How long do early career decisions follow women? The impact of industry and firm size history on the gender and motherhood wage gaps

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U.S. Census Bureau

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How long do early career decisions follow women? The impact of industry and firm size history on the gender and motherhood wage gaps

Holly Monti, Lori Reeder, Martha Stinson
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Persistence of the Gender-Wage Gap

• The convergence of male and female wages has slowed.
  – Ratio of female/male median weekly earnings of full-time wage and salary workers is still only 81.7 in 2013 (CPS data, BLS time series).

• What choices are women making early in their careers that affect them into middle-age?

• Can a more complete accounting of a woman’s work history with respect to types of jobs held account for some of this continuing difference?
Motherhood Wage Gap

• Motherhood (or family) wage gap between 5 and 20%.
• Women’s labor force attachment related to fertility decisions.
• Work history could explain motherhood wage gap as well:
  – Mothers may choose industries/occupations with more flexibility and non-wage benefits.
Why might past job characteristics be related to current wages?

- Men/women and mothers/non-mothers begin their careers in different industries and the return to work experience varies by industry.
- Men might work for different sizes of employers early in their careers and the return to work experience varies by firm size.
- Men change jobs more often early in their careers, thus arriving at a “career” job faster.
- Once men arrive at a “career” job, they accumulate longer tenure.
Methods

• Sample of men and women surveyed at age 40+
  – Use administrative tax data to look back on their working lives (age 22-40+)
  – Summarize work history by calculating:
    • Percent of working years with positive earnings
    • Percent of working years spent in different industries
    • Percent of working years spent in firms of different sizes
    • Job counts by age
    • Job counts by tenure category
  
  • How much of the wage differential is explained by differences in observed characteristics?
    – Use Blinder-Oaxaca decomposition of differences in average wages in mid-forties
    – Compare effect of demographics, current job characteristics, and work history characteristics
Data Sources

- Survey of Income and Program Participation (SIPP)
  - 2004, 2008 panels
  - Sample of almost 20,000 individuals born between 1956 and 1968
  - Links to administrative earnings by SSN
- Detailed Earnings Record (DER) from W-2 Tax Records
  - Annual earnings from 1978-2009, by employer
  - Links to Census Bureau Firm Data using EIN
- Business Register (BR)
  - Master list of all businesses operating in the U.S. by year
  - Contains industry and firm size
  - Links to LBD by common firm identifier
- Longitudinal Business Database (LBD)
  - A longitudinally edited and standardized version of the BR
  - Contains longitudinal industry codes standardized to 2007 NAICS
Descriptive Results: Differences in Male/Female Work Histories

- **Industry Work History Summary:**
  - Different industry sector employment patterns exist for men and women at age 25 and these differences are persistent.
  - Women more often than men in retail and food/accommodation sectors at age 25 and age 40.

- **Firm Size Work History Summary:**
  - Men work for smaller firms at age 25 relative to women
  - Women spend more time in larger firms
  - Distribution across firm size converges by age 40, because men move to larger firms and become more similar to women.

- **Job count history**
  - Men hold more jobs earlier in their careers. By age 30, they have held on average 1.25 more jobs than women
  - Women catch up by age 40 except for right tail of the distribution; having a very high numbers of employers remains predominantly a male phenomenon.
Figure 8: Average Weekly Earnings by Major NAICS Sector for 1990, 2004, and 2009

Source: Quarterly Census of Employment and Wages from the Bureau of Labor Statistics. All wages are in constant 2009 dollars.
### Summary of Oaxaca-Blinder Regression

#### Decomposition Male-Female Wage Differences

<table>
<thead>
<tr>
<th></th>
<th>Value</th>
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<tbody>
<tr>
<td>Male Average Log Wage</td>
<td>3.0726***</td>
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<tr>
<td>Female Average Log Wage</td>
<td>2.8387***</td>
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<tr>
<td>Difference</td>
<td>0.2339***</td>
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<tr>
<td>Difference in Observables</td>
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</table>

#### Differences in Observables by Component

<table>
<thead>
<tr>
<th>Component</th>
<th>Value</th>
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<tbody>
<tr>
<td>SIPP Job Characteristics</td>
<td>0.1010***</td>
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<tr>
<td>% Years Positive Earnings</td>
<td>0.0310***</td>
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<tr>
<td>Work History:</td>
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<tr>
<td>% Industry Years</td>
<td>0.0396***</td>
</tr>
<tr>
<td>Current Sector %</td>
<td>-0.0346*</td>
</tr>
</tbody>
</table>
Descriptive Work Histories of Mothers/Non-mothers

• **Industry Work History Summary:**
  – Non-mothers more likely to be in retail, information, and accommodations/food at every age, while mothers more often non-earners

• **Firm Size Work History Summary:**
  – Very little difference in firm size distributions at younger ages
  – By age 40, non-mothers more likely to work at largest firms

• **Job Count History:**
  – Non-mothers have held more jobs at every age
Moms/Non-Moms Industry Distribution over Time

- **Non-Mothers in Blue**
- **Mothers in Red**

<table>
<thead>
<tr>
<th>Industry</th>
<th>25</th>
<th>30</th>
<th>40</th>
</tr>
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<tbody>
<tr>
<td>Retail Trade</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Education</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Health C. &amp; Social Asst.</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Accomd. &amp; Food</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-Earners</td>
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</tr>
</tbody>
</table>

Percentage

- 25       30       40
- 25       30       40
- 25       30       40
- 25       30       40
- 25       30       40
- 25       30       40
### Summary of Oaxaca-Blinder Regression
#### Decomposition Moms/Non-Moms Wage Differences

<table>
<thead>
<tr>
<th></th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>Non-Moms Average Log Wage</td>
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<tr>
<td>Moms Average Log Wage</td>
<td>2.7847***</td>
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<td>Difference</td>
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<tr>
<td>Difference in Observables</td>
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### Differences in Observables by Component

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<tbody>
<tr>
<td>SIPP Job Characteristics</td>
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<tr>
<td>% Years Positive Earnings</td>
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<td>Work History:</td>
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<tr>
<td>% Industry Years</td>
<td>0.0137**</td>
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<tr>
<td>Current Sector %</td>
<td>-0.0143*</td>
</tr>
</tbody>
</table>
Work History Results

• Industry history:
  – If women looked more like men and mothers more like non-mothers, wage gaps would decrease.
  – But percent of year’s spent in one’s current sector has negative impact on the wage gaps.
  – Overall, industry history not significant.

• Firm size, job counts history:
  – Job counts not significant for either wage gap.
  – Firm size history has a small, positive effect on motherhood wage gap.
Summary of Results

• Gender wage gap is about 20%
  – 64% of the gap explained by differences in observables

• Motherhood wage gap is about 12%
  – Differences in observables explain entire gap

• Wage gaps explained by:
  – Actual work experience (accounts for 13% of gender gap and 27% of motherhood gap)
  – Current job characteristics (account for about half of both wage gaps)
  – Career industry distribution (but offset by share of one’s career spent in current industry)