Background

• Substantial gains for women over the last half century in many countries around the world:
  – Education →
  – Labor force participation
  – Labor market earnings
Share of women and men with at least a college degree, by birth cohort

Percent with at least a college degree by age 30

Birth cohort

Women

Men
Background

• Large literature documenting reasons for these gains:
  – Innovations in contraception
  – Technological progress in home production activities
  – Better regulatory controls against discrimination
  – Labor demand shifts towards industries where female skills are disproportionately represented
  – Etc.

• Yet:
  – Women remain under-represented in high status/high income occupations
  – When represented in these occupations, women earn less than men
Example: C-Suite

FORTUNE 500 WOMEN CEO\textsc{\textregistered}s (PERCENT)

Sources

Catalyst Research; Catalyst, Historical List of Women CEO\textsc{\textregistered}s of the Fortune Lists: 1972-2013 (2013). Based on the percentage of women CEOs at the time of the annual published Fortune 500 list.

Source: Catalyst
### Women's Labor Force Participation & Representation in the Upper Part of the Earnings Distribution

**Sample: 25-64 Years-Old Women with a College Degree or More**

<table>
<thead>
<tr>
<th></th>
<th></th>
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<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>In workforce:</td>
<td>0.611</td>
<td>0.734</td>
<td>0.817</td>
<td>0.807</td>
<td>0.811</td>
</tr>
</tbody>
</table>

Share of women *working full time-full year* with earnings at or above the xth percentile of the distribution of earnings among men working full time-full year, where xth percentile is:

- **50th percentile**: 0.086, 0.098, 0.177, 0.247, 0.247
- **80th percentile**: 0.016, 0.017, 0.035, 0.054, 0.062
- **90th percentile**: 0.008, 0.006, 0.013, 0.021, 0.027
Share of women in the employed population, by fractile of labor income

Source: Piketty, Saez and Zucman (2016)
Gender pay gaps within occupation

Figure 2A. Gender Pay Gaps by Occupation: 2009 to 2011

Source: Goldin (2014)
Why Should We Care?

• Much of the popular discussion of the glass ceiling is typically framed as an issue of rights and fairness.
  – “Equal pay for equal work”
  – Current academic thinking on the glass ceiling, however, has focused on explanations that do not rely on employers treating women unfairly
    • E.g. there might be observed gender gaps in earnings even when employers practice “equal pay for equal work”

• An economy that is tapping into a limited pool (men) to find its leaders must be operating inside the efficiency frontier.
  – Hsieh et al. (2017): one-quarter of growth in US GDP between 1960 and 2010 can be explained by declining barriers to the entry of women and blacks in occupations where they were previously heavily underrepresented.

• Other efficiency-based related to how diversity in leadership roles might be productivity-enhancing.
  – Many organizations making the business case for “diversity and inclusion.”
  – But note: economic research has fallen short so far of providing robust empirical demonstrations of the economic benefits of diversity.
Roadmap

1. Why are women still struggling in the labor market? What does the most recent research say?
   - Gender differences in psychological attributes
   - Women’s greater demand for flexibility/work-family balance

2. What role can corporate and public policy play, if any, in accelerating convergence at the top?
Gender differences in psychological attributes

- Flurry of *laboratory studies* over the last 15 years or so have documented robust gender differences in a set of psychological attributes.

- Some of these psychological attributes may have direct relevance in explaining educational and labor market choices, as well as labor market outcomes, especially at the top of income distribution.

- In particular:
  - Women are more risk averse.
  - Women perform more poorly in competitive environments and shy away from such competitive environments.
  - Women negotiate less/women do not ask.
  - Women lack in self-confidence (while men tend to be overly confident).

- Note: nature or nurture?
# Relevance outside the Lab

Table 7: 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 Plug (2006)</td>
<td>Wisconsin 1957 HS Grads, 1992 Data</td>
<td>&quot;Big 5&quot;: Extroversion; Agreeableness; Conscientiousness; Neuroticism; Openness</td>
<td>0.587</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>0.012-0.026</td>
<td>3.0-8.4%</td>
</tr>
<tr>
<td>Fortin (2008)</td>
<td>US NELS 1972 and 1988 Cohorts: 1979, 1986 and 2000</td>
<td>Self-Esteem; Locus of Control; Money/Work Importance; People/Family Importance</td>
<td>0.181-0.237</td>
<td>0.008-0.032</td>
<td>4.4-14.0%</td>
</tr>
<tr>
<td>Manning and Swafford (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 (2011)</td>
<td>Denmark 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, Sapienza 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>0.010-0.036</td>
<td>5.4-14.5%</td>
</tr>
</tbody>
</table>

Source: Blau and Kahn (2016)
Overall

• 15 years later, field-based demonstrations that gender differences in psychological traits matter for education, job choices and earnings

• However, magnitudes so far suggest limited role wrt explaining gender gap in earnings
Women’s greater demand for flexibility

• Many of the higher-paying jobs have long hours and inflexible schedules

• Many of the financially more rewarding careers require continuous labor force attachment in order to stay on the “fast track,” which makes it difficult to combine those careers with job interruptions

• Because women remain the dominant providers of child care (as well as other forms of non-market work), this inflexibility in the workplace is particularly detrimental to them.
Male and female mean and median annual salaries ($2006) by years since graduation (Chicago Booth MBA data)

## Labor Supply by Gender and Years since Graduation

<table>
<thead>
<tr>
<th>Number of Years since Graduation</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>≥10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Share not working at all in current year</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>0.054</td>
<td>0.012</td>
<td>0.017</td>
<td>0.027</td>
<td>0.032</td>
<td>0.050</td>
<td>0.067</td>
<td>0.084</td>
<td>0.089</td>
<td>0.129</td>
<td>0.166</td>
</tr>
<tr>
<td>Male</td>
<td>0.028</td>
<td>0.005</td>
<td>0.002</td>
<td>0.003</td>
<td>0.007</td>
<td>0.008</td>
<td>0.008</td>
<td>0.006</td>
<td>0.011</td>
<td>0.010</td>
<td></td>
</tr>
<tr>
<td>Share with any no work spell (until given year)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>0.064</td>
<td>0.088</td>
<td>0.116</td>
<td>0.143</td>
<td>0.161</td>
<td>0.193</td>
<td>0.229</td>
<td>0.259</td>
<td>0.287</td>
<td>0.319</td>
<td>0.405</td>
</tr>
<tr>
<td>Male</td>
<td>0.032</td>
<td>0.040</td>
<td>0.052</td>
<td>0.064</td>
<td>0.071</td>
<td>0.077</td>
<td>0.081</td>
<td>0.082</td>
<td>0.090</td>
<td>0.095</td>
<td>0.101</td>
</tr>
<tr>
<td>Cumulative years not working</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>0</td>
<td>0.050</td>
<td>0.077</td>
<td>0.118</td>
<td>0.157</td>
<td>0.215</td>
<td>0.282</td>
<td>0.366</td>
<td>0.426</td>
<td>0.569</td>
<td>1.052</td>
</tr>
<tr>
<td>Male</td>
<td>0</td>
<td>0.026</td>
<td>0.036</td>
<td>0.045</td>
<td>0.057</td>
<td>0.060</td>
<td>0.069</td>
<td>0.075</td>
<td>0.084</td>
<td>0.098</td>
<td>0.120</td>
</tr>
<tr>
<td>Mean Weekly hours worked for the employed</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>59.1</td>
<td>58.8</td>
<td>57.1</td>
<td>56.2</td>
<td>55.3</td>
<td>54.8</td>
<td>54.7</td>
<td>53.7</td>
<td>52.9</td>
<td>51.5</td>
<td>49.3</td>
</tr>
<tr>
<td>Male</td>
<td>60.9</td>
<td>60.7</td>
<td>60.2</td>
<td>59.5</td>
<td>59.1</td>
<td>58.6</td>
<td>57.9</td>
<td>57.6</td>
<td>57.6</td>
<td>57.5</td>
<td>56.7</td>
</tr>
</tbody>
</table>

## Gender Wage Gap by Number of Years since MBA Graduation

<table>
<thead>
<tr>
<th></th>
<th>Number of Years since MBA Receipt</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0</td>
</tr>
<tr>
<td>1. With no controls</td>
<td></td>
</tr>
<tr>
<td></td>
<td>-0.089</td>
</tr>
<tr>
<td></td>
<td>[0.020]*</td>
</tr>
<tr>
<td>With controls:</td>
<td></td>
</tr>
<tr>
<td>2. Pre-MBA</td>
<td></td>
</tr>
<tr>
<td>characteristics</td>
<td>-0.08</td>
</tr>
<tr>
<td></td>
<td>[0.021]*</td>
</tr>
<tr>
<td>3. Add MBA</td>
<td></td>
</tr>
<tr>
<td>performance</td>
<td>-0.054</td>
</tr>
<tr>
<td></td>
<td>[0.021]*</td>
</tr>
<tr>
<td>4. Add labor market</td>
<td></td>
</tr>
<tr>
<td>exp.</td>
<td>-0.053</td>
</tr>
<tr>
<td></td>
<td>[0.021]$</td>
</tr>
<tr>
<td>5. Add weekly hours</td>
<td></td>
</tr>
<tr>
<td>worked</td>
<td>-0.036</td>
</tr>
<tr>
<td></td>
<td>[0.020]</td>
</tr>
</tbody>
</table>

Gender pay gaps within occupation

**Figure 2A. Gender Pay Gaps by Occupation: 2009 to 2011**

Source: Goldin (2014)
Non-linear pay and gender pay gap within occupation

Source: Goldin (2014)
Why is inflexible work particularly difficult for women?

• First-order explanation: children
Gender Gap in Labor Supply: The Role of Children
(controls include Pre-MBA characteristics, MBA performance, cohort*year fixed effects)

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>Not working</th>
<th>Actual post-MBA experience</th>
<th>Log (weekly hours worked)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>0.084</td>
<td>-0.286</td>
<td>-0.089</td>
</tr>
<tr>
<td></td>
<td>[0.009]∗</td>
<td>[0.039]∗</td>
<td>[0.013]∗</td>
</tr>
<tr>
<td>Female with child</td>
<td>0.20</td>
<td>-0.66</td>
<td>-0.238</td>
</tr>
<tr>
<td></td>
<td>[0.024]∗</td>
<td>[0.094]∗</td>
<td>[0.031]∗</td>
</tr>
<tr>
<td>Female without child</td>
<td>0.034</td>
<td>-0.126</td>
<td>-0.033</td>
</tr>
<tr>
<td></td>
<td>[0.007]∗</td>
<td>[0.031]∗</td>
<td>[0.012]∗</td>
</tr>
</tbody>
</table>

Estimating child penalties

• Recent wave of papers using rich administrative (register) panel data to compute child penalties:
  – Kleven and Landais (2016): Denmark
  – Germany, Austria

• Document *within-couple change* in earnings after parenthood
  – Event-study

• Note:
  – Overall population
  – Scandinavia -> longer parental leave; weaker gender norms.
Fig. 3. Average yearly income for women and men within matched couples before and after having their first child.

Source: Angelov et al (2016)
Denmark

A: Earnings

B: Hours Worked

Source: Kleven and Landais (2016)
Puzzle?

• Why are women, and especially the more educated ones, today still paying such a disproportionate price in the labor market for carrying a couple’s children?

• Several forces seem at first glance to have been operating towards weakening this disproportionate price...

• In particular:
  – Amount of non-market work
  – Gender role attitudes
Amount of non-market work

• Technological change and cheaper outsourcing options have reduced need for “double-shift” (labor market work + non-market work)
  • Especially relevant for the more educated/those with highest earnings potentials

• But important countervailing force has been growing amount of time spent on parenting, especially among the more educated
  • Particularly relevant in the US
  • Guryan et al 2008 ; Ramey and Ramey 2009
Gender role attitudes/gender identity

– On the one hand:
  • Gender role attitudes appear weaker today than in the past, as one would expect if these attitudes are endogenously responding to market changes/new educational landscape.

– On the other hand:
  • (Among historically tracked gender role attitudes) slowest to converge are views regarding conflicts between working mothers and well-being of their children.
    • Some “dormant” gender identity norms may only start biting when women’s position in the labor market improves.
      – Ex: “Men should earn more than their wives” (Bertrand, Kamenica et al, 2015)
  • Also, other possible manifestations of gender norms:
    – “Women should not compete”
    – “Women should not take too much risk”
    – “Women should not be too ambitious”
Puzzle?

• Why are women, and especially the more educated ones, today still paying such a disproportionate price in the labor market for carrying a couple’s children?

• Even with declining need for non-market work and weakening gender role norms, other forces might have been pushing in the other directions:

• In particular (Bertrand, 2018):

  – Technological change and job attributes:
    • Correlation between occupational earnings and elasticity of annual income with respect to hours worked has increased over time, particularly in high earnings occupations

  – Change in marriage rate and spousal characteristics:
    • Women in high earnings occupations are more likely to be married today than in the past.
    • Their husband are also in high earnings occupations/occupations with high (and) rising elasticity of earnings with respect to hours worked.
    • Women in high earnings occupations are more likely to have children today than in the past.
Roadmap

1. Why are women struggling to break the glass ceiling? What does the most recent research say?

2. What role can corporate and public policy play, if any, in accelerating convergence at the top?
Augmenting work-family amenities within the workplace

- Firm-level HR and public policies aimed at making the workplace more family-friendly, such as:
  - Longer maternity leave
  - Part time work, shorter hours; flexibility during the workday
  - Working remotely
- While offering such flexibility may achieve the objective of attracting/retaining women in the workforce, it will not reduce the gender gap as long as this flexibility is negatively priced in the market.
  - A matter of job design
- Some of these policies may backfire:
  - For example, longer leave raises costs for employers of hiring women of child-bearing age; may lead employers to not assign women to the most important jobs or clients; may also keep women out of the workforce for “too long” to ensure a re-entry on the fast-track.
Augmenting work-family amenities within the workplace

• There might be a tradeoff between reducing whatever is left of the gender gap in labor participation and reducing the gender gap in earnings

• Blau and Kahn, 2013:

  – Country-level panel evidence suggests that part (30 percent) of the US plateauing in labor force participation compared to other OECD countries can be accounted for by more aggressive work-family balance policies in non-US OECD

  – But higher representation of women in high-paying managerial and professional occupations in US compared to non-US OECD
Gender-neutralizing childcare

• Encouraging more fathers to take up parental leave

  – Sweden, Norway, Quebec’s experience with dedicated paternity leave into their parental leave policy (“daddy quotas” or “daddy months”)
    • Duvander and Johansson, 2012; Ekberg et al., 2013; Dahl et al., 2014; Patnaik, 2015

  – Evaluation of these policies suggests that:
    • Fathers do take up their dedicated quota, but not more (so far at least).
    • Amount of child care provided by fathers go up, even after the child’s first year of life (Schober, 2014)
    • Effects on women’s labor market outcomes appear muted/mixed (so far at least).
Gender-neutralizing childcare

• While such policies go to the core of what is holding women’s back by trying to speed up the shift in gender norms, it is possible that these policies may have *perverse* effects in the interim.

• Example: “daddy months” in academia

• Antecol, Bedard and Stearns (2016):
  – Build a dataset on the universe of assistant professor hires at top-50 economics departments from 1985-2004
  – Show that the adoption of gender-neutral tenure clock stopping policies substantially reduced female tenure rates while substantially increasing male tenure rates.
Affirmative action

- The most significant public policy initiative in Europe aimed at increasing gender balance in top corporate jobs has been the introduction of gender quotas on corporate boards.

- How are these quotas theoretically supposed to address the glass ceiling?
  - Mechanical effect (but limited by low numbers of directly affected)
  - Short-circuiting path dependence in executive appointments
  - Homophily
  - Role models

- Additional arguments related to the value of diversity

- These theoretical benefits are supposed to exceed the potential costs of such policies
  - Reinforcing stereotypes
Board quotas

• Bertrand et al (2018) evaluate effects of the Norwegian reform (first of its kind) on women’s labor market outcomes – focus on women in business who are most likely to benefit from the reform

• Mixed findings (interim results):
  – On the one hand, the reform succeeded in reducing gender disparities on corporate boards:
    • Not just in terms of numbers (mechanical) but also in terms of observable qualifications
  – Beyond these direct gains for the narrow set of women on boards, not much evidence of spillovers to other women who could have indirectly benefitted:
    • In particular, female executives at firms with a greater share of women on board (due to the quotas) do not have improved career prospects

• Ultimately, these results are not that surprising in that quotas seem to be a very indirect (at best) response to what is holding women’s back
Engineering more diversity

• Corporate policies also often incorporate some elements of affirmative action, more or less formally:
  
  – E.g. pro-active steps towards achieving minimal female representation on key committees

• Given women’s under-representation, this may imply more committee work for the average woman than the average man
  
  – Example: academia: Misra et (2011) survey 350 faculty members at the University of Massachusetts Amherst:
    • Three-quarters of women associate professors, compared with half of their male counterparts, had played major service roles.
    • (Women promoted to FT professor at lower rate than men)

• Possible of perverse effects in the interim period:
  – E.g. Non-linear pay and gender pay gap within occupation
Concluding remarks

• What about labor market discrimination/sexism?
  – Not arguing, or believing, that it is irrelevant
  – But *strongly* arguing that other explanations are quantitatively very relevant
  – Absent direct testing, discrimination is the “residual”

• Many trends are moving in the “right direction” for women, some very quickly (such as the large and still increasing reversal of the gender gap in completed schooling) and some more slowly (such as the declining conservativeness of gender norms).

• It is possible though that changes in the structure of work and job design over the last 40 years may not have not been as beneficial to women.

• How the next wave of technological change in the workplace will change the structure of work is anyone’s guess.