# *Osher Lifelong Learning Institute, November 2026*
# *The Economics of Public Policy Issues*

**University Of Minnesota**

**Host: Geoffrey Woglom, Director**
**National Economic Education Delegation**



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## Available NEED Topics Include:

- US Economy
- Healthcare Economics
- Climate Change
- Economic Inequality
- Economic Mobility
- Trade and Globalization
- Minimum Wages
- Immigration Economics
- Housing Policy
- Federal Budgets
- Federal Debt
- Black-White Wealth Gap
- Autonomous Vehicles
- US Social Policy



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# Course Schedule

## Contemporary Economic Policy

- Week 1 (10/8): Economic Update & Changes at the Fed, Geoffrey Woglom, Amherst College
- Week 2 (10/15): Climate Change Economics, Galina Hale, UC Santa Cruz
- Week 3 (10/22): The Future of Money, Geoffrey Woglom, Amherst College
- Week 4 (10/29): The Economics of Tariffs, Tibor Besedes, Georgia Institute of Technology
- Week 5 (11/5): Economics of Immigration, Tibor Besedes, Georgia Institute of Technology
- **Week 6 (11/12): Gender Pay Gap, Tibor Besedes, Georgia Institute of Technology**



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# Submitting Questions

- **I encourage questions. Please put questions in the chat and I will answer them periodically during the talk,**
- **We will do a verbal Q&A once the material has been presented.**
- **Slides are available from the NEED website https://needecon.org/delivered_presentations.php.**



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# Outline

- **What is the gender wage gap?**
- **The gender wage gap in numbers.**
- **What are the potential causes for this gender wage gap?**
- **What can we do?**



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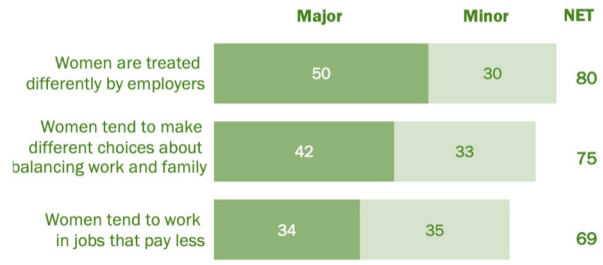
# The Issue of Gender Wage Gap

*"We have to pass pay equity for women workers. It is not acceptable that women are making 78 cents an hour compared to men."*

-- Sen. Bernie Sanders, 2015

**Half of U.S. adults say women being treated differently by employers is a major reason for the gender wage gap**

*% of U.S. adults who say each of the following is a ___ reason why women earn less, on average, than men*




Source: Survey of U.S. adults conducted Oct. 10-16, 2022.

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# Popular Theories

- Biased managers and co-workers
- Occupational segregation
- Inferior bargaining skills
- Lack of competitiveness
- Labor market incentives
- And more

We will delve deeper into what is meant by the gender wage gap and how economists think about the issue.



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# What is Gender Wage Gap?

- **Gender wage gap represents the difference in median earnings of women relative to those of men.**
- **The gap is usually calculated as a ratio of women's earnings to men's earnings.**
  - For example, in the fourth quarter of 2023, median weekly earnings for full-time female workers was $1,047, and that for male was $1,254.
  - Therefore, the gender wage gap in Q4, 2023 was:

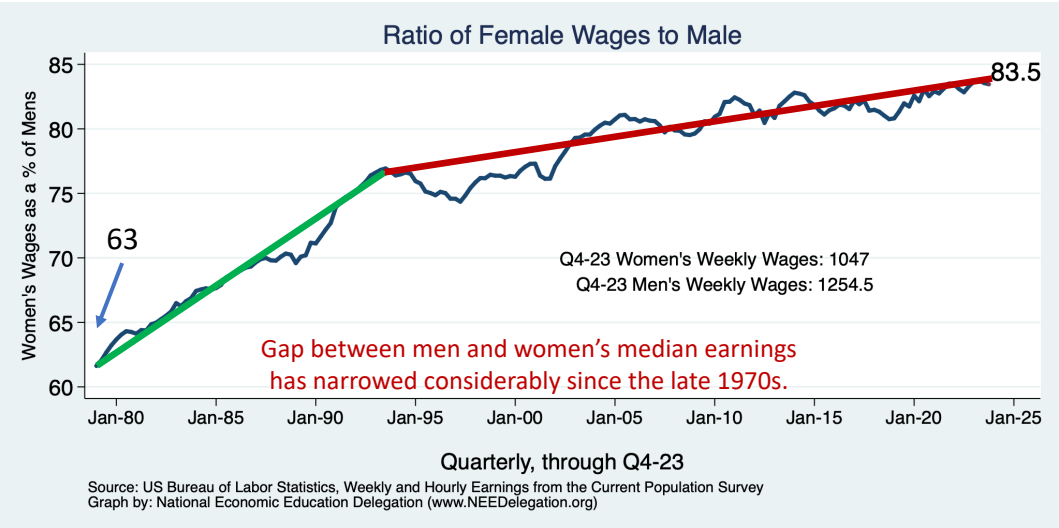
$$\frac{\$1,047}{\$1,254} = 83.5\%$$

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# Relative Wage Gap Over Time




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## Sources of Reduction

- **Relatively more women in jobs with collective bargaining (unions).**
  - Falling for both since 1981, but more for men than women.
- **Women are getting more education than men.**
- **Women's devotion to the labor market is growing.**



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## Significant strides have been made

- **Progress made in combating gender inequality and discrimination against women in workplace since the 1970s**
  - The Fair Labor Standards Act of 1938,
  - The Equal Pay Act of 1963,
  - Title VII of the Civil Rights Act of 1964, and
  - The Pregnancy Discrimination Act of 1978
  - Tax Cuts and Jobs Act 2017 – disclosure of sexual harassment settlements
  - Providing Urgent Maternal Protections (PUMP) for Nursing Mothers Act
  - Pregnant Workers Fairness Act



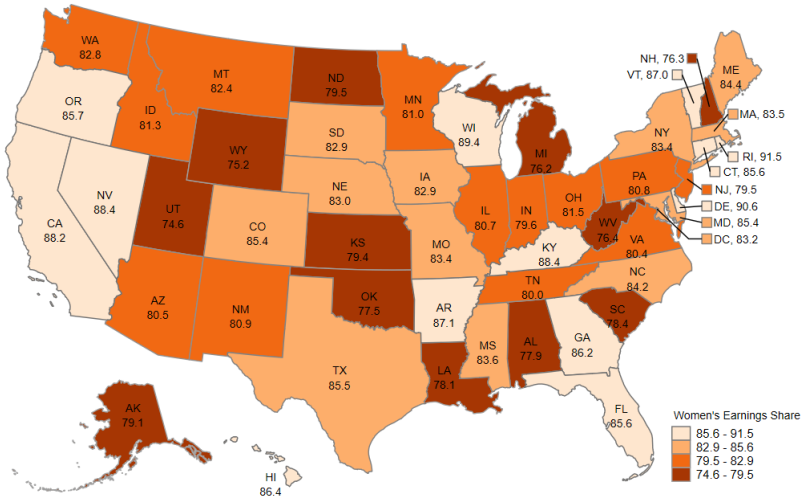
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# Wage Gap by State

Women's Median Weekly Earnings as a Percentage of Men's, 2021

Leaders:
- Rhode Island: 91.5
- Delaware: 90.6
- Wisconsin: 89.4

Laggard:
- Utah: 74.6

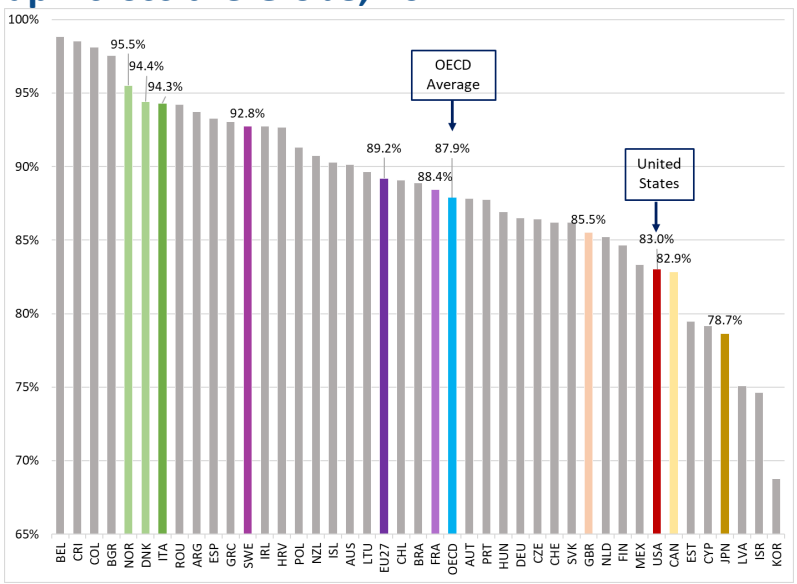



Women's median weekly earnings, in the United States, accounted for 83.1% of men's earnings in 2021.
Source: U.S. Bureau of Labor Statistics



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# Wage Gap Across the Globe, 2022






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# The Wage Gap

- **The gender wage gap is a summary statistic.**
  - Hides lots of variation.
- **Wage comparison based on a limited sample. Men and women:**
  - Working full time
  - Working year round
- **Wage gap is not: Apples to Apples**
  - Does not compare wages of men and women in the same occupation or industry.



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# What Does the Wage Gap Capture?

- **It reflects gender differences in:**
  - jobs,
  - hours worked,
  - years of experience,
  - educational attainment,
  - personal choices that people make about their careers,
  - and discrimination.
- **Which begs the question of why the non-discrimination aspects differ by gender?**
  - Discrimination earlier in life?
  - The structure of our economic system?



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# What is NOT included in these calculations?

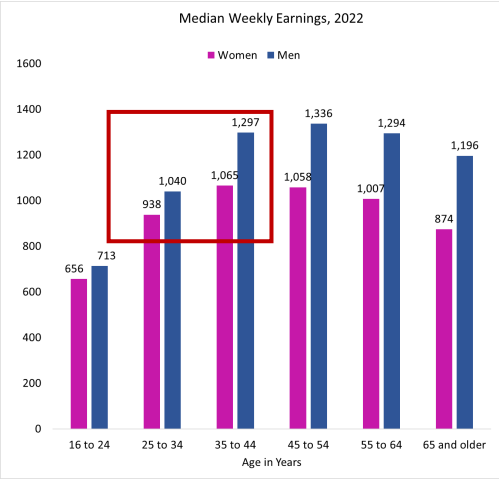
- **These are unconditional or uncontrolled or raw wage gap.**
- **The difference doesn't take into account important determinants of earnings such as:**
  - Age
  - Occupation
  - Educational attainment
  - Job skills and responsibilities
  - Work experience
  - Specialization

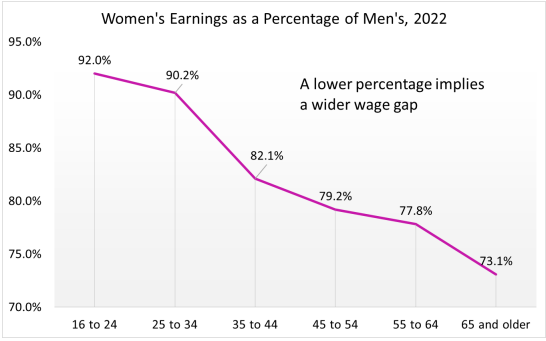


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# Wage Gap by Age

The gap between men and women's median earnings was the largest among those aged 45 years or older.



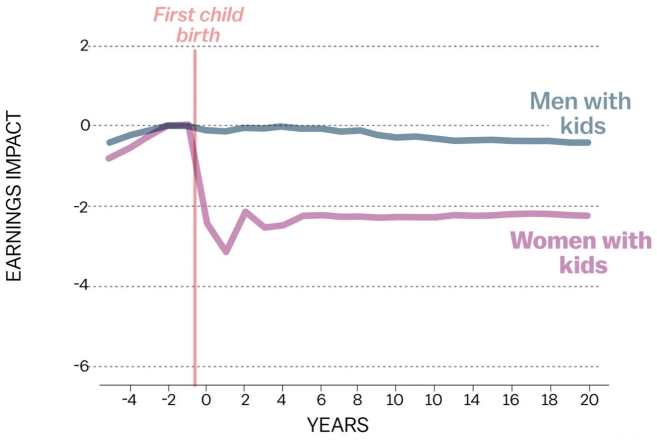






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# The Kid Effect

**Women's earnings drop significantly after having a child. Men's don't.**




Source: "Children and gender inequality: Evidence from Denmark," National Bureau of Economic Research

Vox

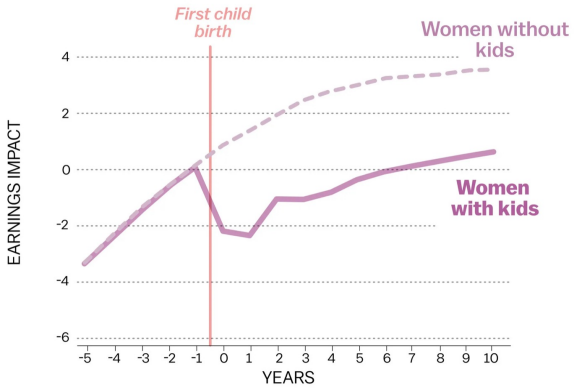
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# The Kid Effect

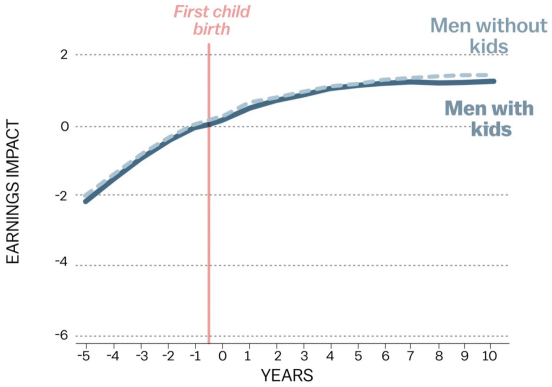
**Having a kid correlates with lower earnings for women**




Source: "Children and gender inequality: Evidence from Denmark," National Bureau of Economic Research

Vox

**Having kids doesn't affect men's salaries**




Source: "Children and gender inequality: Evidence from Denmark," National Bureau of Economic Research

Vox

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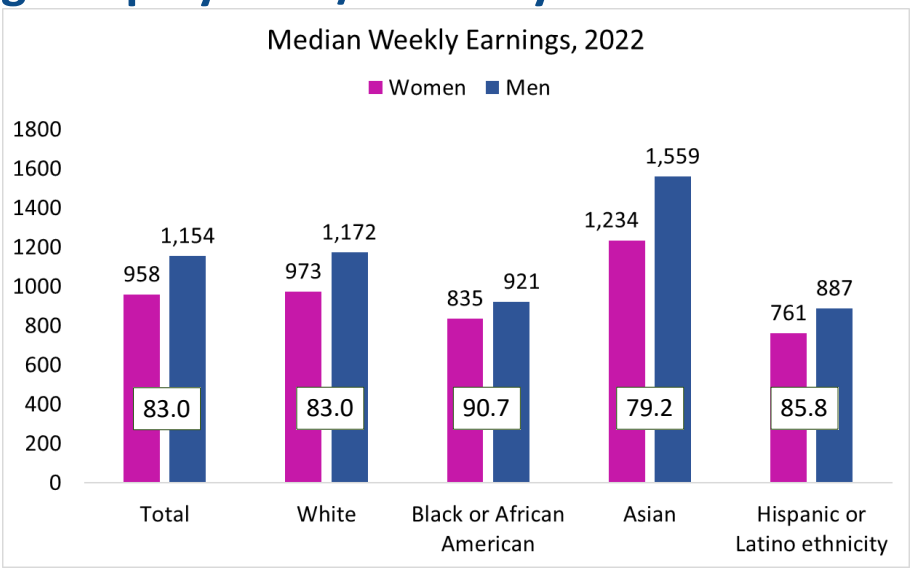
# Earnings Penalty for Taking Time Out

- Occupations with the largest wage gap tend to also be highly skilled.
- Earnings penalty for taking time out for career paths with the most prestigious degrees is generally very high.
- Earnings penalty for taking time off, at 15 years since leaving college with a Bachelors:
  - Lowest for MDs
  - Highest for MBAs - at 1.4 times the penalty for MDs
  - Followed by JDs and PhDs - at 1.2 times the penalty for MDs
- Women with children tend to do less well than men with children.



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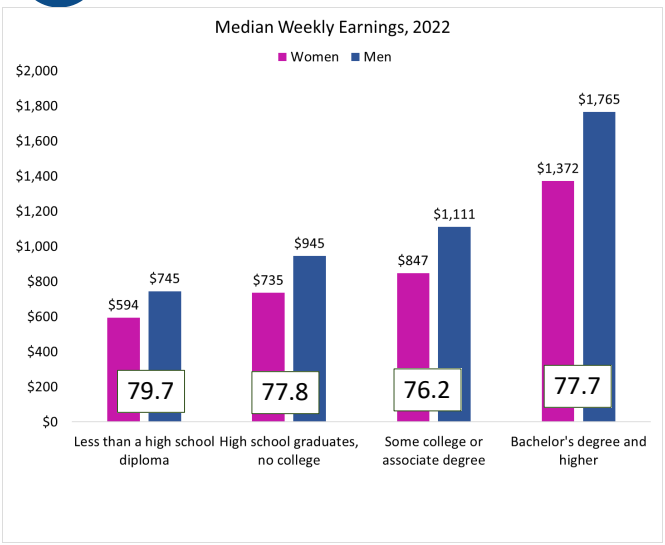
# Wage Gap by Race/Ethnicity






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# Wage Gap by Level of Education



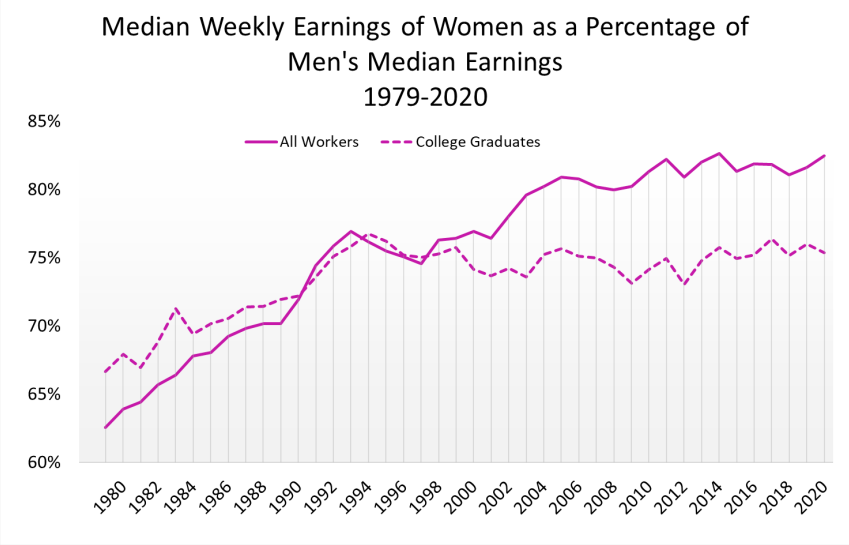

In 2022, median weekly earnings for 25 years or older:
Women - $1,002
Men - $1,219
Wage Gap – 82.2%

- The gap between men and women's median earnings was larger than the national average among college graduates, with women's median earnings at only 77.7% of men's.



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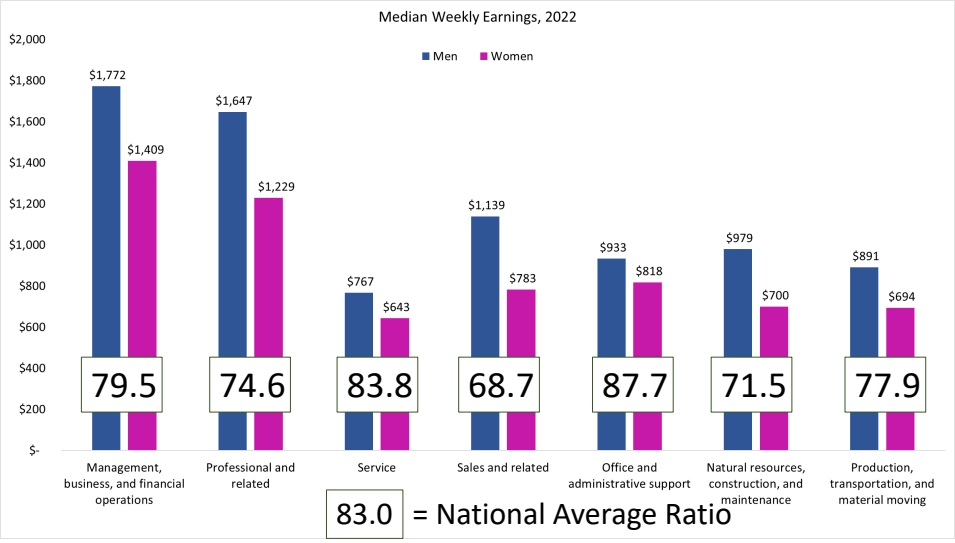
# Gender Wage Gap Over the Years – College Graduates






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# Weekly Earnings by Occupation




83.0 = National Average Ratio



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# Gender Distribution of Occupations



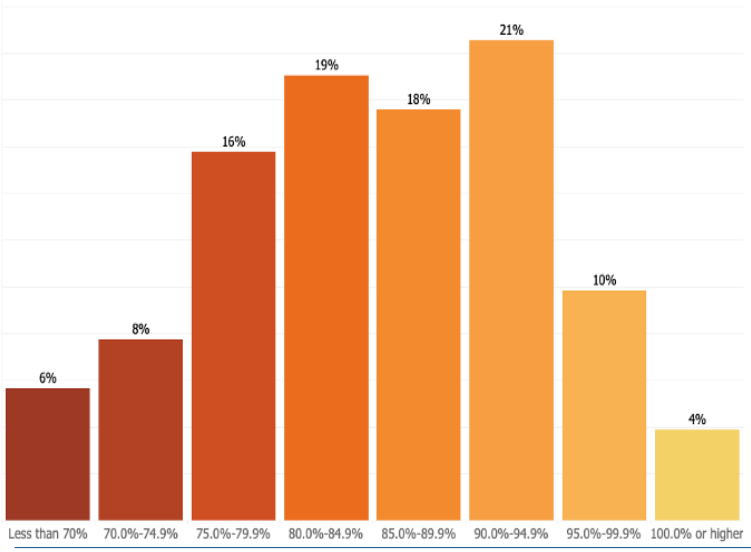

83.0 = National Average Ratio



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# Wage Gap by Occupation: 2021

Women's Earnings as a Share of Men's Across the Occupational Distribution




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Source: https://www.dol.gov/agencies/wb/data/earnings

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# Occupations with the Lowest Wage Gap, 2022

| Occupation | Female-Male Median Weekly Earnings Ratio | Share of Women in the Occupation | Share of Women Workforce |
|---|---|---|---|
| Compliance officers | 104% | 55% | 0.3% |
| Licensed practical and licensed vocational nurses | 103% | 87% | 0.8% |
| Wholesale and retail buyers, except farm products | 102% | 51% | 0.1% |
| Teaching assistants | 100% | 86% | 1.4% |
| Educational, guidance, and career counselors and advisors | 100% | 75% | 0.5% |
| Other life, physical, and social science technicians | 98% | 50% | 0.2% |
| Physical therapists | 98% | 64% | 0.3% |
| Special education teachers | 97% | 82% | 0.5% |
| Office clerks, general | 96% | 87% | 1.6% |
| Social workers, all other | 95% | 81% | 1.0% |
| Security guards and gambling surveillance officers | 95% | 26% | 0.4% |
| Packers and packagers, hand | 94% | 58% | 0.6% |
| Industrial truck and tractor operators | 94% | 9% | 0.1% |
| Stockers and order fillers | 94% | 36% | 0.8% |
| Loan interviewers and clerks | 94% | 68% | 0.2% |
| Market research analysts and marketing specialists | 93% | 58% | 0.4% |
| Shipping, receiving, and inventory clerks | 93% | 35% | 0.4% |
| Packaging and filling machine operators and tenders | 93% | 51% | 0.3% |
| Office and administrative support workers, all other | 91% | 74% | 0.7% |
| Software developers | 90% | 21% | 0.8% |
| Production, planning, and expediting clerks | 90% | 49% | 0.2% |
| Elementary and middle school teachers | 90% | 79% | 4.6% |
| Total | | | 15.7% |

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# Occupations with the Highest Wage Gap, 2022

| Occupation | Female-Male Median Weekly Earnings Ratio | Share of Women in the Occupation | Share of Women Workforce |
|---|---|---|---|
| Real estate brokers and sales agents | 63% | 54% | 0.5% |
| Personal financial advisors | 63% | 38% | 0.3% |
| Sales managers | 68% | 35% | 0.4% |
| Financial managers | 69% | 55% | 1.3% |
| Inspectors, testers, sorters, samplers, and weighers | 70% | 40% | 0.5% |
| Recreation workers | 71% | 56% | 0.1% |
| Insurance claims and policy processing clerks | 74% | 82% | 0.4% |
| Medical and health services managers | 74% | 72% | 0.9% |
| Sales representatives of services, except advertising, insurance, financial services, and travel | 75% | 28% | 0.3% |
| **Total** | | | **4.8%** |



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# Explaining Gender Wage Gap by Occupation

- **Women, traditionally, the "on-call" parent.**
- **Prefer occupations with:**
  - shorter hours,
  - fewer "on-call" hours,
  - predictable schedules,
  - standardized products/services, and,
    - greater substitutability of workers within teams.
- **Men, traditionally, opt for jobs with greater time demands but pay more.**
- **Men appear to care less about time flexibility.**
  - Ready to work evening/weekend hours to meet clients.
  - Affects occupation selection.



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# Explaining Gender Wage Gap by Occupation

- **High time demand occupations:**
  - Contact with others
  - Frequency of decision making
  - Time pressure
  - Structured vs. unstructured work
  - Establishing and maintaining interpersonal relationships
- **Level of competition within an occupation**
- **Income inequality among men within an occupation**



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# Gap Occurs Primarily WITHIN Occupations

Where does the wage gap come from?

| | Between Occupations | Within Occupations |
|---|---|---|
| All Workers | 15% | 85% |
| College Graduates | 35% | 65% |



Source: Reassessing the Gender Wage Gap: Sharing Jobs, Equalizing Pay, Right Now, the Expanding Harvard Universe.

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# Non-Linearities in Pay and the Wage Gap

- **Pay increases with the number of hours worked each week.**
  - Why?
    - In some occupations, workers are not good substitutes for each other.
    - To ensure continuity, employers value individual workers working more hours.
  - Implications:
    - Households divide the work.
      - Rather than both working 40 hours, perhaps one works 80 and the other does not work.
        - Women are more likely to be the ones working fewer hours, receiving less pay.



Source: Reassessing the Gender Wage Gap: Sharing Jobs, Equalizing Pay, Right Now, the Expanding Harvard Universe.

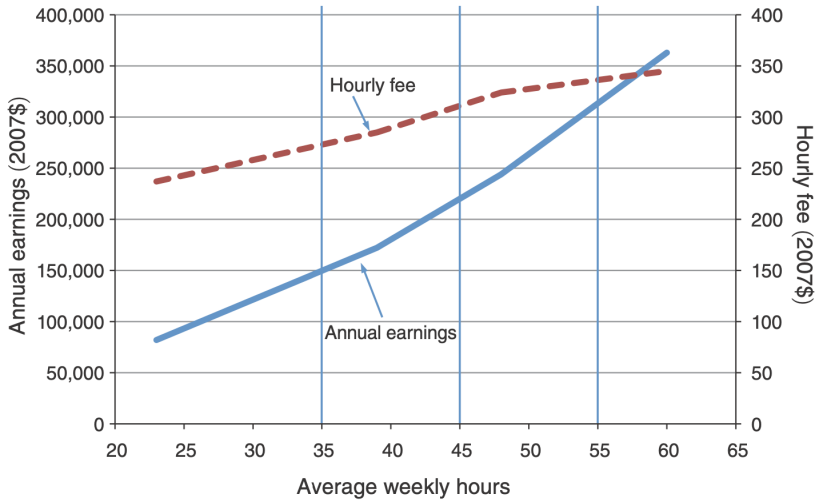


# Evidence on Non-Linearities from Law Firms

Lawyers:

Hours go up

So does hourly pay






Source: A Grand Gender Convergence: Its Last Chapter, Goldin, AER, 2014.

## These are Still Unadjusted Wage Gap Numbers

- In the previous slides we controlled for one factor at a time that might affect earnings of workers.
  - Controlling for just one of the factors may not fully explain earnings differences.
- For example, when comparing median earnings differences by **occupation**, we still would like to know if these differences can be further explained by differences in other key factors such as:
  - age,
  - job responsibilities,
  - work experience, and
  - other individual life choices such as marital status or to have children and to take time off to raise them.



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## Adjusting the Wage Gap

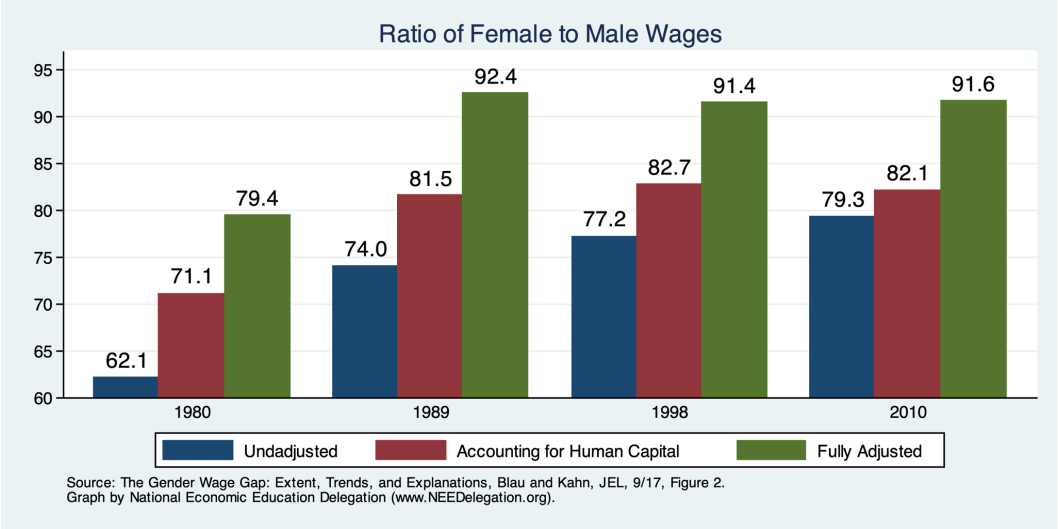
- **Men and women make different choices. It is possible to account for some of those choices to explain the wage gap.**
- **Two possible adjustments:**

- **Adjustment 1 accounts for human capital:**
  - Education
  - Experience
  - Geographic region
  - Race
- **Adjustment 2 also accounts for:**
  - Unionization
  - Industry
  - Occupation



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# Wage Gap With Adjustments




Source: The Gender Wage Gap: Extent, Trends, and Explanations, Blau and Kahn, JEL, 9/17, Figure 2.
Graph by National Economic Education Delegation (www.NEEDelegation.org).



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# What do the Adjustments Tell Us?

- **Human capital decisions, as well as region and race, matter for the wage gap.**
- **Ultimate job matters:**
  - Is it unionized?
  - Is it an industry with a large gap?
  - Is it an occupation with a large gap?
- **Still 10% unaccounted for.**
  - Is this discrimination?
    - Perhaps, but not all of it.
    - Labor market decisions are influenced by discrimination or perceptions of women's vs men's majors, occupations, or industries.



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# Sorting: The Decisions Men and Women Make

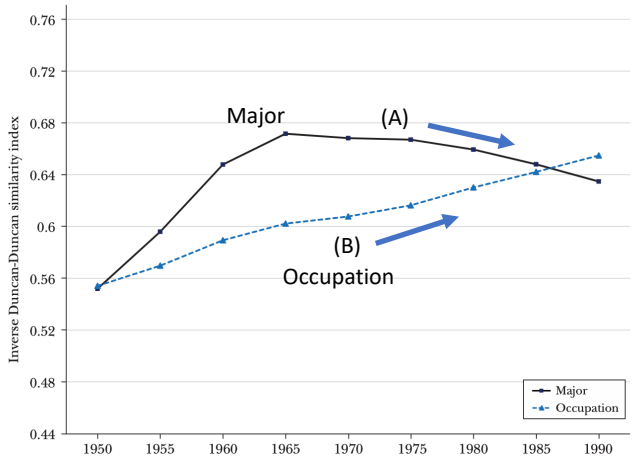
- **Sorting happens:**
  - With the decision to go to college.
  - With the election of a major.
  - With the choice of an occupation.
- **Women tend to:**
  - Go to college **more** than men.
  - Select majors with **lower** expected wages.
    - Though convergence WAS happening.
  - Within a major, select occupations with **lower** wages.
    - Though convergence IS happening.





# Occupation Convergence, Less So Majors

**Gender Similarity in Major and Occupation by Cohort**




Values close to 1 imply parity.

Less than 1
- women's choices correspond to lower wages

Greater than 1
- women's choices correspond to higher wages

(A) Women are increasingly choosing **majors** that **pay less than** the majors chosen by men.

(B) Women are increasingly choosing **occupations** that **pay as well as** the occupations chosen by men.



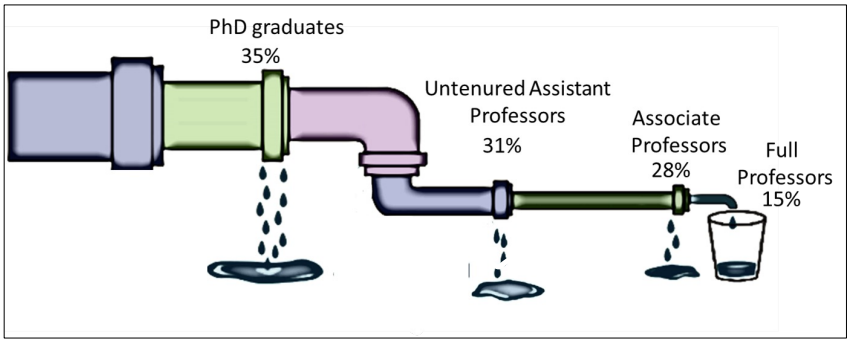
Source: *College Majors, Occupations, and the Gender Wage Gap*, Sloane, Hurst, and Black, JEP, Fall 2021.

# The Leaky Pipelines Phenomenon

- **In many professional occupations**
  - There's a more equitable gender distribution at entry level,
  - But at the higher ranks, number of female workers plummets.
- **Time demands – likely explanation?**

**The Leaky Pipelines In Economics**

**Share of Women in Economics, 2020**




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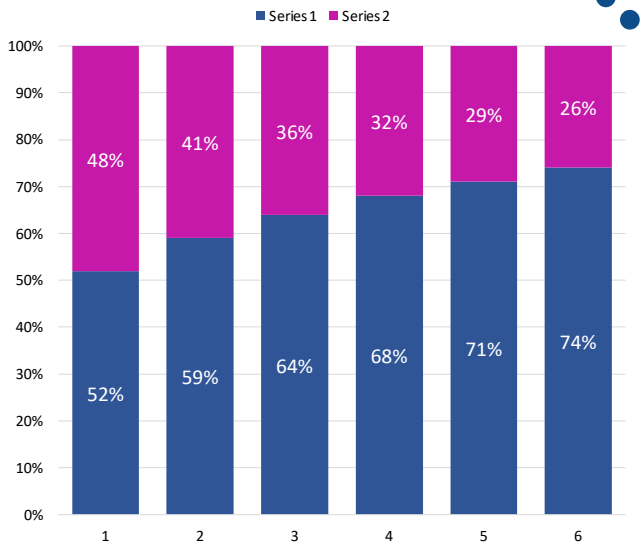
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# The Broken Rung and the Great Breakup

- Women are significantly underrepresented in leadership.
- A broken rung at the first step up to manager is holding women back.
  - For every 100 men who are promoted from entry-level roles to manager positions, only 87 women are promoted.
- The Great Breakup
  - **New Pipeline Problem**
  - More women leaders are leaving their companies.

Share of Men and Women in Corporate Role, 2022




Source: Women in the Workplace 2022, LeanIn.Org and McKensey, 2022

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## Solutions to the Gender Wage Gap

- **Debiasing the labor market**
  - Diversity training for supervisors and managers.
  - Changing the organizational culture.
  - Gender blind hiring/evaluation procedures.
- **Training women to be more competitive and removing unconscious bias.**
- **Legislative actions by federal and state governments.**



## The System - Not Individual Bias is the Culprit

- **The "system" is characterized by:**
  - Decisions made by ordinary couples in terms of being on-call at work or at home.
  - Cost of time flexibility at work.
- **The higher the cost of time flexibility, the higher is the likelihood of a couple to forego equity in favor of higher family income.**
- **Substitution among workers needs to be encouraged in occupations with high gender pay gaps.**

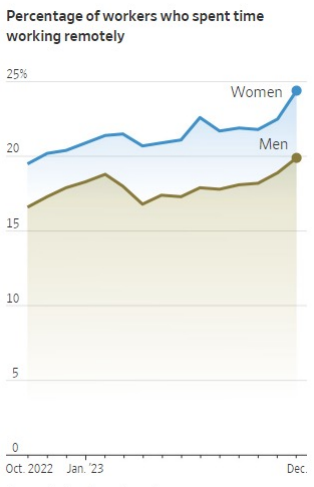
# Private Sector is Responding... Slowly

- **Firms have more incentive to retain the female employees now than ever.**
  - With more women entering the profession.
  - More men wanting equitable relationships with their life partners.
  - Costly job training.
  - Valuable client-employee relationships formed by the women in early years.



# Time Demand Tradeoffs and COVID-19

- **COVID-19 accelerated trends towards more workplace flexibility.**
- **Remote work may have lasting beneficial impact on all workers, including women.**
- **But there may also be losses.**
  - Promotions?
- **Women's attachment to labor market at risk due to:**
  - Difficulty in obtaining affordable, dependable childcare.



## What can we do?

- **Reduce the cost of flexibility**
- **Increase or incentivize substitutability**
- **Reduce the cost of caregiving – childcare as well as elderly care**
- **Alter societal norms**

"We need men to lean out at work, support their male colleagues who are on parental leave, vote for public policies that subsidize childcare, and get their firms to change their greedy ways by letting them know that their families are worth even more than their jobs. Dreams won't come true, aspirations won't be realized unless men are brought along for the rest of the journey."

-- Claudia Goldin



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## What Have We Learned?

- **The gap is significant and seemingly stubborn.**
  - Some, but not very much progress in the last 20 years.
- **Discrimination clearly plays a role, but we can't identify how much.**
  - In wage setting, in people's choices, as a result of market structures.
- **Gender roles in child rearing play an enormous role.**
- **Government policy can help, by:**
  - Implementing policies that reduce the child-bearing penalty for women.
    - Access to childcare, for instance.
  - Influencing the structure of labor markets, the workplace, hiring practices, and job flexibility.
  - Generally, address the hours/compensation relationship.



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## Let's Hear from You!

# Questions?

## Tibor Besedes

**Contact NEED: Info@NEEDEcon.org**

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