

The Effects of Sexism on American Women:  
The Role of Norms vs. Discrimination

Online Appendix

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September 25, 2022

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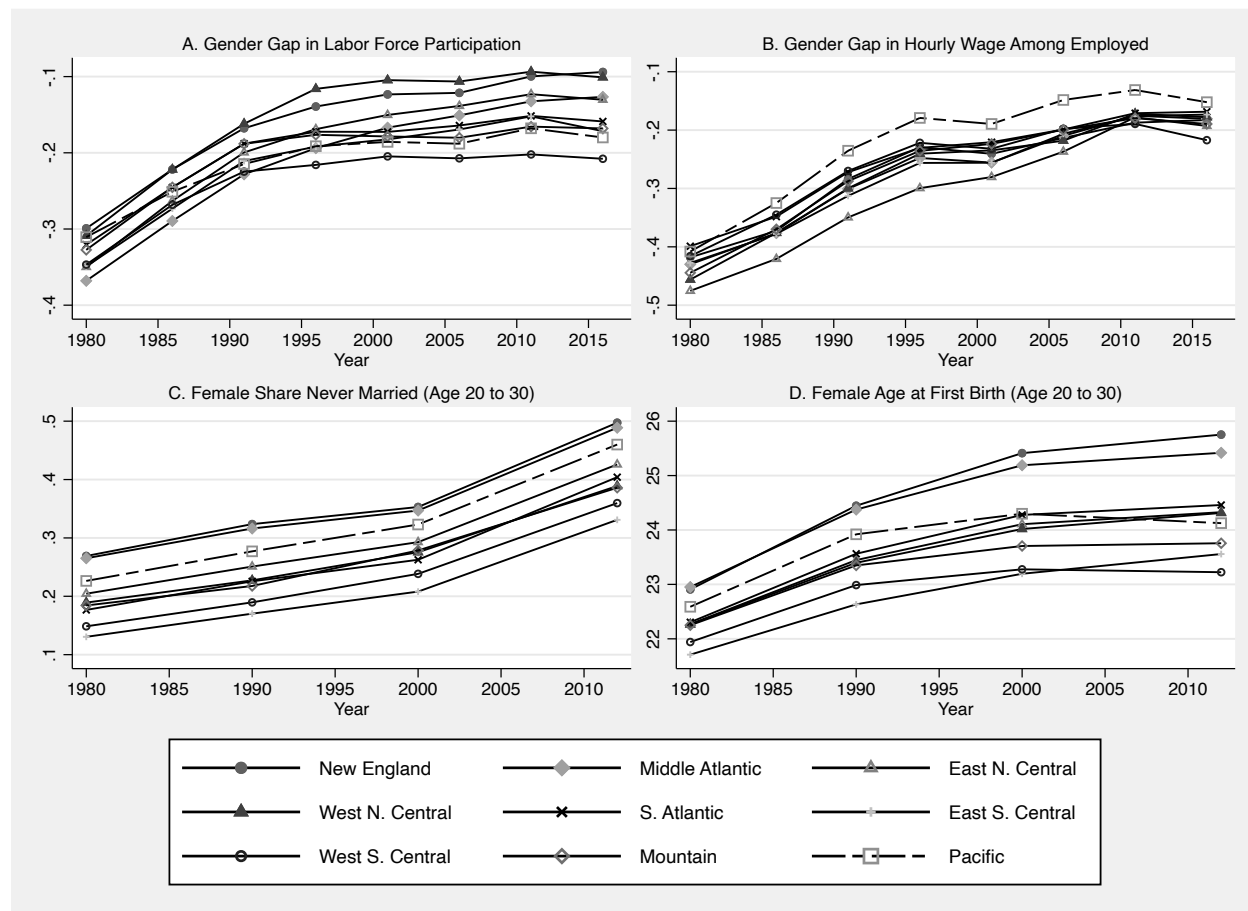
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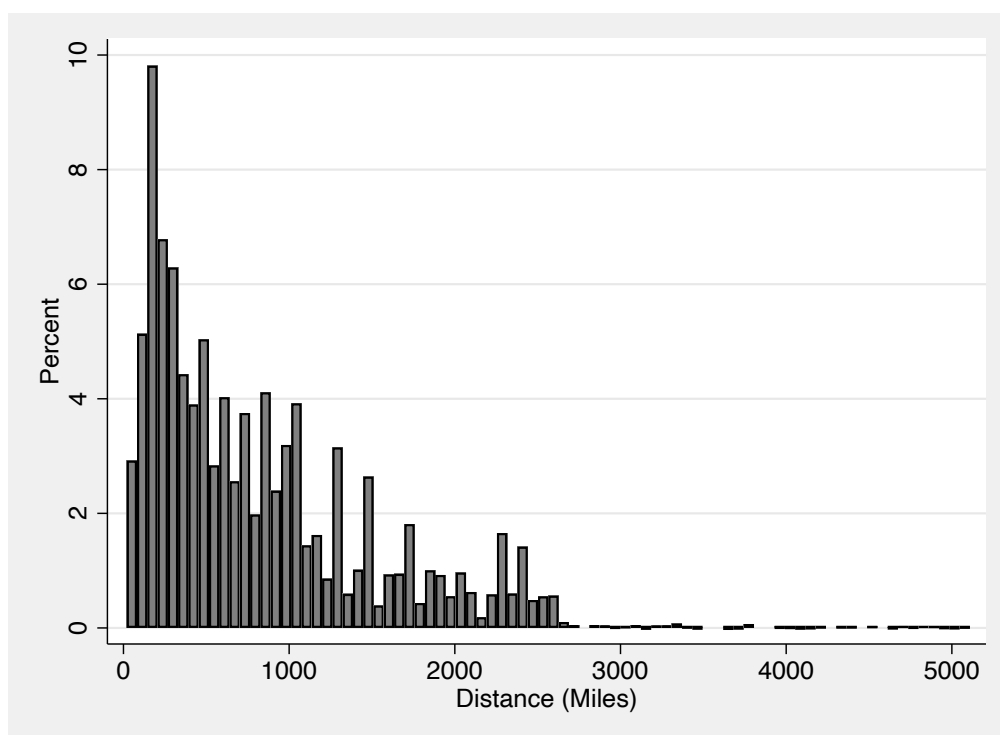
# Appendix Tables and Figures

Figure A1: Unconditional Labor Market and Non-Labor Market Outcomes by Census Divisions



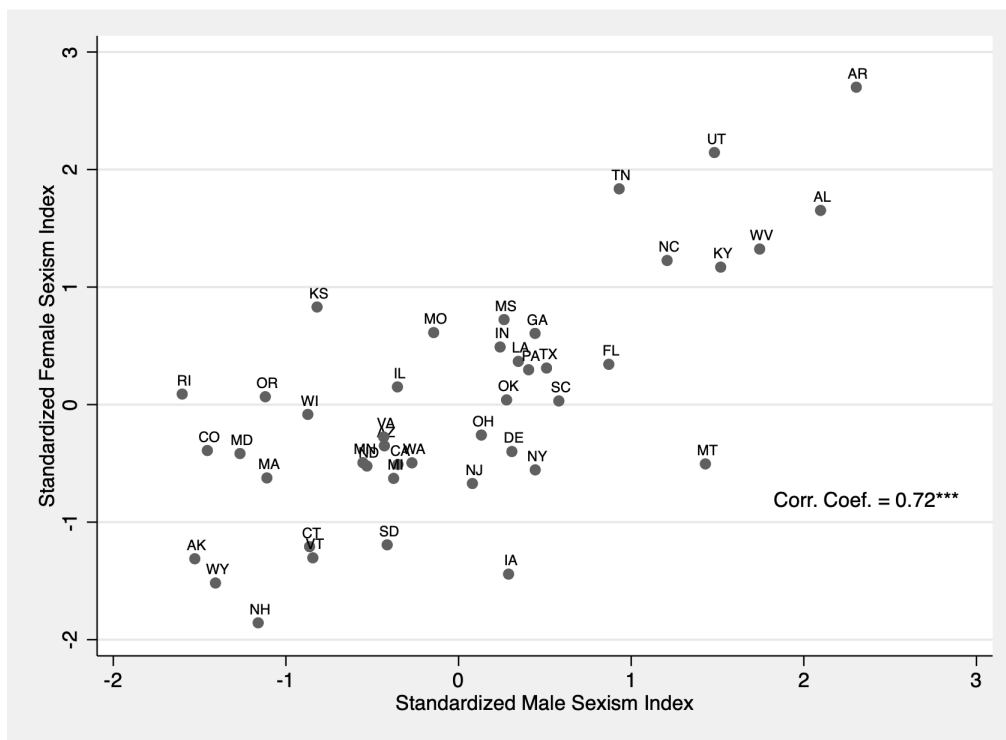
Note: LFP and wage gaps are estimated using MORG/ORG CPS data for sample of whites aged 25 to 64. The non-labor market outcomes are estimated using Census/ACS data for women between 20 and 40. Labor market outcomes are residualized of gender-specific year effects and state fixed effects. Non-labor market outcomes are residualized of year effects. Means are for the nine Census Divisions over time.

Figure A2: Distance of States of Residence from States of Birth Among U.S. Migrants



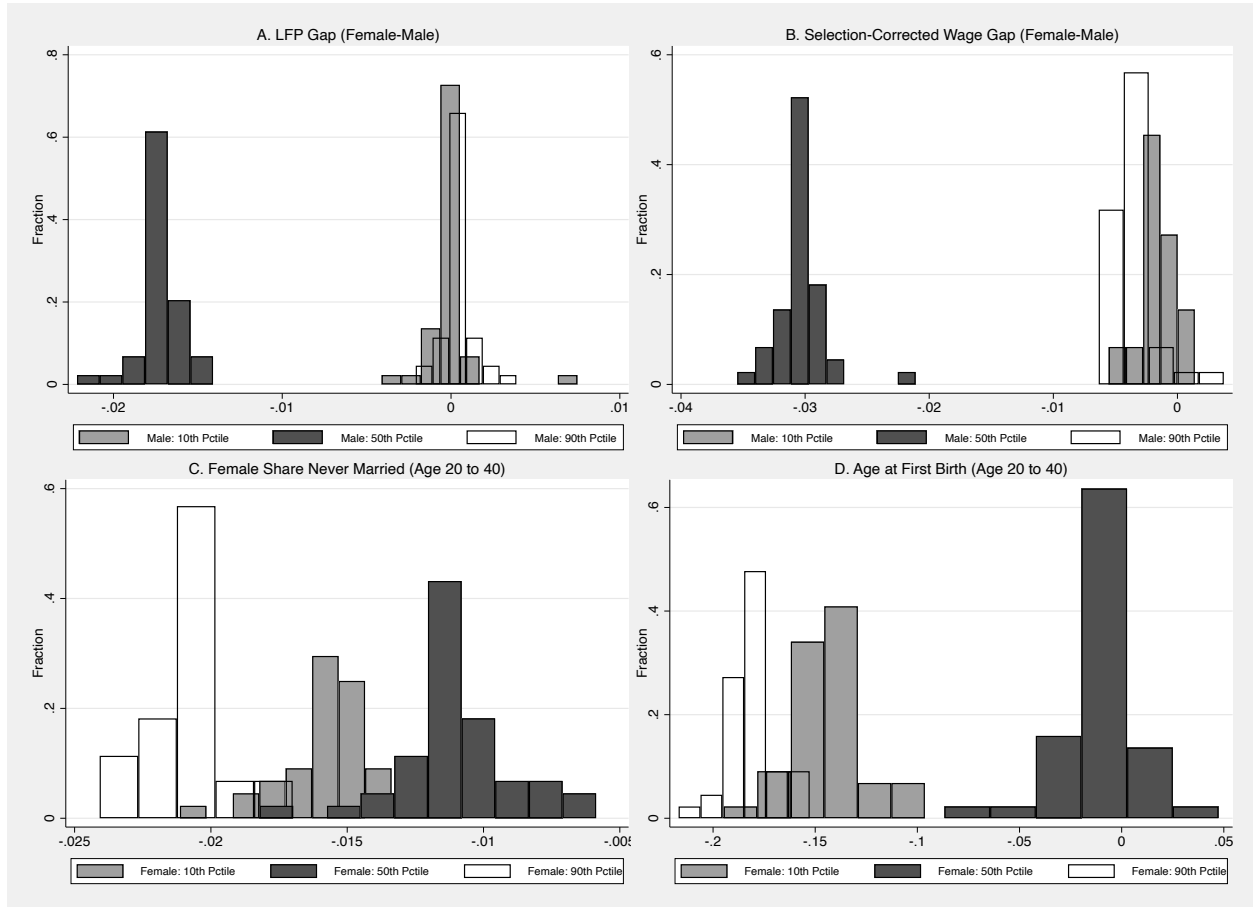
Note: Data are from the 1980 to 2000 Census and 2010-2012 ACS. The sample is restricted to internal migrants between the ages of 20 and 64. See text for details.

Figure A3: Sexism Among Men and Among Women in Each State



Note: Data are from the General Social Survey. The standardized female and male sexism indices have mean 0 and standard deviation 1 in the cross-state sample (44 states).

Figure A4: Sensitivity of Regression Estimates to Omitting Observations from Different Individual States: Coefficient on Male and Female Sexism from 43 Regressions



Note: The residual female-male employment and wage gaps are estimated using the sample of whites age 25 to 64 from the 1977-2017 May/ORG CPS data and control for the number of years of schooling, age dummies, gender-specific year effects and state fixed effects. The non-labor market outcomes are estimated using the sample of white females age 20 to 40 from the 1980 to 2000 Census and 2010-2012 ACS (3-year aggregate) and control for the number of years of schooling, age dummies and year fixed effects. Data on sexism are from the General Social Survey. The standardized female and male sexism indices have mean 0 and standard deviation 1 in the cross-state sample (44 states). The histograms show the distribution of coefficient estimates from 43 separate (leave one state out) regressions of Columns (1) and (4) from Table ?? and Columns (2) and (5) from Table ?? for the labor market and non-labor market outcomes, respectively.

Table A1: GSS Questions Used to to Construct Sexism Index

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<b>FEWORK</b>	Do you approve or disapprove of a married woman earning money in business or industry if she has a husband capable of supporting her?
<b>FEHOME</b>	Do you agree or disagree with this statement? Women should take care of running their home and leave running the country up to men.
<b>FEPRES</b>	If your party nominated a woman for president, would you vote for her if she were qualified for the job?
<b>FEPOL</b>	Tell me if you agree or disagree with this statement: Most men are better suited emotionally for politics than are most women.
<b>FECHILD</b>	A working mother can establish just as warm and secure a relationship with her children as a mother who does not work.
<b>FEPRESCH</b>	A preschool child is likely to suffer if his or her mother works.
<b>FEHELP</b>	It is more important for a wife to help her husband's career than to have one herself.
<b>FEFAM</b>	It is much better for everyone involved if the man is the achiever outside the home and the women takes care of the home and family.
	Years where all questions overlap: (1977, 1985, 1986, 1988, 1989, 1990, 1991, 1993, 1994, 1996, 1998)

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Table A2: Sexism Measures, by State

State	All		Men		Women	
	N	Index	N	Index	N	Index
Alabama	331	1.97	131	2.10	200	1.65
Alaska	44	-1.50	22	-1.53	22	-1.31
Arizona	264	-0.41	121	-0.43	143	-0.35
Arkansas	110	2.78	51	2.30	59	2.70
California	1569	-0.46	719	-0.35	850	-0.51
Colorado	484	-0.95	199	-1.46	285	-0.39
Connecticut	228	-1.13	105	-0.86	123	-1.21
Delaware	53	-0.30	18	0.31	35	-0.40
Florida	703	0.61	304	0.87	399	0.34
Georgia	352	0.62	162	0.44	190	0.61
Illinois	615	-0.06	286	-0.35	329	0.15
Indiana	421	0.41	177	0.24	244	0.49
Iowa	79	-0.69	37	0.29	42	-1.44
Kansas	222	0.18	84	-0.82	138	0.83
Kentucky	156	1.41	63	1.52	93	1.17
Louisiana	206	0.42	94	0.35	112	0.37
Maryland	249	-0.85	109	-1.27	140	-0.42
Massachusetts	350	-0.92	140	-1.11	210	-0.62
Michigan	759	-0.56	332	-0.38	427	-0.63
Minnesota	318	-0.57	144	-0.55	174	-0.49
Mississippi	147	0.55	57	0.26	90	0.72
Missouri	424	0.31	179	-0.14	245	0.61
Montana	60	0.12	21	1.43	39	-0.50
New Hampshire	85	-1.66	39	-1.16	46	-1.86
New Jersey	433	-0.39	192	0.08	241	-0.67
New York	1103	-0.21	450	0.44	653	-0.56
North Carolina	574	1.34	258	1.21	316	1.23
North Dakota	166	-0.54	70	-0.53	96	-0.52
Ohio	668	-0.11	295	0.13	373	-0.26
Oklahoma	210	0.13	91	0.28	119	0.04
Oregon	215	-0.49	92	-1.12	123	0.07
Pennsylvania	753	0.37	323	0.41	430	0.30
Rhode Island	82	-0.61	30	-1.60	52	0.09
South Carolina	224	0.33	98	0.58	126	0.03
South Dakota	52	-0.86	25	-0.41	27	-1.19
Tennessee	485	1.60	195	0.93	290	1.84
Texas	941	0.42	411	0.51	530	0.31
Utah	104	2.03	49	1.48	55	2.14
Vermont	80	-1.20	33	-0.84	47	-1.30
Virginia	603	-0.42	248	-0.43	355	-0.28
Washington	288	-0.39	139	-0.27	149	-0.50
West Virginia	138	1.61	62	1.74	76	1.32
Wisconsin	365	-0.47	164	-0.87	201	-0.08
Wyoming	70	-1.47	43	-1.41	27	-1.52

Note: The sexism measure for each sample (e.g. all, men, women) are standardized to have a mean of 0 and standard deviation of 1 in the sample of 44 states. Larger values indicate higher measured sexism. See text for details on the construction of the sexism indices.

Table A3: Convergence Over Time in Average State-Level Sexism

	State FE only (1)	State FE and Year FE (2)
	<i>Overall Sexism</i>	
R-squared	0.498	0.869
	<i>Average Male Sexism</i>	
R-squared	0.535	0.794
	<i>Average Female Sexism</i>	
R-squared	0.473	0.870
No. of Obs (44 states by 3 time periods)	107	107
Includes:		
State Fixed Effects	yes	yes
Year Fixed Effects	no	yes

Note: The sexism data is from the 1977 to 1998 waves of the GSS. The table reports R-squared values from separate regressions of average state-level sexism on state fixed effects and year fixed effects. The three time periods are (1) 1977 to 1988 (2) 1989 to 1993 (3) 1994 to 1998. The number of observations do not add up to  $44 \times 3 = 132$  due to missing observations in some states in some time periods. We restrict the analysis to state\*time period cells with at least 15 male and female respondents.



Table A4: Convergence in Mean State Level Labor and Non-Labor Market Outcomes Over Time

	<i>Unconditional</i>		<i>Residualized</i>	
	State FE only	State FE and Year FE	State FE only	State FE and Year FE
	(1)	(2)	(3)	(4)
	<b>Female-Male LFP Gap</b>			
R-squared	0.185	0.952	0.194	0.944
	<b>Female-Male Wage Gap, Conditional on Working</b>			
R-squared	0.129	0.949	0.166	0.929
No. of Obs (44 states by 8 time periods)	352	352	352	352
	<b>Female Share Never Married (Age 20 to 40)</b>			
R-squared	0.287	0.985	0.067	0.997
	<b>Female Age at First Birth (Age 20 to 40)</b>			
R-squared	0.410	0.959	0.248	0.976
No. of Obs (44 states by 4 time periods)	176	176	176	176

Note: Regressions use data from the 1977-2017 May/ORG Current Population Surveys (CPS) for labor market outcomes and from the 1980 to 2012 Census/ACS for non-labor market outcomes. The table reports the R-squared values from separate regressions of state-level labor market and non-labor market outcomes on state fixed effects and year fixed effects. For the labor market outcomes, we group the CPS years into 8 time periods; for the non-labor market outcomes, the Census/ACS years are grouped into 4 time periods.

Table A5: First Stage: Effect of Relative Distance and Enclave Instruments on Residential Sexism

	LFP sample		
	Outcome: Overall Sexism in the State of Residence		
	(1)	(2)	(3)
Distance IV	0.258*** [0.067]		0.085 [0.066]
Enclave IV		0.262*** [0.050]	0.218*** [0.048]
F-stat of excluded instruments	14.6	27.0	13.9
Controls:			
Overall Sexism in State of Birth*Female	X	X	X
Overall Sexism in State of Birth	X	X	X
Region of Birth FE*Female	X	X	X
Female*Year FE	X	X	X
Observations	15,103	15,103	15,103
R-squared	0.074	0.080	0.081

Note: The data are from the 1980, 1990, 2000 US Census and 2010-2012 ACS (3-year aggregate). The sample is restricted to whites age 25 to 64 for the labor market outcomes and age 20 to 40 for the non-labor market outcomes (females only) who are not currently living in their state of birth. The unit of observation is at the state of birth\*state of residence\*gender\*year level for the labor market outcomes and at the state of birth\*state of residence\*year level for the non-labor market outcomes. Sexist beliefs are normalized to have a mean of 0 and standard deviation 1 across the 44 states with available information to construct the index of sexist beliefs in the GSS (excluding DC). The Distance and Enclave IV are standardized to have mean 0 and standard deviation 1 in the sample of states. Regressions are weighted by the number of observations in each cell for each outcome. Standard errors clustered at the state of residence level are in brackets. \*\*\*significant at 1%, \*\*at 5%, \*at 10%.

Table A6: Does Residential and Background Sexism Predict the Likelihood of Migration?

(a) Using Actual Sexism in State of Residence

	Outcome: Internal Migrant								
	All			Women			Men		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Sexism in State of Residence	0.002		0.002	0.002		0.002	0.001		0.001
	[0.049]		[0.067]	[0.049]		[0.067]	[0.049]		[0.067]
Sexism in State of Birth		-0.005	-0.004		-0.005	-0.005		-0.004	-0.003
		[0.022]	[0.087]		[0.023]	[0.088]		[0.022]	[0.087]
Controls:									
Age FE, Years of Education	X	X	X	X	X	X	X	X	X
Region of Birth									
FE*Female	X	X	X	X	X	X	X	X	X
Female*Year FE	X	X	X	X	X	X	X	X	X
Observations	16,981,963	17,011,554	16,726,281	8,679,041	8,690,204	8,546,102	8,302,922	8,321,350	8,180,179
R-squared	0.035	0.030	0.030	0.029	0.024	0.024	0.041	0.036	0.036

(b) Using Predicted Residential Sexism Based on the Instruments

	Outcome: Internal Migrant					
	All		Women		Men	
	(1)	(2)	(3)	(4)	(5)	(6)
<i>Predicted Sexism in State of Residence:</i>						
Distance IV	-0.027		-0.027		-0.026	
	[0.145]		[0.146]		[0.144]	
Enclave IV		-0.022		-0.023		-0.021
		[0.105]		[0.106]		[0.105]
Sexism in State of Birth	-0.001	-0.002	-0.001	-0.005	-0.005	-0.004
	[0.063]	[0.064]	[0.063]	[0.066]	[0.067]	[0.066]
Controls:						
Age FE, Years of Education	X	X	X	X	X	X
Region of Birth						
FE*Female	X	X	X	X	X	X
Female*Year FE	X	X	X	X	X	X
Observations	17,011,554	17,011,554	8,690,204	8,690,204	8,321,350	8,321,350
R-squared	0.030	0.030	0.024	0.024	0.036	0.036

Note: The data are from the 1980, 1990, 2000 US Census and 2010-2012 ACS (3-year aggregate). The sample is restricted to whites between the ages of 25 to 64 and include all individuals who were born in the U.S. The outcome is an indicator variable that takes on the value of 1 if the individual is not currently residing in their state of birth (i.e. is an internal migrant). Sexist beliefs are normalized to have a mean of 0 and standard deviation 1 across the 44 states with available information to construct the index of sexist beliefs in the GSS. See text for details on the construction of the sexism indices and instruments (i.e. predicted sexism in the state of residence). All the regressions control for age fixed effects, years of education, and gender-specific region of birth and year fixed effects. Regressions are weighted by the appropriate person-level weights available from the Census. Standard errors clustered at the state of residence level are reported in brackets. \*\*\*significant at 1%, \*\*at 5%, \*at 10%.

Table A7: Robustness to Controls for State-Level Differences in School Quality

	Labor Force Participation Gap (Female - Male)			Selection-Corrected Wage Gaps (Female-Male)		
	(1)	(2)	(3)	(4)	(5)	(6)
	<i>Male Sexist Beliefs in State of Residence:</i>					
10th Percentile	0.000 [0.008]	0.002 [0.007]	0.013* [0.006]	-0.001 [0.009]	-0.000 [0.011]	0.017 [0.012]
Median	-0.020*** [0.007]	-0.017** [0.007]	-0.018*** [0.006]	-0.034** [0.013]	-0.034** [0.013]	-0.034** [0.013]
90th Percentile	0.004 [0.006]	0.004 [0.006]	0.005 [0.005]	0.002 [0.013]	0.001 [0.014]	0.003 [0.011]
Observations	41	41	41	41	41	41
R-squared	0.282	0.297	0.473	0.255	0.256	0.363
Controls:						
Education Quality (NAEP test scores for boys)			X			X
Overall Average Female Sexism		X	X		X	X

Note: The residual female-male employment and selection-corrected wage gaps are estimated using the sample of whites age 25 to 64 from the 1977-2017 May/ORG CPS data and control for the number of years of schooling, age dummies, gender-specific year effects, and state fixed effects. Sexist beliefs are normalized to have a mean of 0 and standard deviation 1 across the 44 states with available information to construct the index of sexist beliefs in the GSS (excluding DC). Regressions are weighted by the inverse of the variance of the outcome variable. The sample is restricted to states with non-missing information on NAEP test scores. Columns (2) and (5) include controls for overall average female sexism. Columns (3) and (6) include additional controls for the mean NAEP-LTT reading and math scores of boys as proxies for educational quality. Robust standard errors are reported in brackets. \*\*\*significant at 1%, \*\*5%, \*10%.

Table A8: Sexism and Women's Outcomes, Controlling for Religiosity

	LFP Gap (Female - Male)	Selection- Corrected Log Wage Gaps (Female-Male)	Share of Females Never Married	Average Female Age at First Child
	(1)	(2)	(3)	(4)
<i>Panel A. Male vs. Female Sexism</i>				
<i>Sexist Beliefs in State of Residence:</i>				
Male average	-0.012* [0.006]	-0.031*** [0.011]	-0.006 [0.011]	-0.081 [0.092]
Female average	-0.008 [0.007]	-0.005 [0.010]	-0.020* [0.012]	-0.168 [0.115]
Religiosity	0.000 [0.006]	0.003 [0.013]	-0.021*** [0.007]	-0.064 [0.061]
Observations	44	44	44	44
R-squared	0.298	0.255	0.528	0.356
<i>Panel B. Percentiles of Sexism</i>				
<i>Male Sexist Beliefs in State of Residence:</i>				
10th Percentile	0.001 [0.007]	0.000 [0.011]	0.001 [0.011]	0.035 [0.085]
Median	-0.014* [0.008]	-0.028** [0.013]	0.003 [0.014]	-0.023 [0.113]
90th Percentile	0.001 [0.008]	-0.005 [0.013]	-0.014 [0.017]	-0.106 [0.127]
<i>Female Sexist Beliefs in State of Residence:</i>				
10th Percentile	-0.003 [0.011]	-0.007 [0.014]	-0.019 [0.014]	-0.180 [0.127]
Median	-0.007 [0.013]	0.005 [0.017]	0.012 [0.013]	0.103 [0.119]
90th Percentile	0.004 [0.006]	-0.002 [0.011]	-0.020** [0.009]	-0.177** [0.082]
Religiosity	-0.000 [0.007]	0.000 [0.015]	-0.020** [0.009]	-0.053 [0.077]
Observations	44	44	44	44
R-squared	0.330	0.270	0.567	0.412

Note: See notes to Tables, 6, 8, and 9. The specifications are similar to those reported in Tables 6, 8, and 9, but include an additional control for religiosity at the state-level as measured in the GSS ("how often do you attend religious services," 0 (never) to 8 (more than once a week)).

Table A9: Sexism and Women’s Outcomes, Controlling for Racial Attitudes (Among Whites)

	LFP Gap (Female - Male)	Selection- Corrected Log Wage Gaps (Female-Male)	Share of Females Never Married	Average Female Age at First Child
	(1)	(2)	(3)	(4)
<i>Panel A. Male vs. Female Sexism</i>				
<i>Sexist Beliefs in State of Residence:</i>				
Male average	-0.015*	-0.017	-0.003	-0.073
	[0.008]	[0.012]	[0.014]	[0.111]
Female average	-0.009	0.003	-0.027**	-0.191*
	[0.006]	[0.009]	[0.013]	[0.102]
Racial attitudes	0.007	-0.024**	-0.013	-0.036
	[0.006]	[0.011]	[0.010]	[0.064]
Observations	44	44	44	44
R-squared	0.315	0.309	0.474	0.348
<i>Panel B. Percentiles of Sexism</i>				
<i>Male Sexist Beliefs in State of Residence:</i>				
10th Percentile	-0.001	0.011	0.007	0.050
	[0.008]	[0.009]	[0.014]	[0.104]
Median	-0.015*	-0.022	0.010	-0.003
	[0.008]	[0.014]	[0.012]	[0.102]
90th Percentile	0.000	-0.002	-0.021	-0.128
	[0.007]	[0.011]	[0.016]	[0.112]
<i>Female Sexist Beliefs in State of Residence:</i>				
10th Percentile	-0.005	0.002	-0.023	-0.190
	[0.011]	[0.014]	[0.014]	[0.121]
Median	-0.007	0.001	0.003	0.081
	[0.013]	[0.016]	[0.017]	[0.130]
90th Percentile	0.003	0.000	-0.020**	-0.179**
	[0.006]	[0.011]	[0.010]	[0.083]
Racial attitudes	0.005	-0.028***	-0.013	-0.030
	[0.006]	[0.010]	[0.011]	[0.077]
Observations	44	44	44	44
R-squared	0.338	0.342	0.532	0.408

Note: See notes to Tables 6, 8, and 9. The specifications are similar to those reported in Tables 6, 8, and 9, but include an additional control for racial attitudes (among whites) at the state-level as measured in the GSS using four questions on racial sentiments (RACPEERS, RACPRES, RACSEG, RACMAR).

Table A10: Placebo Test using Religiosity (Percentile Tests)

	LFP Gap (Female - Male)	Selection- Corrected Log Wage Gaps (Female-Male)	LFP Gap (Female - Male)	Selection- Corrected Log Wage Gaps (Female-Male)
	(1)	(2)	(3)	(4)
<i>Male Sexist Beliefs in State of Residence:</i>				
10th Percentile	0.001 [0.006]	0.004 [0.010]	-0.001 [0.008]	0.003 [0.011]
Median	-0.012* [0.007]	-0.024* [0.014]	-0.013 [0.009]	-0.028* [0.016]
90th Percentile	0.001 [0.006]	-0.007 [0.011]	-0.000 [0.007]	-0.013 [0.013]
<i>Religiosity in State of Residence:</i>				
		Overall		Male
10th Percentile	0.005 [0.004]	0.000 [0.008]	0.006 [0.005]	0.000 [0.008]
Median	-0.004 [0.008]	0.009 [0.014]	-0.006 [0.008]	0.012 [0.011]
90th Percentile	-0.009 [0.006]	-0.023** [0.010]	-0.001 [0.005]	-0.010 [0.009]
Observations	44	44	44	44
R-squared	0.367	0.332	0.301	0.299

Note: See notes to Table 8 for details on the sample and how the outcomes are constructed. The specifications are similar to those reported in Columns (3) and (6) of Table 8, except that the percentiles of male and female sexism are replaced with percentiles of overall and male religiosity at the state-level. Standard errors clustered at the state of birth are reported in brackets. \*\*\*significant at 1%, \*\*at 5%, \*at 10%.

Table A11: Placebo Test using Racial Attitudes (Percentile Tests)

	LFP Gap (Female - Male)	Selection- Corrected Log Wage Gaps (Female-Male)	LFP Gap (Female - Male)	Selection- Corrected Log Wage Gaps (Female-Male)
	(1)	(2)	(3)	(4)
<i>Male Sexist Beliefs in State of Residence:</i>				
10th Percentile	0.001 [0.010]	0.009 [0.010]	-0.001 [0.009]	-0.002 [0.011]
Median	-0.019** [0.009]	-0.024* [0.014]	-0.022** [0.008]	-0.021 [0.016]
90th Percentile	0.000 [0.006]	0.001 [0.012]	0.003 [0.007]	0.003 [0.014]
<i>Racial Attitudes in State of Residence:</i>				
		Overall		Male
10th Percentile	-0.003 [0.008]	0.002 [0.012]	-0.004 [0.008]	0.011 [0.013]
Median	0.009 [0.014]	-0.004 [0.022]	0.014 [0.010]	-0.004 [0.014]
90th Percentile	-0.006 [0.011]	-0.025 [0.018]	-0.005 [0.007]	-0.022 [0.014]
Observations	44	44	44	44
R-squared	0.287	0.350	0.323	0.336

Note: See notes to Table 8 for details on the sample and how the outcomes are constructed. The specifications are similar to those reported in Columns (3) and (6) of Table 8, except that the percentiles of male and female sexism are replaced with percentiles of overall and male racial prejudice at the state-level. Standard errors clustered at the state of birth are reported in brackets. \*\*\*significant at 1%, \*\*at 5%, \*at 10%.



## Data Appendix

### A. Construction of Hourly Wages using the CPS Data

We use data from the May CPS for 1977 to 1978 and the CPS Merged Outgoing Rotation Groups (MORG) for 1979 to 2017. The main analysis sample includes whites between the ages of 25 to 64. Following the procedure used by Autor et al. (2008), hourly wages are defined as the log of reported hourly earnings for those paid by the hour and the log of usual weekly earnings divided by hours worked last week for non-hourly workers. The wage sample excludes those who are self-employed. Top-coded earnings are multiplied by 1.5. Hourly earnings that fall below \$1.675/hour in 1982 dollars are dropped, as are hourly wages exceeding 1/35th the top-coded value of weekly earnings. All the earnings measures are deflated to 2009\$ using the price deflator for personal consumption expenditures (PCE) from the BEA. We exclude allocated earnings observation in all years, except where allocation flags are not available (Jan 1994 to Aug 1995). Between 1989 and 1993, non-flagged allocated observations are identified and dropped by using the unedited earnings values provided in the source data.

### B. Construction of Hourly Wages using the Census/ACS

We use the Census IPUMS 5% data for the 1980, 1990, and 2000 Census and the 2012 (2010-2012) three-year aggregate data from the ACS. The sample includes whites between the ages of 25 to 64 who are not living in group quarters (i.e. non-military and non-institutionalized). Hourly wages are calculated as total annual wage and salary income divided by the product of weeks worked and usual hours worked in the previous year. The wage sample excludes the self-employed. Following Autor et al. (2008), we drop the bottom 1% of hourly earners and multiply hourly wages of top-coded earners by 1.5. The maximum hourly wage is limited to 1.5 times the maximum annual income amount divided by 1,750 (35 hours per week for 50 hours per year). The earnings measures are deflated to 2000\$ using the price deflator for personal consumption expenditures (PCE) from the BEA.

### C. Coding of Education in the CPS and Census/ACS Samples

We follow steps outlined in Autor et al. (2008) to create a comparable measure of the number of years of schooling across years in the CPS. In 1992, the CPS changed the education question. Figures from Park (1994) are used to assign years of completed education to each worked based on gender, race, and highest degree held. For the Census and ACS samples, we impute the number of years of education based on the variable indicating the individual's highest year of school or degree completed (*educd*).

## References

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