Equilibrium Wage-Setting and the Life-Cycle Gender Pay Gap

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The Gender Wage Gap over the Life-Cycle

Male log wages less female log wages over the life-cycle

(a) High school graduates
(b) College graduates
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Log wage gap (in 2010 US dollars)

Years in the labor force

Raw gap, Controlling for actual experience, Controlling for actual experience, occupation and industry
Contribution

- Most literature on the gender gap focuses on workers’ differences.
- Few papers study the role of different wages paid by different firms.
- Both workers and firms are integral parts of the labor market and should be studied jointly.

This paper

- Builds a dynamic equilibrium search model to study both workers’ and firms’ decisions,
- offering a framework to analyze this firm wage-setting behavior in equilibrium.
Data

- Longitudinal data over 35 years of American men and women aged 14 to 22 in 1979 (NLSY79)
  - Contains weekly labor market histories and monthly fertility for men and women

- We focus on the first 15 years in the labor force: years 1979-2006

- Restrict sample to non-Hispanic Whites whose first child is born after leaving full-time education

- Two education groups
  - HSG: Highschool graduates (highest grade completed from 12 to 15 years of education)
  - CG+: College graduates and above (highest grade completed from 16 to 20 years)
Differences between men and women in the first 15 years of working life

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<thead>
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<tr>
<td>Same job afterward</td>
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Source: Authors’ calculations from NLSY79
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Differences between men and women in the first 15 years of working life

- High school educated women have more difficulty finding a new job
- College educated women quit or are fired more often than men

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<td>1.9 (0.224)</td>
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<td>3.7 (0.725)</td>
<td>14.8 (2.000)</td>
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*Source: Authors’ calculations from NLSY79*
Features of the Model

- Firms set wages to maximize their profit given their productivity and average workers’ turnover.
- Workers do not have full information about the firms in the labor market.
- Workers take the best offer among those available to them.
- Workers earned wages at the firm equal $\text{firm's wage rate} \times \text{worker's human capital}$.
Features of the Model: Men and Women climb the HC staircase on the job

- Workers increase their human capital while employed
- The speed of their HC increases may differ by gender
- We determine the gender-specific steepness in the data

- Workers can get job offers while employed
- Even happy workers will switch jobs for a higher pay

- Both men and women may unexpectedly have a baby at any point in their careers
Features of the Model: Parental leave in our model

• Upon childbirth, all workers go into parental leave
• While on leave, workers cannot get job offers

• When the worker is “ready,” she can rejoin the workforce
• Some workers are able to rejoin their previous job

• Some have to rejoin the workforce in unemployment
Model fit

Fit of the log-wage profile by years in the labor force

(a) High school graduates

(b) College graduates

Women: Data Model

Men: Data Model
Decomposing the gender wage gap

- The model allows us to decompose the gap into 4 different components:
  - Human capital: 23%
  - Job productivities: 16%
  - Firms' equilibrium wage offers: 55%
  - Job-to-job progression: 6%

(a) High-School
- Human capital: 32%
- Job productivities: 13%
- Firms' equilibrium wage offers: 47%
- Job-to-job progression: 8%

(b) College
- Human capital: 32%
- Job productivities: 13%
- Firms' equilibrium wage offers: 47%
- Job-to-job progression: 8%
Policy implications

• Improving stability of women’s employment has the largest effect in narrowing the gender gap

• For example, the gap can decrease by up to...
  - HS: 25% with policies that help unemployed women find jobs at the same rate as men
  - CG: 50% if more job flexibility allows women to keep employed to the same extent as men
  - HS+CG: 19% if more childcare support reduces the fertility-related career interruptions’ gap

• Notably, these reductions are mostly driven by the demand side:
  - firms choose higher wage rates in response to the changes in women’s expected labor market behavior
Conclusion

• Our innovation in studying the gender gap centers on
  - modeling how firms’ wage offers respond to the expectations about women's future work plans

• We show that the pattern of firms’ wage offers is a major source of the gender wage gap

• Our counterfactual exercises show that policies improving the stability of women's employment reduce the gap throughout life-cycle
  - This occurs because the pattern of firms’ wage offers follows their expectations about how women behave in the presence of policies like subsidized child care
Thank you