Minimum Wage and the U.S. Gender Wage Gap: A State-Level Analysis

Christine Storrie[1]   Kpoti Kitissou[2]   Taylor Lee[3]

[1]SUNY Oneonta

[2]SUNY Oneonta

[3]U.S. Food and Drug Administration

IAFFE Joint Session with the Association for Social Economics ASE
ASSA 2023 Annual Meeting

Motivation

- Building on previous work
- State-level differences in demographics
- Minimum wage laws vary across states and have changed drastically in recent years, but Federal minimum wage rate has not increased since 2009

State Differences in Earnings for Men and Women:

- ACS Survey report (2009)
  - Wyoming - 64%
  - D.C. - 88%
- Smega (2009)
  - 4 states with GWG's below 70%
  - 9 states with GWG's 80% or above
- Hoffman (2015)
  - 2008-2009, Louisiana largest GWG and D.C. smallest
  - Maine had largest regression adjusted impact
- Ryu (2010)
  - Institutional environments and substantive policies

Gender Pay Gap and Minimum Wage:

- Low-wage workers
  - Robinson (2005) - Britain
  - Majchrowska and Strawiński (2018) - Poland
  - Bargain, Doorley and Kerm (2019) - UK
- Younger workers
  - Shannon (1996) - Canada
  - Li and Ma (2015) - China
  - Wong (2019) - Indonesia

Contributions

- Add to the literature for gender wage gaps and minimum wage by doing an analysis on the United States at a state level.
- We find variations in the size of the gender wage gap (GWG) between the states of residency.
- States at or below federal minimum wage tend to have larger gender pay gaps.

Model 1: Baseline Mode

We estimate separate regressions for women and men to estimate earnings for each state controlling for years.

Equation 1

$$Earnings_i = \beta_0 + \beta_1 State_j + \beta_2 Year_{it} + \epsilon_i \tag{1}$$

- Earnings: Ln(Weekly Earnings)
- Year= Year fixed effects for 2016-2021

Model 2: Adjusted Model

Equation 2

$$Earnings_i = \beta_0 + \beta_1 X_i + \beta_2 State_j + \beta_3 Year_{it} + \epsilon_i \qquad (2)$$

- Where X_i = individual worker characteristics
  - Age, Age^2
  - Race
  - Ethnicity
  - Educational Attainment
  - Married- spouse present
  - Number of children in household under the age of 18
  - Metropolitan Central City Status

Data

- CPS (IPUMS) 2016-2021
  - Limited sample to:
    - Full-time Year-round workers
    - Ages:18-67
   - Income restricted to those earning between $5,000-$300,000
    - U.S. Citizens

Summary Statistics

	(1) Full Sample	(2) Women	(3) Men
Asian	0.059	0.061	0.063
Black	0.136	0.159	0.116
White	0.777	0.750	0.799
Hispanic	0.141	0.137	0.144
Age	42.4	42.3	42.5
Married	0.545	0.535	0.545
No Children	0.551	0.534	0.564
One Child	0.189	0.211	0.170
Two Children	0.174	0.176	0.068
Three or More Children	0.086	0.079	0.198
Less than High School	0.040	0.030	0.048
High School	0.250	0.209	0.283
Some College or Associate's	0.280	0.287	0.274
Bachelor's Degree	0.277	0.294	0.263
Graduate Degree	0.154	0.180	0.132
Central City or Outside Central City	0.859	0.861	0.857
Usual hours worked per week	43.04	41.83	44.06
Usual number of weeks worked	50.68	50.56	50.77
Men	0.547		
Women	0.453		
Number of Observations	278,109	127,026	151,053

State-level Gender Earnings Ratio: Model 1 (Baseline)

State	(1)	State	(1)
Alabama	0.796	Montana	0.752
Alaska	0.829	Nebraska	0.819
Arizona	0.790	Nevada	0.828
Arkansas	0.781	New Hampshire	0.777
California	0.843	New Jersey	0.815
Colorado	0.802	New Mexico	0.835
Connecticut	0.825	New York	0.838
DC	0.898	North Carolina	0.778
Florida	0.812	North Dakota	0.745
Georgia	0.810	Ohio	0.774
Hawaii	0.834	Oklahoma	0.768
Idaho	0.764	Oregon	0.852
Illinois	0.787	Pennsylvania	0.852
Indiana	0.763	Rhode Island	0.795
Iowa	0.752	South Carolina	0.820
Kansas	0.791	South Dakota	0.780
Kentucky	0.741	Tennessee	0.794
Louisiana	0.735	Texas	0.787
Maine	0.824	Utah	0.778
Maryland	0.865	Vermont	0.857
Massachusetts	0.800	Virginia	0.720
Michigan	0.772	Washington	0.857
Minnesota	0.795	West Virginia	0.786
Mississippi	0.744	Wisconsin	0.788
Missouri	0.790	Wyoming	0.729

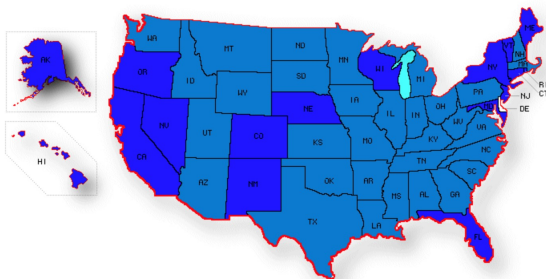# Baseline State-level Gender Wage Gaps Relative to U.S. Average
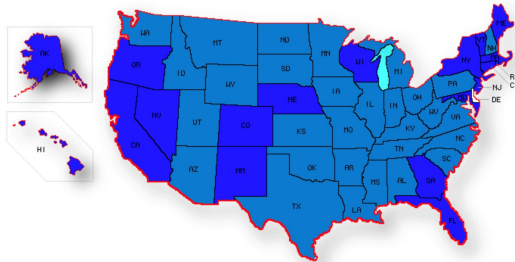
State-Level Gender Earnings Ratio: Model 2

State	(1)	State	(1)
Alabama	0.904	Montana	0.908
Alaska	0.940	Nebraska	0.949
Arizona	0.920	Nevada	0.932
Arkansas	0.891	New Hampshire	0.901
California	0.951	New Jersey	0.924
Colorado	0.918	New Mexico	0.937
Connecticut	0.950	New York	0.932
DC	0.994	North Carolina	0.890
Florida	0.922	North Dakota	0.857
Georgia	0.907	Ohio	0.900
Hawaii	0.912	Oklahoma	0.879
Idaho	0.920	Oregon	0.968
Illinois	0.901	Pennsylvania	0.968
Indiana	0.884	Rhode Island	0.915
Iowa	0.897	South Carolina	0.926
Kansas	0.918	South Dakota	0.892
Kentucky	0.858	Tennessee	0.916
Louisiana	0.839	Texas	0.918
Maine	0.950	Utah	0.887
Maryland	0.970	Vermont	0.984
Massachusetts	0.910	Virginia	0.904
Michigan	0.888	Washington	0.984
Minnesota	0.929	West Virginia	0.921
Mississippi	0.864	Wisconsin	0.903
Missouri	0.914	Wyoming	0.872

Adjusted State Gender Wage Gaps Relative to US Average
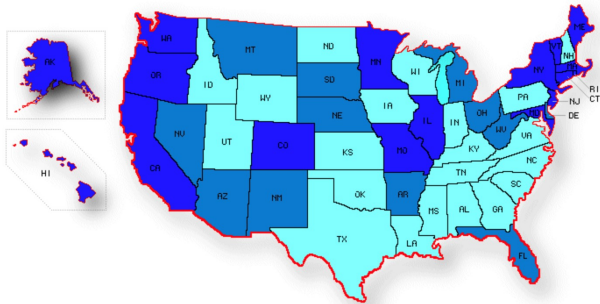
State Minimum Wages

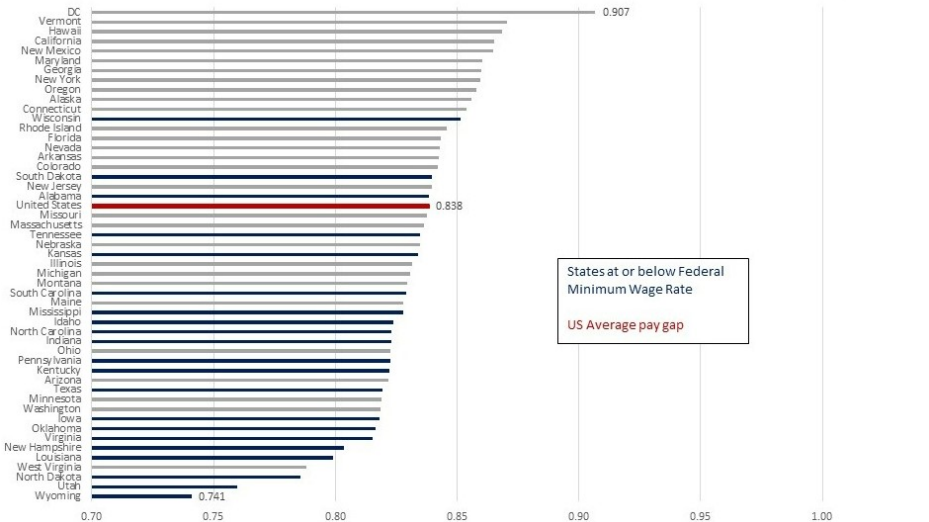# Baseline State-level Gender Wage Gaps Relative to U.S. Average
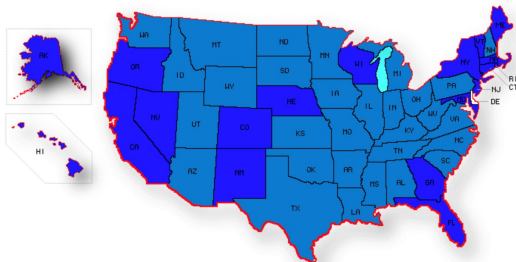
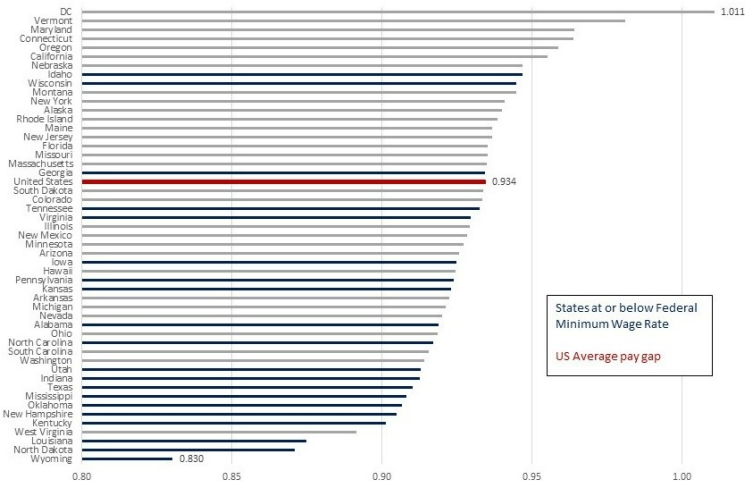# Gender Wage Gap and Minimum Wage Model 1: Baseline

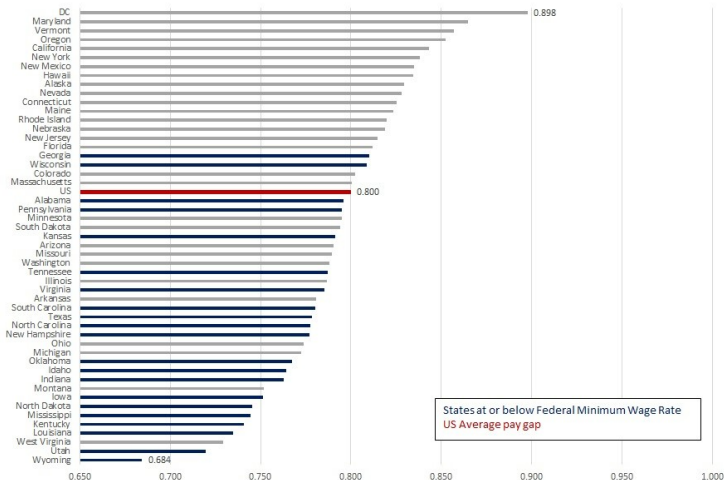# Gender Wage Gap and Minimum Wage Model 2: Adjusted
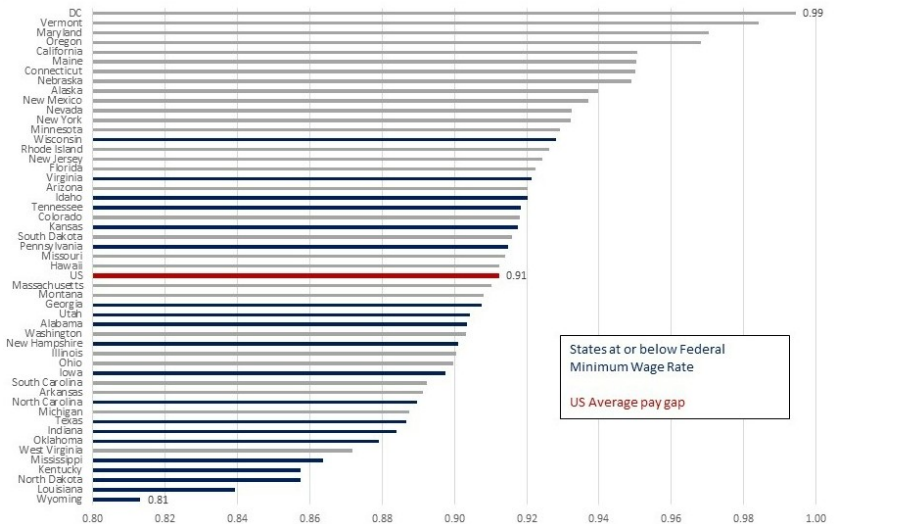
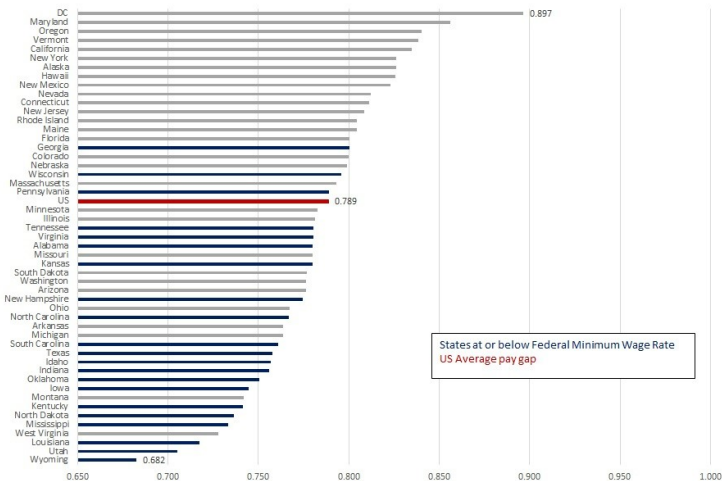# Gender Earnings Ratio $25,000+ Model 1: Baseline

Gender Earnings Ratio for Income $25,000+ Model 2: Adjusted

Minimum Wage and the Gender Wage Gap for Ages 25+ Model 1: Baseline

Minimum Wage and the Gender Wage Gap for Ages 25+ Model 2: Adjusted

Earnings Differentials

	(1) Women	(2) Men
Asian	-0.111	-0.197
Black	0.020	-0.098
Hispanic	0.111	-0.149
Married Spouse Present	0.074	0.174
One Child	-0.015	0.027
Two Children	-0.004	0.070
Three or More Children	-0.040	0.060
Rural Area	-0.164	0.113
Less Than High School	-0.204	-0.208
Some College or Associate's	0.168	0.128
Bachelor's Degree	0.494	0.432
Advanced Degree	0.716	0.625

Note: All variables are statistically significant at the 99% confidence level.
* age, age^2, other race, metro status and years were used as control variables but not reported

Findings

- Wyoming has the largest gender pay gap in both baseline and adjusted models.
- D.C. is both a high earning state for men and women as well as smaller differential between men's and women's earnings.
- Largest GWG in the Southern States and smallest in the West.
- State that have minimum wage rates at or below the Federal Minimum Wage Rate tend to have GWG's that are larger than the national average.

Going Forward

- Industry Effects
- American Community Survey (ACS)
- State GWG by race and educational attainment

Thank You

Contact

- Christine.Storrie@oneonta.edu
- Kpoti.Kitissou@onoenta.edu