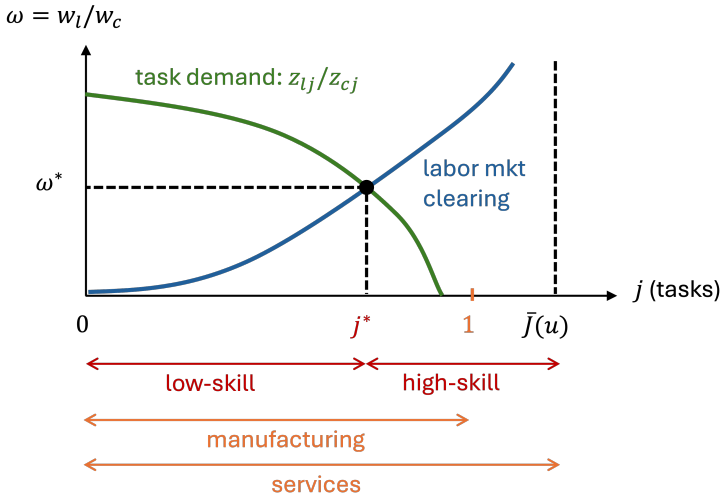
1. experience bigger structural changes (manuf. ↓, service ↑)

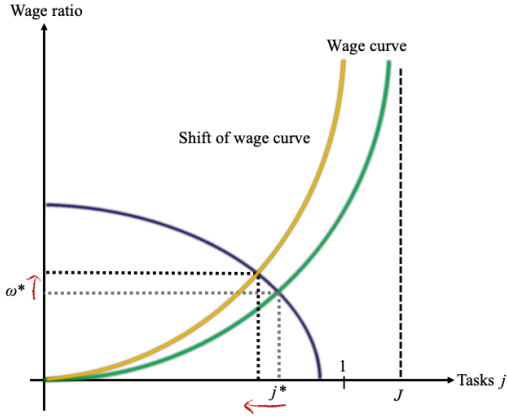
   IV: university site-selection winner vs. runner-up (Andrews 2023)

2. experience bigger **increase in skill premium**
3. become more concentrated in **new-title creating** occupations

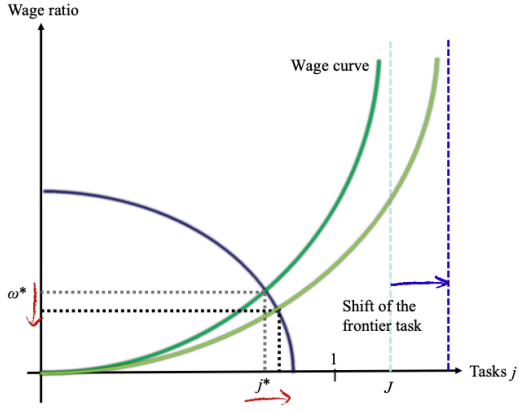
Theory:

- **simple model:** new tasks ⟶ structural change, higher skill premium, task reallocation
- **full model:** quantify magnitude; decompose channels


$\omega = w_l/w_c$
task demand: z_{lj}/z_{cj}
ω^*
labor mkt clearing
j (tasks)
0
j^*
1
$\bar{J}(u)$
low-skill
high-skill
manufacturing
services



(a) Supply of High-skilled Labor



(b) Innovation

Discussions

- Overall:
  - Novel mechanism with insightful economic intuition!
  - Very clear illustration and writing
  - I am motivated by the evidence
- **Two Main comments on further highlighting the contribution**
- Some thoughts on (future) quantitative analyses

Comment 1: direct evidence on task use by sector and skill

Key assumption:

- New tasks are more skill-intensive
- New tasks only used by services
- Manufacturing tasks are less skill-intensive **(✓ literature)**

Model predictions:

- University ⟶ new tasks ⟶ structural change & ↑ skill premium **(✓ Facts 1-3)**
- New tasks ⟶ task reallocation toward low-skill, especially in manufacturing

Sector-by-skill income shares can be informative!

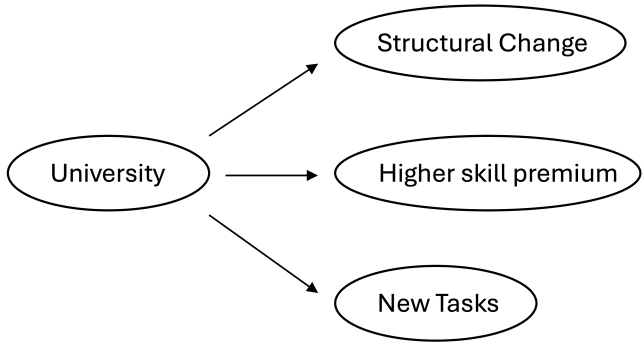
Occupational-level correlation:

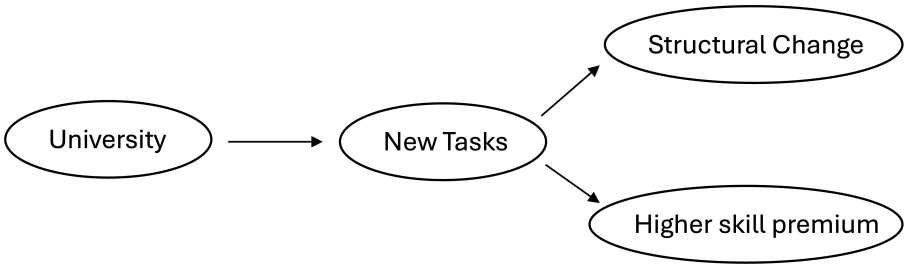
- new-task index $\longleftrightarrow$ skill intensity
- new-task index $\longleftrightarrow$ sector intensity

Regional-level: (can use Fact 3 as first-stage)

- (University $\longrightarrow$) more new tasks $\longrightarrow$ Facts 1 and 2
- (University $\longrightarrow$) **more new tasks $\longrightarrow$ Δ skill intensity (manuf. vs. services)**

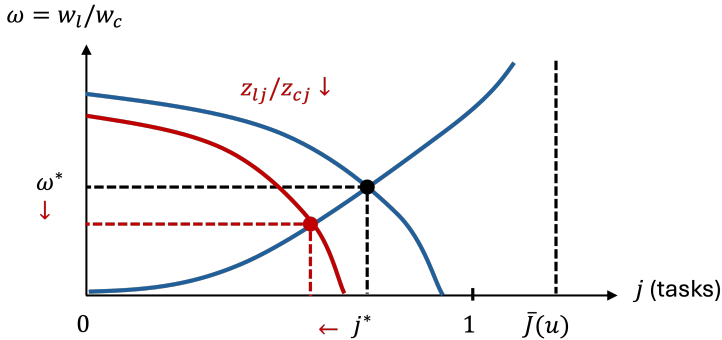
Can use as calibration or external validation for quantitative model


Structural Change
University
Higher skill premium
New Tasks


University
New Tasks
Structural Change
Higher skill premium

Comment 2: universities can also improve skill-biased productivity (z_{cj}/z_{lj})

- Conventional direct effect of education (school quality)
- Also raises demand, consistent with Facts 1 and 2
- But **opposite task allocation!**



Quantitative analyses

Current draft: (already addressed comments 1 & 2, but implicitly)

- allow cross-region variation in both $\Delta\mathcal{J}$ and $\Delta(z_l/z_c)$
- quantify using sectoral skill intensity and decompose

Would also be interested to see (in future work) …

- counterfactual that highlights the **interaction** between two mechanisms
- policy: national vs. place-based university subsidy?

Conclusion

- Great work! Novel and insightful mechanism
- To highlight the contribution, ...
  - bring in direct evidence: sectoral skill-intensity can help
  - stress novelty against conventional mechanism (skill-biased productivity)

Minor comments

- The $B(\mathcal{J})$ term seems to unnecessarily complicate Section 4. Section 5 includes the $\mathcal{J}^{\phi}$ term, but it is not mentioned in Section 6; do you assume $\phi = 0$ there?
- In a quantitative model, can allow $\alpha_c^S > \alpha_l^S$ to partially incorporate the income effect (and to be consistent with the treatment for housing).
- Is it possible to also use the site-selection IV for Facts 2 and 3? It is unclear why the specifications and time ranges differ across Facts.
- In Table 1, responses in high-skill service are smaller than in service; this seems to be inconsistent with your story?
- Is Fact 2 stronger in service than manufacturing?