

On-Line Appendix to “The Relationship Between
Prejudice and Wage Penalties for Gay Men in the
United States“

June 18, 2019

A Appendix Tables and Figures

Table A1: List of Variables

Variable Definition

Dependent Variable:
 Annual earnings
 Natural logarithm of hourly earnings (= total annual salary earnings divided by total number of hours worked per year) in previous year, in constant 1999 USD

Control Variables:
 Sexual Orientation (=1 if Homosexual, =0 if Heterosexual)
 Experience (Potential, =Age - Schooling - 5)
 Experience Squared
 Black (=1 if True, =0 if False)
 Other Race (=1 if True, =0 if False)
 Years of Schooling
 State
 Year

O*NET Occupation Characteristics
 Customer and personal service: "Knowledge of principles and processes for providing customer and personal services. This includes customer needs assessment, meeting quality standards for services, and evaluation of customer satisfaction." (scale)
 Work With Work Group or Team: "How important is it to work with others in a group or team in this job?" (scale)

Gay Rights Movement Variables
 Employment Non-Discrimination Act Protections for Homosexuals in State (=1 if True, =0 if False)
 Legal Recognition of Same-Sex Marriages in State (=1 if True, =0 if False)

Note: Sources of all variables are the 2008 through 2014 American Community Survey 1-Year Sample, the 1990 to 2012 General Social Surveys, National Center for O*Net Development (2015), and Sears et al. (2009).

Table A2: Demographics of GSS Respondents: 1990 to 2014

White	78%
Black	14%
Other	8%
Years of Schooling	13.33
High School Diploma	52%
Bachelor's Degree	17%
Graduate Degree	9%
Age	45.57
Male	44%
Female	56%
New England	5%
Middle Atlantic	14%
E. N. Central	17%
W. N. Central	7%
South Atlantic	20%
E. S. Central	7%
W. S. Central	10%
Mountain	7%
Pacific	14%
Obs	34,706

Note: Data on GSS respondents come from the pooled General Social Survey, 1990 to 2014.

Table A3: Demographics in Census Data by Sexual Orientation

	Gay		Heterosexual	
	Mean	SD	Mean	SD
Log hourly wages	2.81	0.77	2.88	0.73
Age	41.01	10.67	43.72	10.80
Years of schooling	15.43	2.98	14.64	3.09
HS dropout	0.07	0.25	0.11	0.31
HS graduate	0.38	0.49	0.40	0.49
Bachelor's degree	0.27	0.44	0.20	0.40
Graduate degree	0.18	0.39	0.13	0.34
Number of children	0.18	0.64	1.29	1.21
White	0.84	0.36	0.85	0.36
African-American	0.06	0.24	0.06	0.24
Native American	0.01	0.08	0.01	0.08
Asian	0.03	0.18	0.04	0.20
Other	0.06	0.23	0.04	0.20
New England	0.05	0.22	0.05	0.21
Mid Atlantic	0.14	0.35	0.14	0.35
E N Central	0.13	0.33	0.17	0.38
W N Central	0.04	0.20	0.07	0.25
South Atlantic	0.22	0.41	0.19	0.39
E S Central	0.04	0.20	0.06	0.24
W S Central	0.09	0.29	0.11	0.32
Mountain	0.07	0.25	0.07	0.25
Pacific	0.22	0.42	0.15	0.35
Observations	54,675		6,214,584	

Note: Data come from the 1990 Decennial Census 5% PUMS, the 2000 Decennial Census 5% PUMS, and the 2008 through 2014 American Community Surveys.

Table A4: Testing the Predictions with Only Gay Men

	(1)	(2)	(3)	(4)	(5)
Median Prejudice	-0.207*	-0.083	-0.206*	-0.232**	-0.124
	(0.104)	(0.106)	(0.106)	(0.103)	(0.110)
Share Prejudiced	-0.536	-0.426	-0.545	-0.560	-0.422
	(0.432)	(0.383)	(0.429)	(0.424)	(0.374)
Share Gay	2.315*	1.711	2.246*	2.531**	1.921*
	(1.182)	(1.039)	(1.190)	(1.185)	(1.111)
adj. R^2	0.24	0.21	0.26	0.22	0.22
States	48	48	48	48	48
Obs	54,667	51,513	28,612	27,358	27,358
Age 25-65		X		X	X
ACS only			X	X	X
PC weight					X

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Note: The dependent variable is log hourly wages in constant 1999 dollars. The sample has been restricted to only include gay men in the labor force. Data on wages come from the 1990 Decennial Census 5% PUMS, the 2000 Decennial Census 5% PUMS, and the 2008 through 2014 American Community Surveys. Data on prejudice come from the 1990 through 2014 waves of the GSS. Data on the size of the gay population by state comes from Gates and Newton (2013). Controls for potential experience, race, and schooling are included. Standard errors are clustered at the state level and are reported in parentheses. Three states have been dropped from the sample because they have too few respondents in the General Social Survey.

Table A5: Gay Rights Laws

State	ENDA	Same-Sex Marriage
California	1992	
Colorado	2007	
Connecticut	1991	2008
Delaware	2009	2013
District of Columbia	1977	2010
Hawaii	1991	
Illinois	2006	
Iowa	2007	
Maine	2005	
Maryland	2001	2013
Massachusetts	1989	2004
Minnesota	1993	2013
Nevada	1999	
New Hampshire	1998	2010
New Jersey	1992	2013
New Mexico	2003	
New York	2003	2011
Oregon	2008	
Rhode Island	1995	2013
Vermont	1991	2010
Washington	2006	2013
Wisconsin	1982	

Note: See Human Rights Campaign (2013), Human Rights Campaign (2012), and Sears et al. (2009) for more details on these laws.

Table A6: Alternative Test of Customer Discrimination

	(1)	(2)
	Employment	Customer Service
Gay \times Share Prejudiced	0.104 (0.072)	6.509* (3.385)
Gay \times Share Gay	-0.060 (0.307)	-5.8829 (15.532)
adj. R^2	0.12	0.04
States	48	48
Obs	3,350,481	2,726,341

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Note: The dependent variable is the O*NET characteristic for customer and personal service. Data on occupations comes from the 2008 through 2014 American Community Surveys. Data on prejudice come from the 1990 through 2014 waves of the GSS. Data on the size of the gay population by state comes from Gates and Newton (2013). Data on customer service by occupation comes from National Center for O*Net Development (2015). Controls for potential experience, race, and schooling are included. Standard errors are clustered at the state level and are reported in parentheses. Three states have been dropped from the sample because they have too few respondents in the General Social Survey. As shown in Laouénan (2017), if customer discrimination is present, the share of prejudiced individuals in a state should force gay men into occupations with lower amounts of customer service. Instead, I find a positive correlation between prejudice in a state and the level of customer service in the occupations gay men work in.

Table A7: Effect of Customer and Co-Worker Prejudice by Quartile of O*NET Characteristic

	Co-worker	Customer
Gay	-0.441*** (0.040)	-0.375*** (0.043)
Gay \times Share Prejudiced	-0.856*** (0.255)	-0.560 (0.349)
Gay \times 2 nd quartile	-0.042 (0.035)	-0.047 (0.042)
Gay \times 3 rd quartile	0.095*** (0.021)	-0.003 (0.037)
Gay \times 4 th quartile	0.160*** (0.038)	-0.079* (0.046)
Gay \times 2 nd quartile \times Share Prejudiced	0.632* (0.341)	-0.115 (0.415)
Gay \times 3 rd quartile \times Share Prejudiced	0.523** (0.221)	-0.239 (0.325)
Gay \times 4 th quartile \times Share Prejudiced	0.040 (0.394)	0.408 (0.459)
Gay \times Gay Share	1.331*** (0.467)	1.286*** (0.463)
adj. R^2	0.20	0.20
States	48	48
Obs	2,480,544	2,480,544

*** p<0.01, ** p<0.05, * p<0.1

Note: The dependent variable is log hourly wages in constant 1999 dollars. The sample has been restricted to only include gay or married cohabiting men in the labor force between the ages of 25 and 65. Data on wages come from the 2008 through 2014 American Community Surveys. Data on prejudice come from the 1990 through 2014 waves of the GSS. Data on the size of the gay population by state comes from Gates and Newton (2013). Data on occupation characteristics (working in groups or teams for co-workers and customer and personal service for customers) come from O*NET (National Center for O*Net Development 2015). Controls for potential experience, race, and schooling are included and are allowed to vary by sexual orientation. Standard errors are clustered at the state level and reported in parentheses. Three states have been dropped from the sample because they have too few respondents in the General Social Survey.

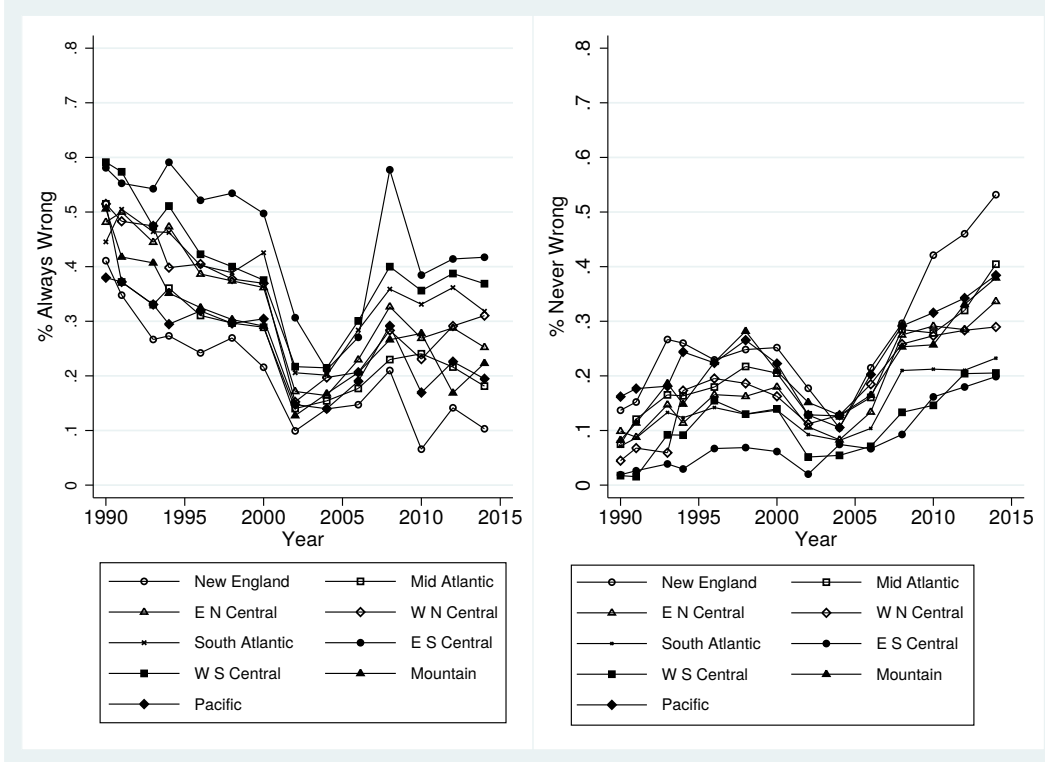
Table A8: Correlation Between Wages and Time-Variant Prejudice

	(1)	(2)
Share Prejudiced	-0.910** (0.440)	-0.793* (0.439)
Share Gay	4.076*** (0.916)	3.507*** (0.952)
Median Prejudice		-0.057** (0.016)
adj. R^2	0.21	0.21
States	48	48
Obs	2,664,766	2,664,766

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

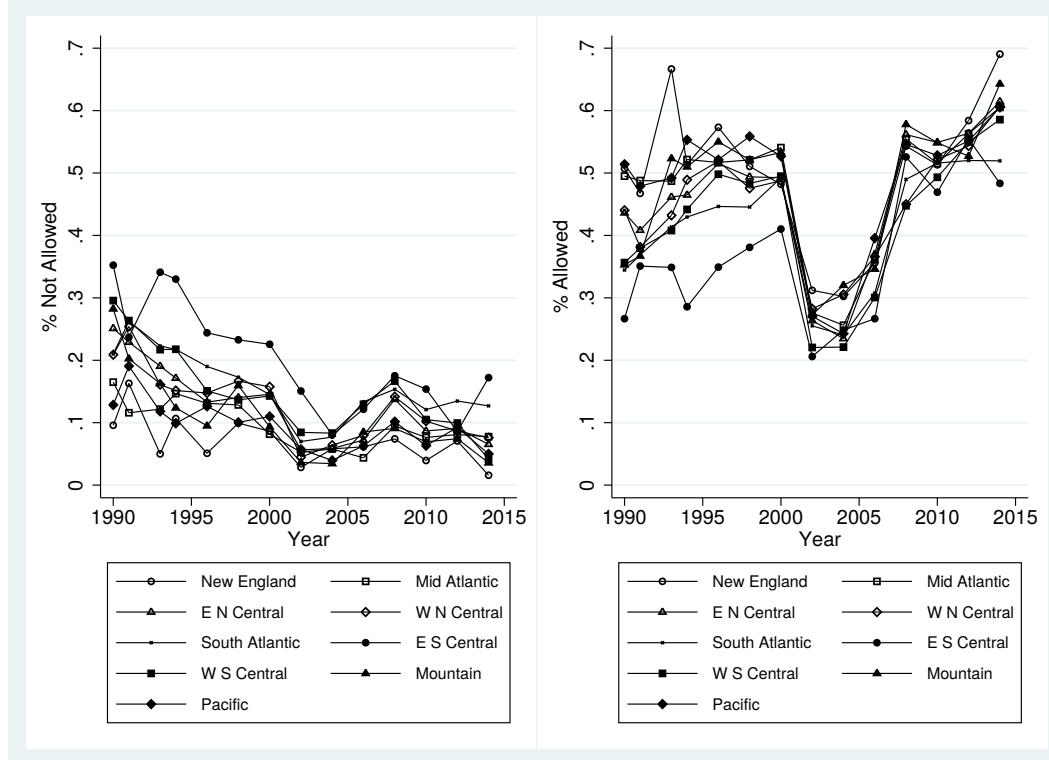
Note: The dependent variable is log hourly wages in constant 1999 dollars. The share of adults who are prejudiced towards gay men and the share of gay men in a state are calculated at the state-year level. The standard errors have been bootstrapped.

Figure A1: Share of Prejudiced Responses to HOMOSEX by Division by Year



Note: Data on prejudice come from the pooled General Social Survey, 1990 to 2014. HOMOSEX asks respondents, “What about sexual relations between two adults of the same sex– do you think it is always wrong, almost always wrong, wrong only sometimes, or not wrong at all?” The figure on the left reports the share answering “always wrong” by Census division and year. The figure on the right reports the share answering “never wrong” by Census division and year.

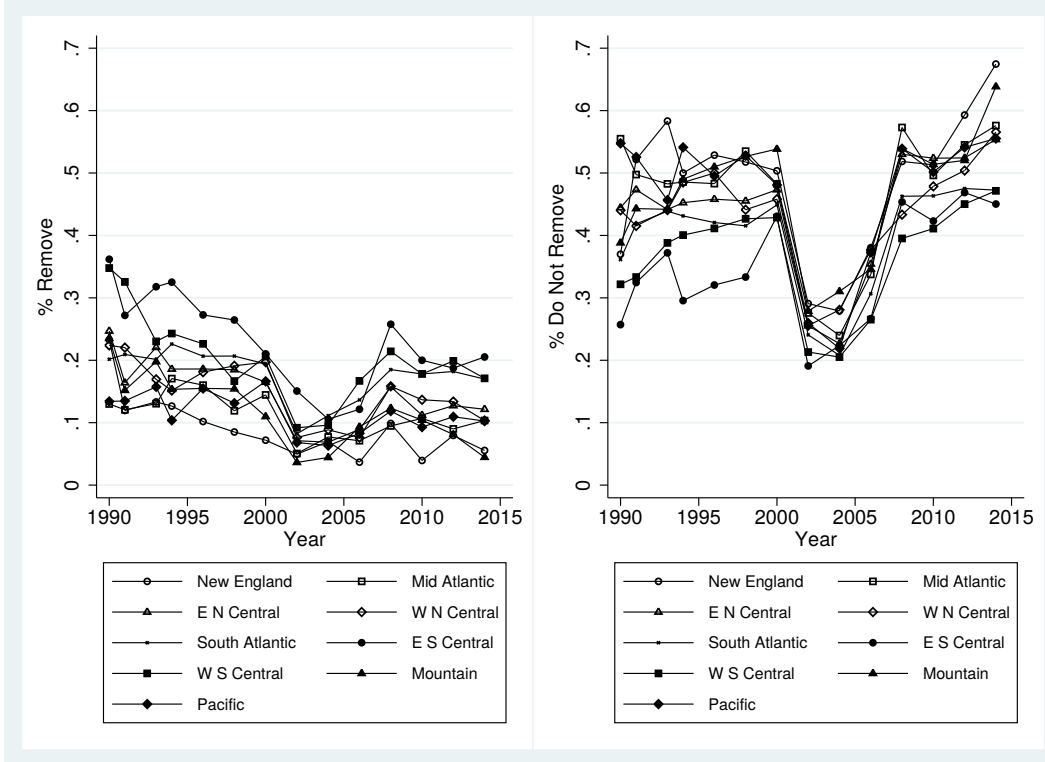
Figure A2: Share of Prejudiced Responses to COLHOMO by Region by Year



Note: Data on prejudice come from the pooled General Social Survey, 1990 to 2014.

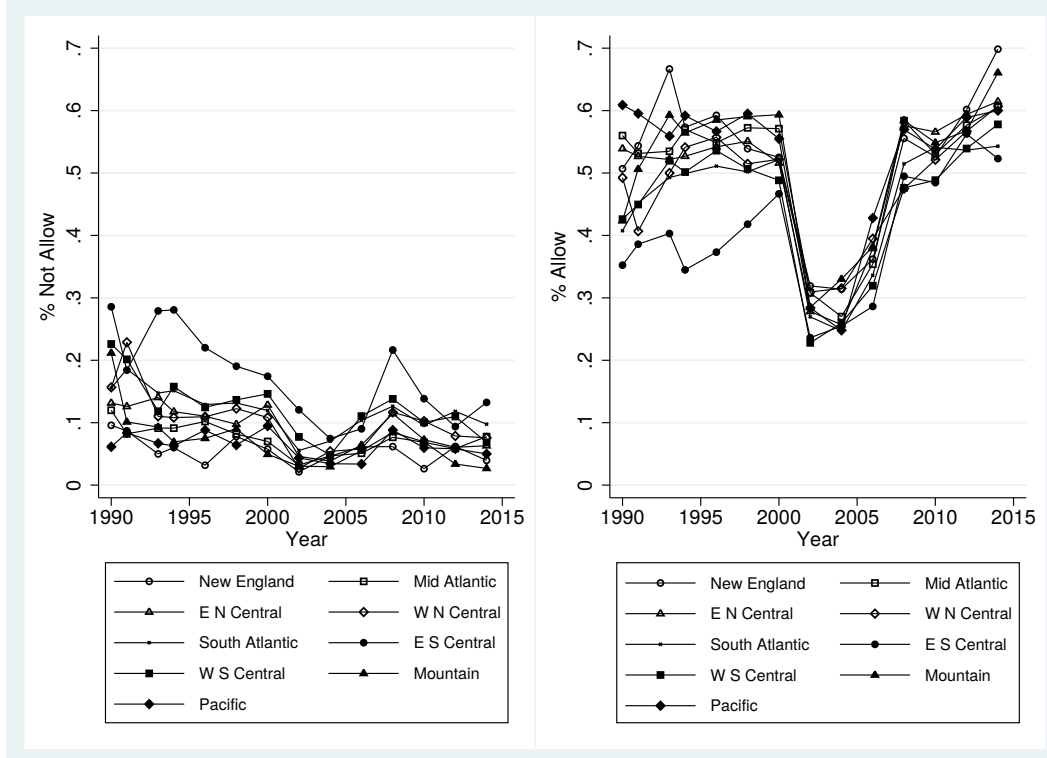
COLHOMO asks respondents, “And what about a man who admits that he is a homosexual? Should such a person be allowed to teach in a college or university, or not?” The figure on the left reports the share answering “not allowed” by Census division and year. The figure on the right reports the share answering “allowed” by Census division and year. Not shown here are the share answering “do not know”.

Figure A3: Share of Prejudiced Responses to LIBHOMO by Region by Year



Note: Data on prejudice come from the pooled General Social Survey, 1990 to 2014. LIBHOMO asks respondents, “If some people in your community suggested that a book he wrote in favor of homosexuality should be taken out of your public library, would you favor removing this book, or not?” The figure on the left reports the share answering “remove” by Census division and year. The figure on the right reports the share answering “do not remove” by Census division and year. Not shown here are the share answering “do not know”.

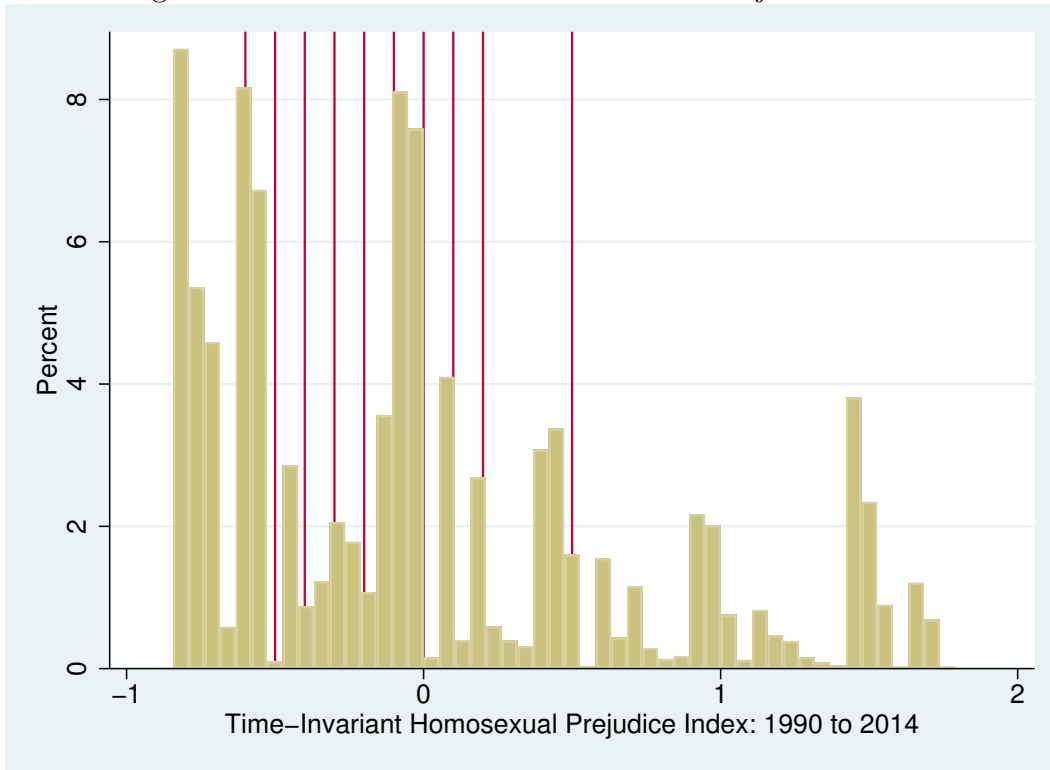
Figure A4: Share of Prejudiced Responses to SPKHOMO by Region by Year



Note: Data on prejudice come from the pooled General Social Survey, 1990 to 2014.

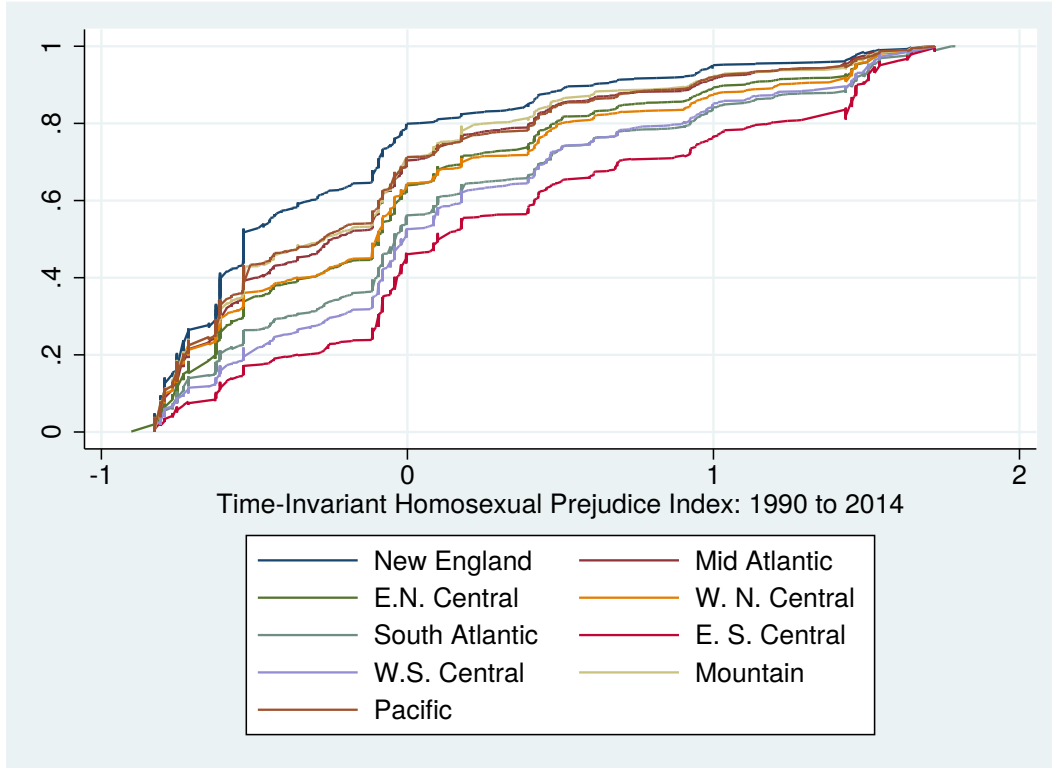
SPKHOMO asks respondents, “Suppose this admitted homosexual wanted to make a speech in your community. Should he be allowed to speak, or not?” The figure on the left reports the share answering “not allowed” by Census division and year. The figure on the right reports the share answering “allowed” by Census division and year. Not shown here are the share answering “do not know”.

Figure A5: Distribution of Time-Invariant Prejudice in GSS



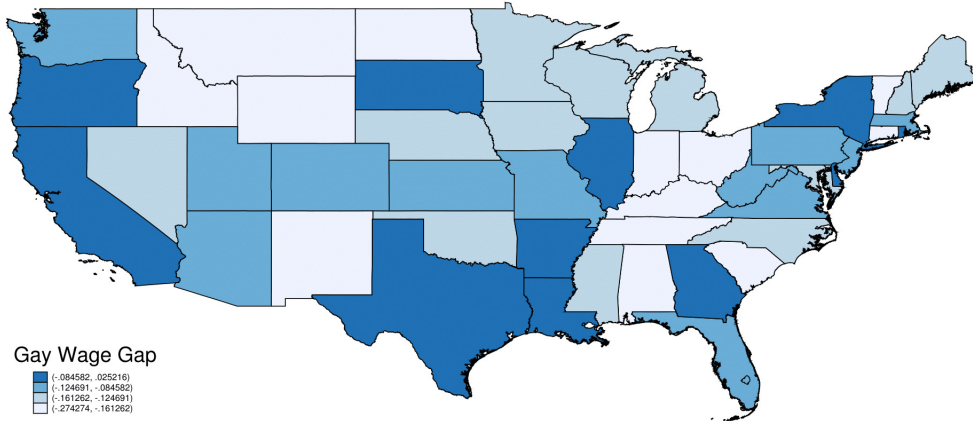
Note: Data on prejudice come from the pooled General Social Survey, 1990 to 2014. See text for a description of how the prejudice measure is constructed. Note that the red lines identify the median prejudice in each state.

Figure A6: Cumulative Distribution of Time-Invariant Prejudice by Census Division



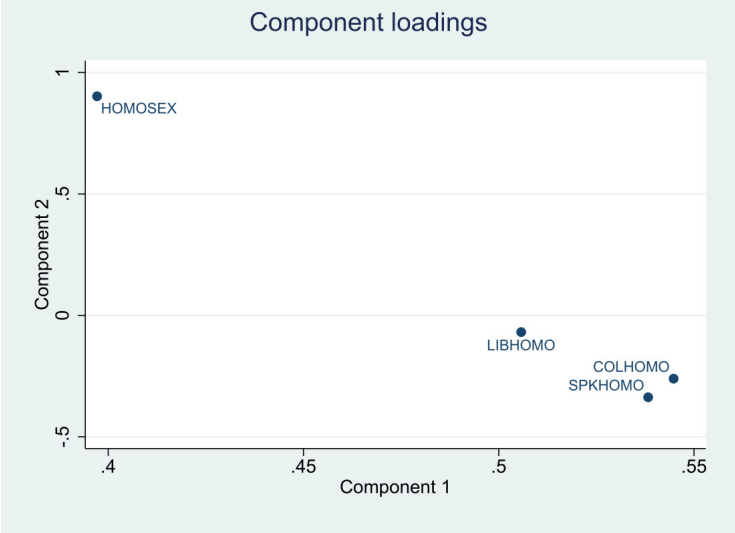
Note: Data on prejudice come from the pooled General Social Survey, 1990 to 2014.

Figure A7: Gay Wage Penalty By State



Note: Data on wages come from the 1990 Decennial Census 5% PUMS, the 2000 Decennial Census 5% PUMS, and the 2008 through 2014 American Community Surveys. Wage penalties are the time-invariant wage penalties found by modifying Equation 2 to identify the average wage penalty in a state using an interaction term between a dummy for being gay and a state indicator. No controls for prejudice or the gay population are included.

Figure A8: Principal Component Analysis Component Loading Plot



Note: Data on prejudice come from the pooled General Social Survey, 1990 to 2014.

B Lesbian Wages and Prejudice

The focus of this paper is the relationship between prejudice and wages for gay men in the United States. In this section, I discuss the relationship between prejudice and wages for lesbian women. There is little evidence of wage discrimination against lesbians since estimates of the wage differential between lesbian women and heterosexual women vary between no difference and a small wage premium for lesbian women (Klawitter 2015). The lack of the wage penalty for lesbian women can mean one of two things: either there is no wage discrimination against lesbian women, or there is wage discrimination against lesbian women and their wage premium would be higher without the discrimination.

The first challenge is the inter-sectional nature of discrimination against lesbian women. Lesbian women experience prejudice due to both their gender and their sexual orientation. Without incorporating sexism and sexist beliefs of employers into the model, one is simply estimating the partial effect. The social psychology literature has consistently found evidence that there is a correlation between prejudice towards homosexuals and a belief in traditional gender roles (Cotten-Huston and Waite 1999; Horvath and Ryan 2003). This implies that regions with strong beliefs in traditional gender roles are also likely to have larger wage gaps for homosexuals. Given the previous evidence from Charles et al. (2009) that the female wage penalty in the United States is driven in part by sexist attitudes among men, ignoring the intersectional nature of discrimination against lesbian women provides a potentially biased estimate.

The second challenge one faces when estimating the relationship between prejudice and the wages of lesbian women is how to address selection into the labor market. Household specialization makes selection a very large threat to the validity of the estimates of wage differentials for lesbian women (Antecol and Steinberger 2013; Daneshvary et al. 2009; Jepsen and Jepsen 2015). Antecol and Steinberger (2013) found that differences in labor

supply vary depending on if one looks at the gap between women who are primary earners and women who are secondary earners. If one does not take into account the role of a woman in the household, the results of the estimation are likely to be biased (Antecol and Steinberger 2013). The household specialization of previous relationships also affects the wage differentials (Daneshvary et al. 2009). Daneshvary et al. (2009) use data from the 2000 Decennial Census, to show that controlling for previous marriages reduces the estimated lesbian wage premium by approximately 20 percent.

A potential concern is that the questions about homosexuality in the GSS may not be predictive of prejudice towards lesbian women. There is only one gender-neutral question about homosexuality in the GSS, the rest either specifically mention gay men or they mention homosexuals who are often conflated with gay men (Herek 2002). But excluding those three questions (COLLEGE, BOOK, and SPEAK) would result in not enough variation in the prejudice measure.

In an effort to not ignore lesbian women and prejudice against lesbians completely, I test how prejudice against homosexuals is correlated with the wages of lesbian women. That being said, this exercise ignores the potentially important factor sexism may play in determining lesbian wages. I use a semi-parametric estimation strategy to control for selection. I regress the indicator for being employed (E_{ist}) on all of the controls used in Equation 2.¹ I include additional controls: the number of children an individual has ($Kids_{i,s,t}$) and a dummy for whether any of those children are under the age of two ($Young_{i,s,t}$).

$$\begin{aligned}
 E_{ist} = & \beta_0 + \beta_1 Lesbian_{ist} + I_s \gamma_s + I_t \gamma_t + (I_s \times I_t) \gamma_{st} \\
 & + (Lesbian_{ist} \times I_s) \theta_{H,s} + (Lesbian_{ist} \times I_t) \theta_{H,t} + \mathbf{X}_{ist} \delta \\
 & + \alpha_1 Kids_{i,s,t} + \alpha_2 Young_{i,s,t} + \epsilon_{ist}
 \end{aligned} \tag{A1}$$

Using the estimated coefficients from Equation A1, I estimate the predicted probability

¹Employed is defined as reporting income from wages in the past year and being in the labor force.

that an individual would be employed (ρ). I use a cubic polynomial of this predicted probability as a control in the wage regression to control for selection into the labor market.

$$\begin{aligned}
LnY_{i,s,t} = & \alpha_0 + \delta_1 L_{i,s,t} + \delta_2 (G_{i,s,t} \times P_s) + \delta_3 (L_{i,s,t} \times Share_s) \\
& + \beta_1 Schooling_{i,s,t} + \beta_2 Exp_{i,s,t} + \beta_3 Exp_{i,s,t}^2 + \beta_4 Black_{i,s,t} + \beta_5 Other_{i,s,t} \quad (A2) \\
& + \theta_s I_s + \theta_t I_t + \theta_{s,t} (I_s \times I_t) + \gamma_1 \rho + \gamma_2 \rho^2 + \gamma_3 \rho^3 + \epsilon_{i,s,t}
\end{aligned}$$

The results in Table A9 provide no consistent evidence of a relationship between prejudice and lesbian wages. The relationship between the prejudice of the median individual and the wages of lesbian women is always positive, but never significant. The estimates for the share of the population that is prejudiced is more mixed. When using the index that averages all four questions together (columns 1 through 6), there is a negative correlation between the share of a state that is prejudiced towards homosexuals and the wages of lesbian women. It is fairly consistent in terms of magnitude, but its significance depends on the sample restrictions. A 1% decrease in the share of a state that is prejudiced towards homosexuals increases the wages of lesbian women by 0.3%. The significance of this coefficient depends on the controls and the samples used. In only one case is it significant at the 5% level. After imposing all of the sample restrictions and additional control variables at once, the sign of the effect switches to positive.

When I use the prejudice index that weights the questions according to the factor analysis (column 7), the coefficient switches sign and is again negative. This suggests that some of the results in the previous columns may have been driven by the way I defined the median prejudice by state. What is consistent in each column is that there is a negative correlation between the size of the lesbian population and the wages of lesbian women. A 1 percentage point increase in the share of the population that is lesbian decreases the wages of lesbian women by between 1.2% and 1.9%. A one standard deviation increase

in the lesbian population would result in a decline in wages of between 1.4% and 2.1%. These results are evidence that sexual orientation prejudice itself is not as large a factor in determining lesbian wages as it is for gay men. Further research is needed to draw more robust conclusions, especially in light of the role sexism may play in lesbian wages.

Table A9: Testing the Predictions of Models of Taste-Based Discrimination for Lesbian Women

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Lesbian × Median Prejudice	0.043 (0.037)	0.049 (0.030)	0.022 (0.042)	0.049 (0.034)	0.022 (0.040)	0.019 (0.038)	0.061 (0.057)
Lesbian × Share Prejudiced	-0.291* (0.149)	-0.209 (0.146)	-0.292** (0.141)	-0.271* (0.160)	-0.257 (0.163)	0.110 (0.174)	-0.273 (0.250)
Lesbian × Share Lesbian	-1.431* (0.761)	-1.378** (0.535)	-1.302* (0.737)	-1.762** (0.693)	-2.154* (1.089)	-1.600** (0.651)	-1.597** (0.664)
adj. R^2	0.23	0.23	0.23	0.22	0.23	0.23	23
States	48	48	48	48	48	48	
Obs	5,276,008	5,276,008	5,276,008	4,955,702	2,402,276	2,266,483	2,266,483
Controls × Lesbian		X				X	X
Laws			X			X	X
Age 25-65				X		X	X
ACS only					X	X	X
PC weight						X	X

*** p<0.01, ** p<0.05, * p<0.1

Note: The dependent variable is log hourly wages in constant 1999 dollars. The sample has been restricted to only include lesbian or married cohabiting women in the labor force. Data on wages come from the 1990 Decennial Census 5% PUMS, the 2000 Decennial Census 5% PUMS, and the 2008 through 2014 American Community Surveys. Data on prejudice come from the 1990 through 2014 waves of the GSS. Data on the size of the lesbian population by state comes from Gates and Newton (2013). Controls for potential experience, race, and schooling are included. Standard errors are clustered at the state level and are reported in parentheses. Three states have been dropped from the sample because they have too few respondents in the General Social Survey.

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