

# What Do We Know About the Gender Wage Gap?

**Francine D. Blau (Cornell University)**

Australian Conference of Economists

July 14, 2021

# Overview

- New empirical evidence on the extent, trends and sources of the gender wage gap in the US (1980-2010)
- 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 (temporal flexibility, noncognitive skills/psychological attributes, gender norms)
- Policies

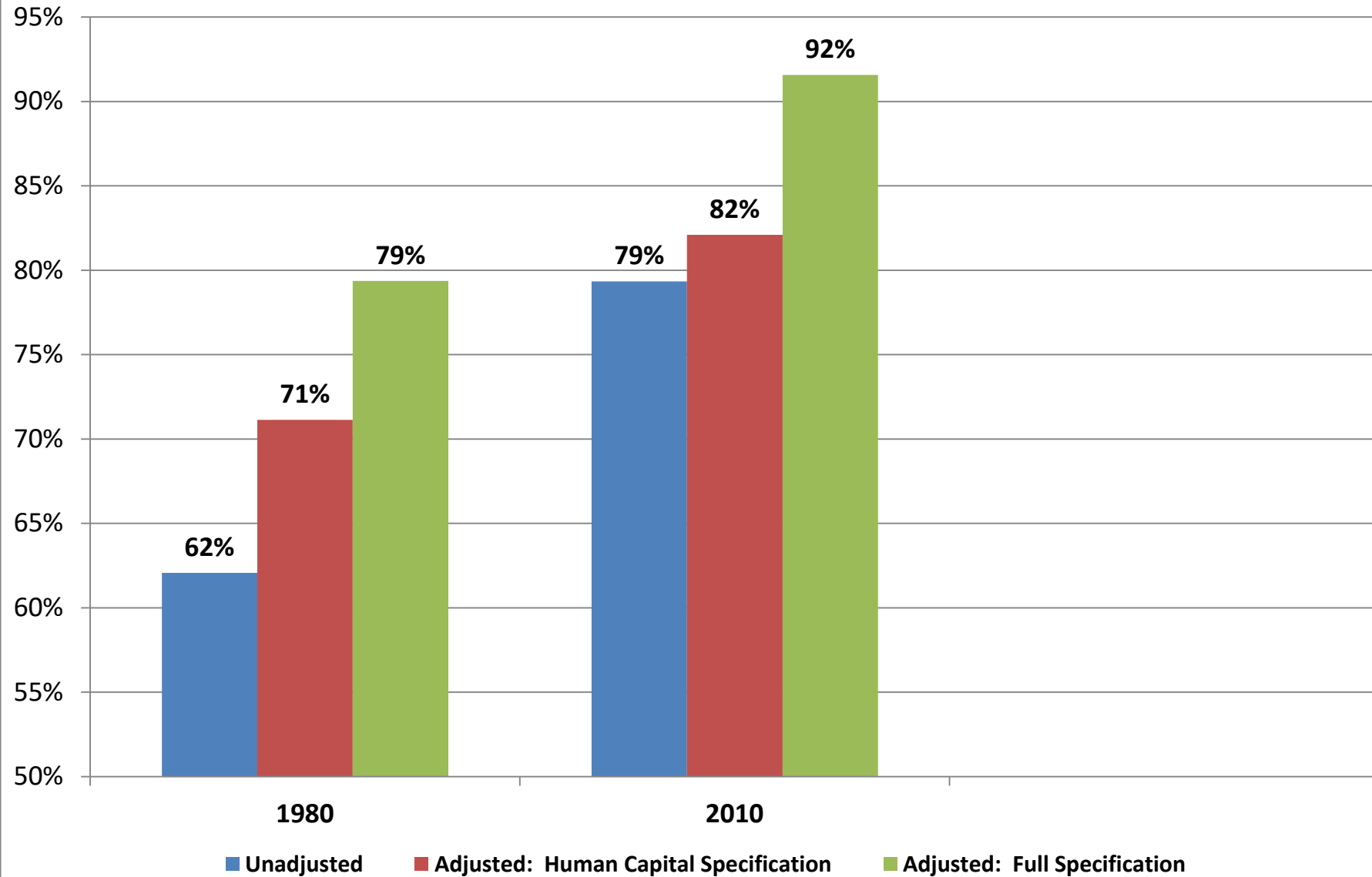
# Overview

- Drawing on much joint work with Lawrence M. Kahn, especially Blau and Kahn *JEL* (2017)
- Also, recent work on selection with Lawrence Kahn, Nikolai Boboshko, and Matthew Comey NBER Working Paper (2021)

# Extent and Trends (US)

- Data from the Panel Study of Income Dynamics (PSID)
  - Nationally representative, longitudinal, *includes data on actual labor market experience*
  - Mainly 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

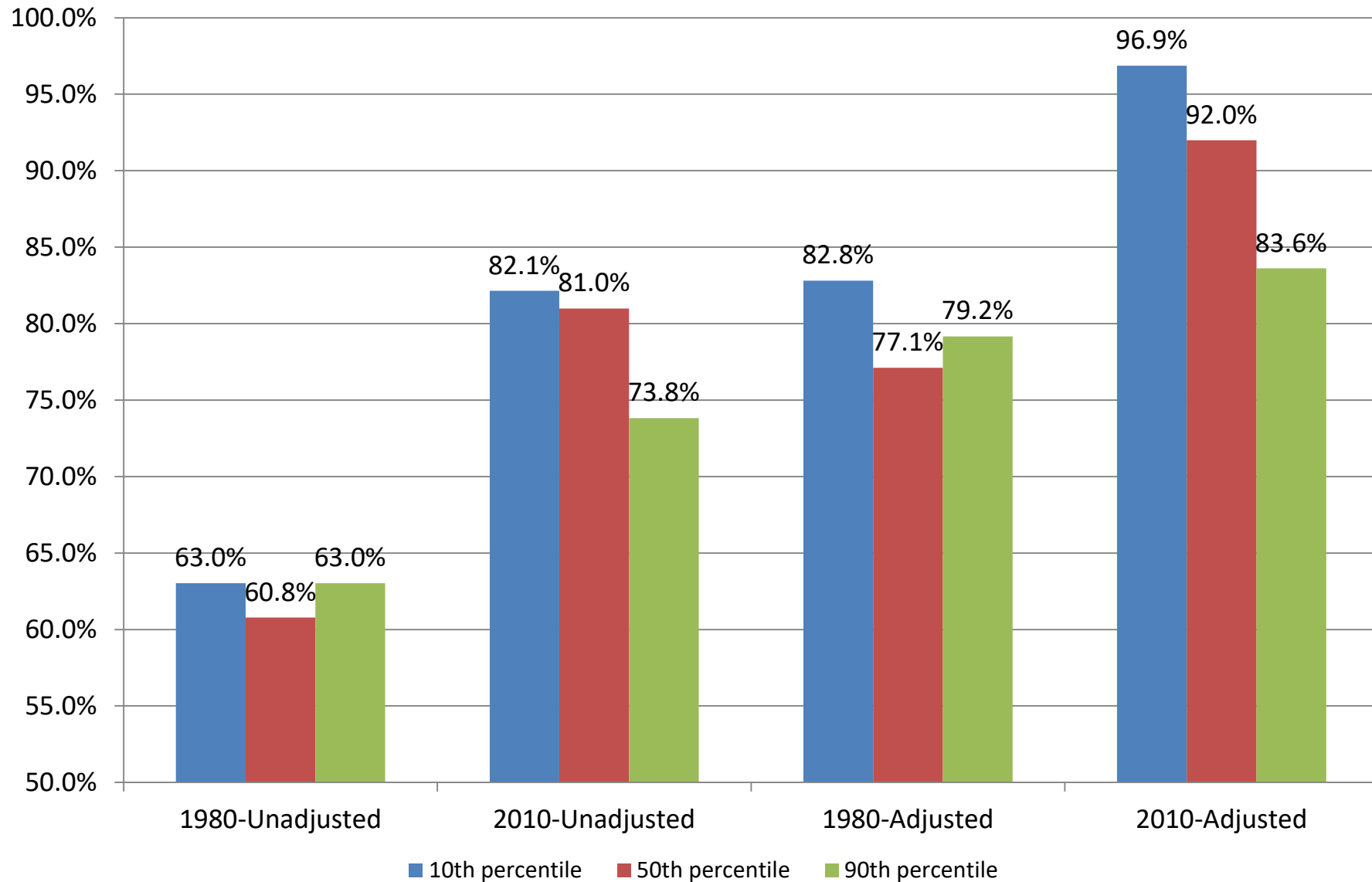
## Female to Male Log Wage Ratio, Unadjusted and Adjusted for Covariates (PSID)



# 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)



# What Accounts for the Decrease in the Overall Gender Wage Gap?

- 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)

Sources	Percent
<b>Effect of Changing Means</b>	<b>57.5</b>
Education	14.0
Experience	17.6
Unionization	12.3
Industry	-1.3
Occupation	15.0
Other	-0.2
<b>Effect of Changing Coefficients</b>	<b>-15.7</b>
<b>Effect of Changing Unexplained Gaps</b>	<b>58.3</b>
<b>Change in the Total Wage Gap (-.246 log pts)</b>	<b>100.0</b>

# 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

See Blau and Kahn (2017, 1997, and 2006), Mulligan and Rubinstein (2008), Welch (2000), Bacolod and Blum (2010)

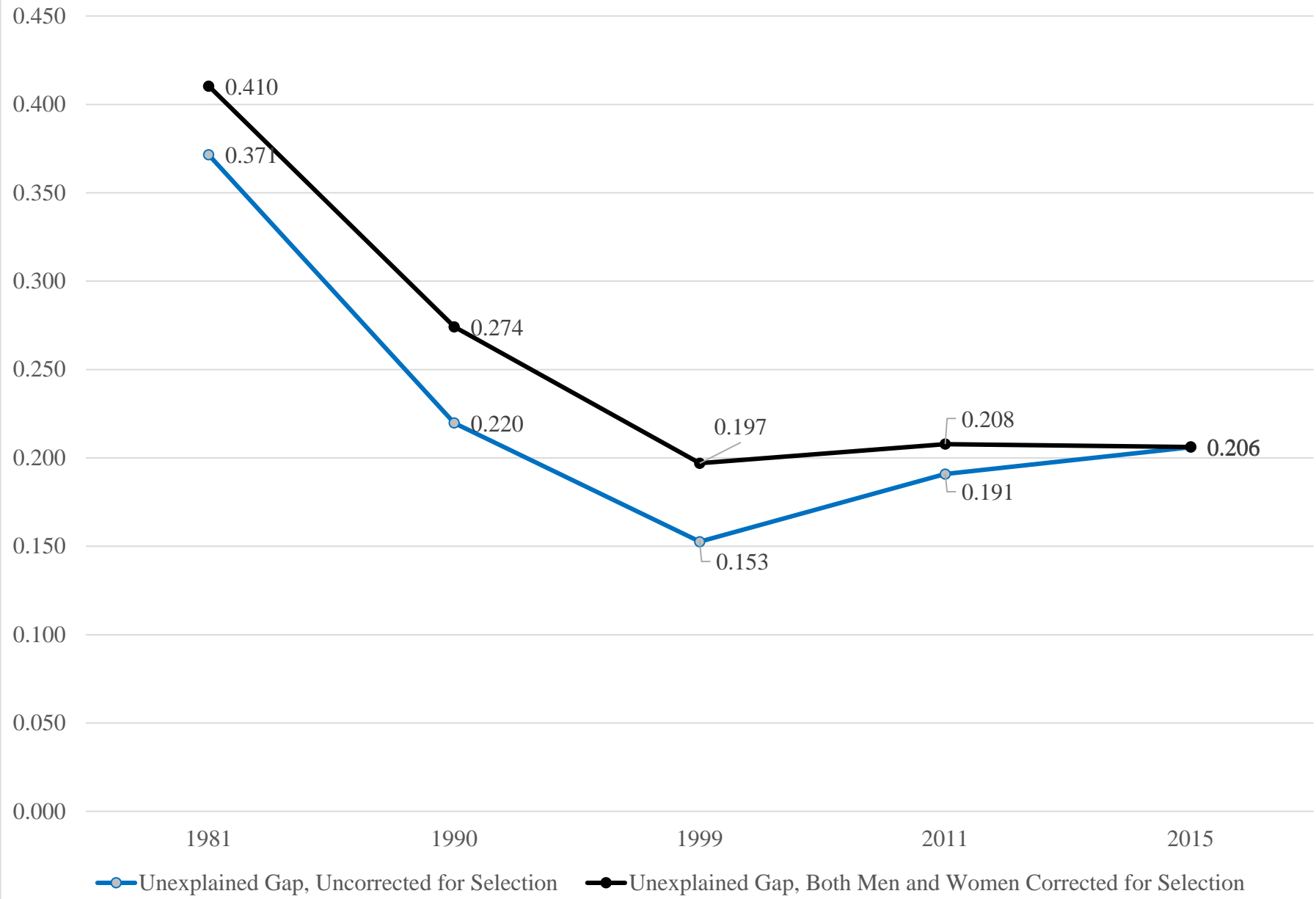
# What about selection?

- Levels and trends in the observed gender wage gap may be influenced by compositional shifts in the female and male workers in terms of unmeasured factors (Heckman 1979)
- Direction of bias unclear
- Female participation rates increasing, male rates decreasing
- Previous work used nonrepresentative subsamples or wage imputation methods that were highly sensitive to underlying assumptions; produced mixed results

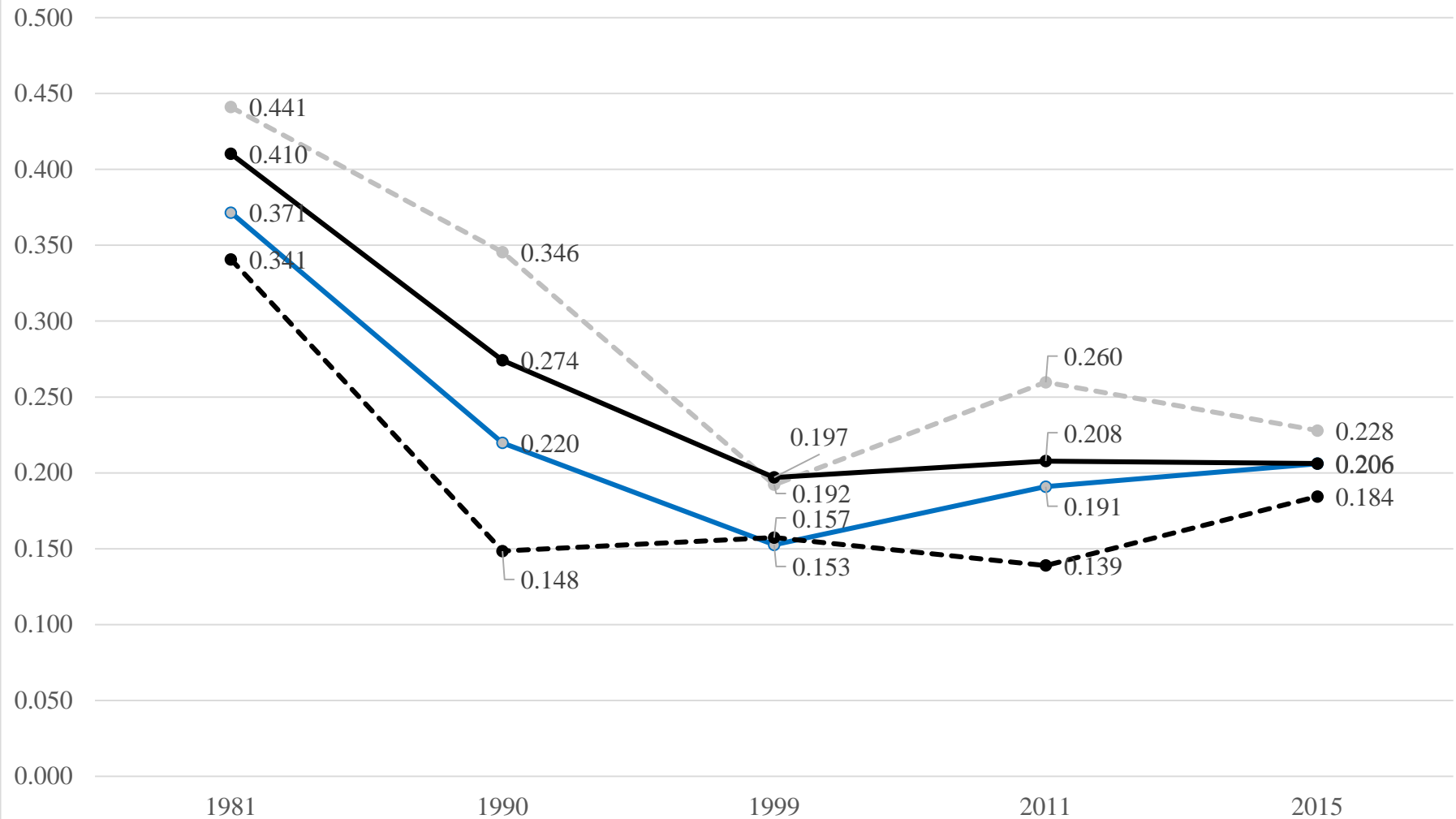
# What about selection?

- Our preferred approach
  - Using our longitudinal data, we obtain wage data for adjacent years for those without current wages (Neal 2004).
  - For those still lacking wage data we assign individuals wages based on a set of predicted probabilities of their wages falling into each wage decile based on their observed characteristics (Olivetti and Petrongolo 2008)
- Results robust—convergence in the gender wage gap not an artifact of selection; in our preferred approach convergence a bit faster after adjusting for selection

### Unexplained Median Pay Gaps Correcting and Not Correcting for Selection



### Unexplained Median Pay Gaps Correcting and Not Correcting for Selection



- Unexplained Gap, Uncorrected for Selection
- -●- - Unexplained Gap, Only Women Corrected for Selection
- -●- - Unexplained Gap, Only Men Corrected for Selection
- Unexplained Gap, Both Men and Women Corrected for Selection

# Explanations: Human Capital

- In the aggregate education and experience, *taken together*, don't explain much in the US 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: Demand for Flexibility

- 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* (Sigle-Rushton and Waldfogel 2007); male marriage premium; joint location issues
- Child penalty (Klevorick et al 2019)
- 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 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

Study	Sample	Traits examined	Raw gender wage gap (logs)	Effect of gender differences in psych. factors on gender pay gap (logs)	Percentage of gender pay gap due to gender differences in psych. traits
Mueller and Plug (2006)	Wisconsin 1957 HS grads, 1992 data	"Big 5": extroversion; agreeableness; conscientiousness; neuroticism; openness	0.587	0.043–0.095	7.3–16.2
Semykina and Linz (2007)	Russia 2000–2003	Locus of control; challenge/affiliation	0.311–0.397	0.012–0.026	3.0–8.4
Fortin (2008)	US NELS 1972 and 1988 cohorts: 1979, 1986, and 2000	Self-esteem; locus of control; money/work importance; people/family importance	0.181–0.237	0.008–0.032	4.4–14.0
Manning and Swaffield (2008)	British cohort study: 1970 birth cohort, 2000 data	Risk; competitiveness; self-esteem; other-regarding; career orientation; locus of control	0.203	0.005–0.056	2.5–27.6
Nyhus and Pons (2012)	Netherlands 2005	Locus of control; time preference	0.246	0.028–0.035	11.5–14.1
Reuben, Sapienza, and Zingales (2015)	2008 Univ. of Chicago Booth MBA cohort	Taste for competition	0.119	0.010–0.012	8.4–10.1
Cattan (2014)	NLSY 1979, 4 points in life cycle	Self-confidence	0.18–0.30	0.010–0.036	5.4–14.5

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))
- Continued importance of antidiscrimination laws
- Wage setting institutions—role of unions and government (Blau and Kahn 1996, 2003)

# 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; long hours important particularly in professions like law and business
- Differences in location of men and women (by occupation and industry) most important *measurable* factors in the US—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 low skilled women faring a bit better
  - Fates intertwined by the family—growth of female headship