What Do We Know About the Gender Wage Gap?

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Overview

  • Gender wage gap has declined substantially
  • How much of a gap remains and what causes it?
  • How do we account for the decrease?

=> Questions addressed in terms of simple statistical analyses (decompositions)
Overview


• Use results as a springboard to review literature on explanations
  • Some build on measured factors included in analysis
  • Others not included, potentially impact “unexplained” gap
    • Caveat may be picked up by measured factors

• Explanations
  • Traditional explanations (e.g., human capital, discrimination, gender division of labor)
  • New approaches (noncognitive skills/psychological attributes, gender norms)

• Policies
Overview

• Drawing on much joint work with Lawrence M. Kahn, especially Blau and Kahn *JEL* (2017)
Extent and Trends

• Primarily use data from the Panel Study of Income Dynamics (PSID)
  • Nationally representative, includes data on actual labor market experience
  • Focus on full-time workers, with considerable attachment over the year (26 weeks +), aged 25-64

• Regression analyses:
  • Human capital specification—controls for education and experience (also race and region)
  • Full specification—additionally controls for occupation, industry and unionism
Unadjusted Female to Male Wage Ratios, (PSID)

- 1980: 62.1%
- 1989: 74.0%
- 1998: 77.2%
- 2010: 79.3%
Female to Male Wage Ratios, Unadjusted and Adjusted for All Covariates (PSID)

Unadjusted

Adjusted: Human Capital Specification

Adjusted: Full Specification
## Contribution of Measured Characteristics to the Gender Wage Gap (Percent Explained)

<table>
<thead>
<tr>
<th>Variables</th>
<th>1980</th>
<th>2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>Education</td>
<td>3%</td>
<td>3%</td>
</tr>
<tr>
<td>Experience</td>
<td>24%</td>
<td>21%</td>
</tr>
<tr>
<td>Unionization</td>
<td>--</td>
<td>6%</td>
</tr>
<tr>
<td>Industry</td>
<td>--</td>
<td>10%</td>
</tr>
<tr>
<td>Occupation</td>
<td>--</td>
<td>11%</td>
</tr>
<tr>
<td>Other</td>
<td>2%</td>
<td>1%</td>
</tr>
<tr>
<td>Total Explained</td>
<td>29%</td>
<td>52%</td>
</tr>
<tr>
<td>Total Unexplained</td>
<td>71%</td>
<td>48%</td>
</tr>
<tr>
<td>Total Pay Gap</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>
How are more skilled women faring?

• Gender wage gap closing more slowly at the top, both unadjusted and controlling for covariates

• Decomposition of unconditional quantiles based on Chernozhukov, Fernández-Val, and Melly (2013), see also Firpo, Fortin, and Lemieux (2009)
Female to Male Wage Ratios by Percentile, Unadjusted and Adjusted for All Covariates--Full Specification (PSID)

10th percentile | 50th percentile | 90th percentile

1980-Unadjusted | 63.0% | 60.8% | 63.0%

2010-Unadjusted | 82.1% | 81.0% | 73.8%

1980-Adjusted | 82.8% | 77.1% | 79.2%

2010-Adjusted | 96.9% | 92.0% | 83.6%
What Accounts for the Decrease in the Overall Gender Wage Gap?

• Between 1980 and 2010, the gender wage gap fell by .246 log points
• What are the sources of this decrease?
• Use decomposition based on Juhn Murphy and Pierce (1991) to identify contributions of changes in:
  • Means
  • Coefficients
  • Unexplained gap
**Sources of the Change in the Gender Wage Gap, 1980-2010 (full specification)**

<table>
<thead>
<tr>
<th>Sources</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Effect of Changing Means</strong></td>
<td>57.5</td>
</tr>
<tr>
<td>Education</td>
<td>14.0</td>
</tr>
<tr>
<td>Experience</td>
<td>17.6</td>
</tr>
<tr>
<td>Unionization</td>
<td>12.3</td>
</tr>
<tr>
<td>Industry</td>
<td>-1.3</td>
</tr>
<tr>
<td>Occupation</td>
<td>15.0</td>
</tr>
<tr>
<td>Other</td>
<td>-0.2</td>
</tr>
<tr>
<td><strong>Effect of Changing Coefficients</strong></td>
<td>-15.7</td>
</tr>
<tr>
<td><strong>Effect of Changing Unexplained Gaps</strong></td>
<td>58.3</td>
</tr>
<tr>
<td><strong>Change in the Total Wage Gap (-.246 log pts)</strong></td>
<td>100.0</td>
</tr>
</tbody>
</table>
What does the decrease in the Unexplained Gap mean?

• Decrease in discrimination
• Relative improvement in women’s unmeasured characteristics
• Changes in selection
• Increases in demand for women workers relative to men workers

Summary

• Gap fell, most rapidly in the 1980s with slower convergence thereafter
• Most important factors accounting for the decrease: ed, exp, and occs, and unionism, and decline in unexplained gap
• By 2010, HC accounted for little of gap (women had more ed than men and had reduced the experience gap—but experience still favors men)
• In 2010, gender differences in occupation and industry still important; and there was still an unexplained gap
• Slower decrease in the gap at the top, both unadjusted and controlling for measured characteristics
Explanations: Human Capital

• In the aggregate education and experience, *taken together*, don’t explain much tho experience still favors men

• Experience and hours remain particularly important in high skilled jobs (recall gap fell less for those jobs)

  • Noonan, Corcoran, Courant (2006) Lawyers
  • Bertrand, Goldin, Katz (2010) MBAs-- emphasize extremely large penalties for taking any time out
Explanations: Human Capital

• Goldin (2014): Emphasizes temporal (in)flexibility and compensating differentials
  • Some jobs require long hours and work performed at particular times and places and disproportionately reward this; given the gender division of labor in most families, this generates a gender wage gap
  • Less emphasized by Goldin, this also applies to large penalties for workforce interruptions
  • Alternative to human capital story
  • Especially applies to high skill women in law and business
  • Goldin emphasizes a within occupation story—but might help explain occupational segregation
Traditional division of labor in home

- *Motherhood wage penalty*; male marriage premium; joint location issues
- Important to note that the aggregate gender wage gap reinforces the traditional division of labor
- Also, there is evidence that discrimination plays a role in the motherhood penalty
  - Correll, Benard, and Paik (2007)—Lab and field experiments (identical résumés)
    - Field experiment: mothers received lower callbacks than nonmothers; no difference in callbacks for fathers compared to nonfathers
Discrimination: Experimental Evidence

Statistical findings complemented by experimental evidence

• Goldin and Rouse (2000) symphony orchestras
• Neumark (1996) waiters and waitresses
• Moss-Racusin et al (2012) science lab managers
• Reuben et al (2014) performing math tasks
• Correll, Benard, and Paik (2007) parenthood, different effects for men and women
Discrimination: Experimental Evidence

• Lends support to the idea that at least some portion of the unexplained gap is due to discrimination
• Does not identify a particular magnitude or prove economy-wide
• This does not mean discrimination is overt and conscious
  • Implicit discrimination—draws on literature in social psychology (in economics see Bertrand, Chugh, and Mullainathan 2005)
  • For a measure see, Implicit Association Test (IAT) https://implicit.harvard.edu/implicit/
  • Some research is starting to correlate scores on test with discrimination (e.g, Reuben et al (2014) )
Newer Factors: Noncognitive skills/Psychological attributes

- **Negotiation** (Babcock and Laschever 2003); (Bowles, Babcock, and Lai 2007); Leibbrandt and List (2015)
- **Competition** (Niederle and Vesterlund 2007); Flory, Leibbrandt and List (2015)
- **Risk Aversion** (Croson and Gneezy 2009-review)

**But**

- **Interpersonal Skills** favor women (Borghans, ter Weel, and Weinberg)
Newer Factors: Noncognitive skills/Psychological attributes

Some Caveats

• May be to some extent captured by measured variables
• Factors favoring men may not be optimal in all circumstances
• Women sometimes encounter negative reactions when they act in “unfeminine” ways, e.g., negotiate
• Mainly evidence from lab experiments but some confirmation from field experiments and follow-ups
• Difficult to measure quantitative importance; our (imperfect) effort to do so in Blau-Kahn (2017) suggests modest effect, not a “silver bullet”
### Selected Studies Assessing the Role of Psychological Traits in Accounting for the Gender Pay Gap

<table>
<thead>
<tr>
<th>Study</th>
<th>Sample</th>
<th>Traits examined</th>
<th>Raw gender wage gap (logs)</th>
<th>Effect of gender differences in psych. factors on gender pay gap (logs)</th>
<th>Percentage of gender pay gap due to gender differences in psych. traits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mueller and Plag (2006)</td>
<td>Wisconsin 1957 HS grads, 1992 data</td>
<td>&quot;Big 5&quot;: extraversion, agreeableness, conscientiousness, neuroticism, openness</td>
<td>0.357</td>
<td>0.043–0.095</td>
<td>7.3–16.2</td>
</tr>
<tr>
<td>Semykina and Linz (2007)</td>
<td>Russia 2000–2003</td>
<td>Locus of control: challenge/affiliation</td>
<td>0.311–0.397</td>
<td>0.012–0.025</td>
<td>3.0–8.4</td>
</tr>
<tr>
<td>Manning and Swaffield (2008)</td>
<td>British cohort study. 1970 birth cohort 2000 data</td>
<td>Risk: competitiveness, self-esteem, other-regarding, career orientation, locus of control</td>
<td>0.203</td>
<td>0.005–0.056</td>
<td>2.5–27.6</td>
</tr>
<tr>
<td>Nyhus and Pons (2012)</td>
<td>Netherlands 2005</td>
<td>Locus of control; time preference</td>
<td>0.246</td>
<td>0.028–0.035</td>
<td>11.5–14.1</td>
</tr>
<tr>
<td>Reuben, Septfenza, and Zingales (2015)</td>
<td>2008 Univ. of Chicago Booth MBA cohort</td>
<td>Taste for competition</td>
<td>0.119</td>
<td>0.010–0.012</td>
<td>8.4–10.1</td>
</tr>
<tr>
<td>Cattan (2014)</td>
<td>NLSY 1979, 4 points in life cycle</td>
<td>Self-confidence</td>
<td>0.18–0.30</td>
<td>0.010–0.035</td>
<td>5.4–14.5</td>
</tr>
</tbody>
</table>

Source: Blau and Kahn (2017)
Newer Factors: Gender Identity/Norms

• Akerlof and Kranton (2000)—identity=sense of belonging to a social category with view about how people should behave (norms)

• Bertrand, Kamenica, and Pan (2015) investigate the norm wife should not earn more than husband
  • Within marriage markets, if wives potentially would earn more than husbands, marriage rates are reduced
  • Within couples, if a wife is predicted to earn more than her husband, she is less likely to participate in the labor market, or, if she does, her income is lower than predicted
  • Within couples, if a wife earns more than her husband, it increases her housework time, couple more likely to divorce
• Things may be changing
  – The share of wives in the US with higher incomes than their husbands has been rising, now 29%, up from 16% in 1981
  – In 2013, only 28 percent of adults agreed that “It’s generally better for a marriage if the husband earns more than his wife” (compared to 40 percent in 1997)
  – College graduates had especially permissive views, with only 18 percent agreeing
• **BUT** still some signs that how successful women are is an issue, even among the highly educated

• **Study of MBA Students** Bursztyn, Fujiwara and Pallais (2017)
  – Single women gave *less* career-minded responses to a survey when they expected responses to be shared with their MBA classmates, perhaps to make themselves appear less ambitious and more attractive in the marriage market
Some Comments on Policy

• Family friendly policies
  – parental leave and part-time mandates: trade off between encouraging employment and gender equity within the labor market (e.g., Blau and Kahn 2013; Ruhm 1998)
  – early education and child care most positive effect (Olivetti and Petrongolo 2017)

• Wage setting institutions—role of unions and government (Blau and Kahn 1996, 2003)

• Continued importance of antidiscrimination laws
Conclusion

• Women have made significant and dramatic progress in the labor market
• But inequalities remain
• Probably no one single, unified explanation to explain gender gaps: combination of factors
• Traditional factors, including gender roles and discrimination, likely important
• Differences in location of men and women (by occupation and industry) most important *measurable* factors—would be helpful to understand more about the reasons for these differences
• Newer insights are emerging about gender differences in noncognitive skills/ psychological attributes a factor but not a “silver bullet”
Conclusion

• Sexual harassment—little work by economists at this point
• Women’s gains vs. men’s losses
  • Less skilled men fairing particularly poorly: labor force participation; wage inequality; real wage trends, loss of union jobs
  • Similar trends among women, but in general women faring a bit better
  • Fates intertwined by the family—growth of female headship