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 ($\lambda$)

• 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, Papanikolau, Seru and Stoffman (*QJE* 2017) on the link between patents and stock market valuations
  – Andersen, Potočnik 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?
STUDIES SAY YOUR HAPPINESS DEPENDS ON HOW WELL YOUR LIFE COMPARES TO OTHERS.

SO INSTEAD OF GIVING YOU A RAISE, I'M GOING TO SHOW YOU PICTURES OF PEOPLE WHO WERE ATTACKED BY BEARS.

DO YOU FEEL BETTER NOW?

DANG YOU TO HELL, 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?