Understanding Wage Growth: The Role of Coworkers
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Motivations and Questions

- Wages typically grow over the life cycle
  - Ben-Porath (1967): workers accumulate human capital while working
  - Less explored: mechanisms of on-the-job human capital accumulation
- An obvious but vital channel: interaction with coworkers
  - Yet, little evidence from both empirical and theoretical perspectives

Research Questions:
1. How much do coworkers contribute to future wages?
2. What are the channels through which this contribution is identified?

Literature Review

- Coworker quality and contemporaneous wage levels
  - Specific workplace: e.g., Mas and Moretti (2009); Brune, et al. (2020)
  - Local labor market: e.g., Cornelissen et al. (2017); Battisti (2017)
- Coworker quality and wage growth
  - Herkenhoff et al. (2018); Jarosch et al. (2019); Nix (2020)
  - Limitation: use observables (wage or education) as a measure of quality

Data and Measures

- Veneto Worker History - administrative social security data in Veneto (Italy)
  - Worker records: track working population from 1982 to 2001
  - Firm records: all private firms where any worker has worked
  - Contribution records: wage, working hours, and contract info, etc
- Some sample restrictions
  - Keep only a worker’s primary full-time job
  - Restric t age from 16 to 65
  - Firm size between 2 and 5000
- Measures and terminologies
  - Peer group: workers employed in same firm & occupation in a year.
  - Worker’s quality: the unobserved worker’s fixed effect estimated from model

Empirical Strategy

- Baseline regression builds on AKM (Abowd et al., 1999):
  \[ w_{i,t} = \alpha_{i} + \beta_{h} x_{i,t-1} + \gamma_{i,t} + \phi_{i,t} + \theta_{i,t} + \epsilon_{i,t} \] (1)
  - \( w_{i,t} \) is the log weekly earnings at time \( t + h \), where \( h \geq 0 \)
  - \( \alpha_{i} \) is the worker fixed effect
  - \( \gamma_{i,t} \) is the average coworker’s quality at time \( t \)
  - \( x_{i,t} \) is a set of individual time-varying characteristics
  - \( \phi_{i,t}, \theta_{i,t} \) are firm-year, occupation-year, firm-occupation fixed effects
  - Estimation using methodology developed by Hong and Sølvsten (2020).

Mechanisms: An Event-Study Approach

1. The impact of a high-/low-quality worker’s enter or leave on his new peer.
   \[ w_{i,t}^{\text{new}} = \delta_{i} + \phi_{i,t} + \sum_{k=1}^{K} \beta_{k} (\text{Treat}_{i,k} \times \mathbb{1}(t = k)) + \epsilon_{i,t} \]
   - \( \text{Treat} = 1 \) if a high-/low-quality worker enters or leaves
   - \( \text{Treat} = 0 \) if a similar-quality worker enters or leaves

2. The impact of a worker moving into high-/low-quality peer on his own wages.
   \[ w_{i,t} = \delta_{i} + \eta_{i} + \sum_{k=1}^{K} \gamma_{k} (\text{Treat}_{i,k} \times \mathbb{1}(t = k)) + \epsilon_{i,t} \]
   - \( \text{Treat} = 1 \) if a worker moves into a high-/low-quality peer
   - \( \text{Treat} = 0 \) if a worker moves into a similar-quality peer

Conclusion

- Explore an under-studied component of wage growth: coworker’s quality.
- The AKM model shows that the coworker is critical in generating future wages.
  - Working with better peers now leads to higher wages even after 5 years.
- An event-study approach explores the mechanisms behind such an effect.
  - The join (or leave) of a high- (or low-) quality workers, and moving into high-quality peers can imply the highest future wage gains.