

The innovation premium to low-skills jobs

Aghion/Bergeaud/Blundell/Griffith

Discussion

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The paper

- “More innovative firms pay higher wages and the premium to working in *a R&D intensive firm* is higher *for workers in low-skilled occupations*”
 - (Additionally, higher worker tenure and more outsourcing of low-skilled tasks)
- (Extensive) empirical evidence to prove the claim
 - Going from descriptive to causal
- Theoretical model to propose an explanation
 - Factor complementarities across firms
 - Segmented wage determination with replacement of low-skilled workers more risky than replacement of high-skilled workers

General assessment

- Interesting new fact about wages (and wage structures) across firms (counterintuitive ?)
- Excellent empirical documentation of wage premium across firms that invest (or not) in R&D
- Simple theoretical model: plausible explanation for the higher wage premium of low-skilled jobs in “innovative” firms (with only two assumptions).

Comment #1:

The relevance of the empirical fact

- Sample: UK firms with more than 400 employees
- General result ? Across countries ? Firms of smaller sizes ?
- Heterogeneity within worker groups. Are wages in low-skilled jobs less disperse in innovative firms?
(Apparently, YES)
- Why is the wage structure more compressed in “innovative” firms ? Earnings vs. wages. Any role of worked hours?
- Why not partitioning data by industrial sector ?
(Since explanation mostly rely on technological assumption and nature of R&D expenditures change across sectors)

Comment #1:

The relevance of the empirical fact

- Controlling for (worker) unobserved heterogeneity, composition effects, selection/endogeneity biases (see Tables 2 and 3)
- Firms' decision on R&D expenditures
 - Instrument for R&D intensity ?
- Robustness: An attempt at controlling for firm unobserved heterogeneity (Table 7)
 - Changes in firm R&D expenditures cause changes in wages (and in the wage structure), despite wage inertia and the alike
 - Much lower wage premium in low-skilled jobs of innovative firms when firm fixed effects are included in the regressions

Comment #2:

What is “innovation”?

- In the model: Technology boils down to $\varphi(\lambda, z)$
 - Technologically advanced = Expenditures on R&D per employee (**R&D intensity**) = Innovativeness (**z**)
 - Higher complementarity high-skill/low-skill occupations (**λ**)
- Inconsistency?
 - Theory: Claim to selection of “better” low skill workers into more R&D intensive firms
 - Empirics: claim to clean out worker unobserved heterogeneity
- R&D: Is the input or the output?
 - Product vs. process innovation
 - Is there a link R&D-innovation-productivity ?
 - Kogan, Papanikolaou, Seru and Stoffman (*QJE* 2017) on the link between patents and stock market valuations
 - Andersen, Potočník and Zhou (*Journal of Management* 2014) on innovation and creativity in organizations

Comment #3:

Wage determination

- Segmented wage determination.
 - Nash bargaining with different bargaining power, reservation wage for high/low skill workers
- (In all low skilled tasks) Low skills (non-cognitive) are more riskier to replace than high skills workers in high skilled task
 - Really true for **all** low skilled tasks ?
 - Low skill workers acquire more “cognitive skills” by performing tasks on the jobs (Jimeno, Lacuesta, Martinez-Matute, Villanueva, 2018)
- Non-wage benefits of working in innovative firms
 - Age structure ? Life cycle in R&D activities?
- Efficiency vs. fairness in wage determination.
 - The role of relative wages?

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DANG YOU TO HECK, THIS IS WORKING!

(May work better if “pictures of people attacked by bears” are of *some* colleagues working in the same firm)

Comment #4:

Training and outsourcing

- Innovative firms invest more in training workers
 - Do high skill workers accumulate general human capital while low skill workers accumulate firm-specific human capital ?
 - Accumulation and depreciation of human capital by occupations (Hernanz and Jimeno, 2018)
 - Poaching externality and hold up problem in investment in on-the-job training. Implications for worker tenure ?
- Innovative firms outsource the less complementary low-skilled tasks
 - Because of capacity constraint (not comparative advantage)

Concluding remarks

- Excellent paper
- Looking forward to extension of results
- Generality of the main finding ?
- Alternative explanations ?
 - What distinguishes firms with different “R&D intensity”?
 - Are wage setting and R&D decisions related somehow?