Sexual Orientation Glass Ceilings in the United States: Are Straight Men More Privileged for Top Jobs?

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Research Question

- Does there exist a sexual orientation wage gap across the wage distribution?
- Can we link the wage gap to discrimination against sexual orientation minorities?

Research Question

- **Does there exist a sexual orientation wage gap across the wage distribution?**
  - Mean Wage Gap
    - Since Badgett (1995): Allegretto and Arthur (2001), Antecol et.al (2008) ...

Research Question

- **Does there exist a sexual orientation wage gap across the wage distribution?**
  - Sticky floor - Greater wage gap at the bottom of the wage distribution
  - Glass Ceiling - Greater wage gap at the top end of the wage distribution
    - Aksoy et.al (2019): Gay glass ceiling in the UK

Research Question

- Does there exist a sexual orientation wage gap across the wage distribution?
- **Can we link the wage gap to discrimination against sexual orientation minorities?**
  - Oaxaca-Blinder decomposition and quantile-level decomposition.

Data

2000 U.S. Census Data (also 1990 Census, and 2008 - 13 ACS)

- ▶ Detailed Income Data
- ▶ Homosexuality Identification
    - ▶ If a person reports the relationship between a **same-gender household head** as **"unmarried partner"**, then this person is identified as homosexual.
- ▶ Desirable Data Capacity
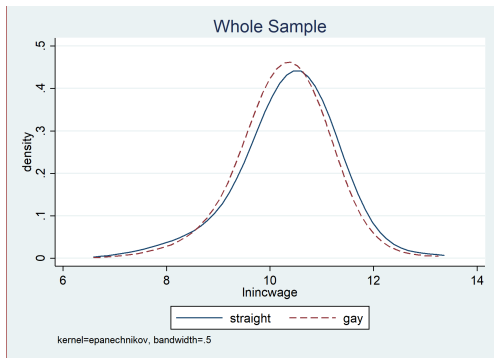   I only focus on White males of working age (15-64).
    - ▶ Gay Men: 6,545

Figure 1: Whole Sample - All Gay and Heterosexual Male

▶ Overall gay wage penalty;
▶ Gay glass ceiling.

Methodology - OLS

- $ln(incwage)_i = \alpha + \beta_1 \times Gay + \beta_2 X_i + \gamma_j + \epsilon_i$
  - GAY is a dummy
  - X_i : control
    - human capital control: years of experience and highest education level
    - city control
    - Bad controls: marriage, child, and occupation (because those are outcomes of gay and will induce selection bias)
  - γ_j : state fixed effect

Methodology - Decomposition

▶ **Oaxaca-Blinder Mean Decomposition**

$$Y_{so} = X\beta_{so} + \epsilon_{so}$$

for $so = S, G$

$$\Delta_O^\mu = E[Y_S|D_S = 1] - E[Y_G|D_S = 0]$$

$$= \text{explained part} + \text{unexplained part}$$

$$= (E[X|D_S = 1] - E[X|D_S = 0])\beta_S + E[X|D_S = 0](\beta_S - \beta_G)$$

$$= \Delta_X^\mu + \Delta_S^\mu$$

▶ **Quantile Level**: Unconditional Quantile Decomposition (Firpo & Fortin, 2007)
  ▶ Use Recentered Influence Function (RIF) as the estimator to decompose wage differentials in the quantile level.

Methodology - Decomposition

X includes:

- **The highest educational level**:
  NoEdu, HS, SomeCollege, College, and HighEdu
- **Years of working experience**
- **Occupational male density**:
  $< 25\%$, $25\% - 50\%$, $50\% - 75\%$, and $> 75\%$
- **Metropolitan status**: city dummy
- **Regions**:
  Central, South, Northeast, Middlewest

Main Findings

- 2000 Census Result:
  - Sexual orientation wage gap:
    - Overall gay glass ceiling
    - Female Dominated Occupations: gay glass ceiling
    - Gay + Married Heterosexuals: gay sticky floor
  - Discrimination plays a key role.
- 1990 Census + 2008 - 13 ACS:
  - An amelioration of homosexuals' working condition
  - Discrimination remains a concern.

Results - OLS

Table 2: Gay Wage Penalty: OLS Estimation (2000 Census)

Outcome Variable: ln(incwage), Sample: 2000 Census

| | **Whole Sample** | | **Marital Status** | | **Occupation(>50%)** | |
| | | | Married | Cohabiting | Female | Male |
	(1)	(2)	(3)	(4)	(5)	(6)
GAY	-0.205***	-0.118***	-0.225***	-0.017***	-0.196***	-0.146***
	(0.002)	(0.013)	(0.019)	(0.002)	(0.019)	(0.017)
Controls						
Productivity	YES	YES	YES	YES	YES	YES
City	YES	YES	YES	YES	YES	YES
FE						
State	YES	YES	YES	YES	YES	YES
Occupation	NO	YES	NO	NO	NO	NO
N(obs)	40,918,649	40,918,649	8,824,479	645,221	13,966,107	26,952,542

Table 1: OLS REGRESSION RESULTS

▶ Gay Wage Penalty

Mean Oaxaca-Blinder Decomposition

	Whole Sample	Marital Status		Occupation($> 50\%$)	
		Married	Cohabiting	Female	Male
	(1)	(2)	(3)	(4)	(5)
Raw Gap	0.081	0.341	-0.189	0.058	0.030
	(0.002)	(0.002)	(0.002)	(0.003)	(0.003)
Composition	-0.030	0.051	-0.136	-0.027	-0.092
Effect	(0.002)	(0.002)	(0.002)	(0.001)	(0.002)
Structural	0.111	0.290	-0.053	0.084	0.122
Effect	(0.002)	(0.002)	(0.002)	(0.003)	(0.003)

Table 2: Gay Wage Gap Decomposition: at the Mean Level

- ▶ Raw Gap - consistent with the OLS results
- ▶ Composition Effect $E[X|D_S = 1] - E[X|D_S = 0])\beta_S$
  - ▶ Negative: Gay men should have earned more than straight men given their productivity differences.
- ▶ Structural Effect $E[X|D_S = 0])(\beta_S - \beta_G)$
  - ▶ Positive: Might indicate the existence of discrimination.

Overall Gay Glass Ceiling

	mean	10	20	30	40	50	60	70	80	90
Raw Gap	0.081	-0.081	0.058	0.089	0.131	0.114	0.137	0.167	0.148	0.142
	(0.002)	(0.006)	(0.003)	(0.003)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.003)
Average			0.022			0.127			0.152	
Composition	-0.030	-0.043	-0.027	-0.024	-0.020	-0.016	-0.014	-0.008	-0.016	-0.035
Effect	(0.002)	(0.004)	(0.003)	(0.002)	(0.002)	(0.001)	(0.002)	(0.002)	(0.002)	(0.003)
Average			-0.031			-0.017			-0.059	
Structural	0.111	-0.038	0.085	0.114	0.150	0.130	0.151	0.175	0.165	0.178
Effect	(0.002)	(0.007)	(0.004)	(0.003)	(0.003)	(0.002)	(0.002)	(0.002)	(0.002)	(0.004)
Average			0.054			0.144			0.172	

Table 3: Decomposition across the Wage Distribution: Whole Sample

- ▶ Raw Gap
  - ▶ Gay Glass Ceiling
- ▶ Composition Effect
  - ▶ Negative but not of large magnitude
- ▶ Structural Effect:
  - ▶ Positive - Imply discrimination.
  - ▶ The major contributor of the raw gap.
  - ▶ Increases as the income level increases.

Marriage: Gay Sticky Floor

(Straight - Gay)	mean	10	20	30	40	50	60	70	80	90
Panel B: Gay + Married Heterosexual Male										
Raw Gap	0.341	0.490	0.395	0.327	0.312	0.266	0.292	0.286	0.272	0.268
Composition Effect	0.051	0.047	0.070	0.069	0.064	0.050	0.069	0.071	0.061	0.044
Structure Effect	0.290	0.443	0.325	0.258	0.248	0.216	0.223	0.216	0.211	0.225

Table 4. Gay Sticky Floor

Possible Explanations:

▶ Marriage sends a signal of life stability to employers.

▶ Marriage *per se* motivates people to work.

Female- Dominated Occupations: Gay Glass Ceiling

(Straight - Gay)	*mean*	10	20	30	40	50	60	70	80	90
Panel D: Female Dominated Occupations										
Raw Gap	0.058	-0.390	-0.118	-0.012	0.066	0.096	0.185	0.197	0.243	0.306
Composition Effect	-0.027	-0.047	-0.051	-0.045	-0.032	-0.021	-0.014	-0.011	-0.010	-0.006
Structure Effect	0.084	-0.343	-0.067	0.032	0.098	0.117	0.199	0.209	0.253	0.312

Table 5. Gay Glass Ceiling

Possible Explanations

- ► Female workers' preferences
- ► Within-gender check and balance

Female- Dominated Occupations: Gay Glass Ceiling

	WholeSample	LowIncome	MedianIncome	HighIncome
	(1)	(2)	(3)	(4)
Gay	-0.152***	-0.154***	-0.124***	-0.142***
	(0.003)	(0.005)	(0.001)	(0.002)
Female Dominated	-0.200***	-0.147***	-0.010***	-0.013***
	(0.000)	(0.000)	(0.000)	(0.000)
Gay × FemaleDominated	-0.017***	0.088***	0.001	-0.061***
	(0.004)	(0.006)	(0.001)	(0.003)
Productivity Control	YES	YES	YES	YES
City Control	YES	YES	YES	YES
State FE	YES	YES	YES	YES
Observations	40,918,649	12,561,789	12,014,040	16,342,820

Table 6: Effect of the Gender Domination on the Gay Wage Gap

▶ For high income males, gay receive a larger wage penalty working in female dominated occupations.

Trend Analysis: 1990 Census, 2008-13 ACS

	mean	10	20	30	40	50	60	70	80	90
Raw Gap	0.183	0.068	0.127	0.173	0.208	0.220	0.196	0.204	0.210	0.173
	(0.003)	(0.006)	(0.005)	(0.004)	(0.003)	(0.004)	(0.003)	(0.003)	(0.004)	(0.004)
			0.123			0.208			0.196	
Composition	0.049	0.093	0.057	0.035	0.047	0.042	0.023	0.041	0.052	0.036
Effect	(0.003)	(0.007)	(0.005)	(0.004)	(0.004)	(0.004)	(0.003)	(0.004)	(0.004)	(0.005)
			0.061			0.037			0.043	
Structural	0.134	-0.024	0.071	0.138	0.161	0.178	0.172	0.164	0.158	0.137
Effect	(0.004)	(0.009)	(0.006)	(0.005)	(0.005)	(0.005)	(0.004)	(0.004)	(0.005)	(0.006)
			0.061			0.170			0.153	

1990 Census: No Evidence of Glass Ceiling or Sticky Floor

	mean	10	20	30	40	50	60	70	80	90
Raw Gap	-0.056	-0.162	-0.128	-0.055	-0.053	-0.021	-0.024	-0.012	-0.024	-0.017
	(0.002)	(0.005)	(0.003)	(0.003)	(0.002)	(0.002)	(0.002)	(0.002)	(0.003)	(0.003)
			-0.115			-0.033			-0.018	
Composition	-0.130	-0.108	-0.121	-0.125	-0.117	-0.138	-0.136	-0.145	-0.145	-0.131
Effect	(0.002)	(0.004)	(0.003)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.003)
			-0.118			-0.130			-0.140	
Structural	0.074	-0.054	-0.007	0.070	0.064	0.117	0.112	0.133	0.122	0.114
Effect	(0.002)	(0.006)	(0.004)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.004)
			0.003			0.098			0.123	

2008 - 13 ACS: Overall Amelioration, Glass Ceiling

Trend Analysis: 1990 Census, 2008-13 ACS

▶ Sticky Floor persists if comparing homosexuals with married heterosexuals.

Sample: 1990 Census, Method: Quantile Oaxaca-style Decomposition

	mean	10	20	30	40	50	60	70	80	90
Panel A: Cohabiting Gay + Married Heterosexual										
Raw Gap	0.330	0.374	0.339	0.319	0.335	0.345	0.280	0.281	0.309	0.287
	(0.003)	(0.006)	(0.005)	(0.004)	(0.004)	(0.004)	(0.003)	(0.004)	(0.004)	(0.005)
Composition	0.247	0.240	0.241	0.210	0.242	0.244	0.184	0.226	0.238	0.262
Effect	(0.006)	(0.012)	(0.009)	(0.007)	(0.007)	(0.008)	(0.006)	(0.)	(0.007)	(0.009)
Structural	0.083	0.133	0.098	0.109	0.093	0.101	0.095	0.055	0.072	0.025
Effect	(0.006)	(0.014)	(0.010)	(0.008)	(0.007)	(0.008)	(0.007)	(0.007)	(0.007)	(0.010)

Sample: 2008 - 13 ACS, Method: Quantile Oaxaca-style Decomposition

	mean	10	20	30	40	50	60	70	80	90
Panel A: Cohabiting Gay + Married Heterosexual										
Raw Gap	0.140	0.198	0.183	0.177	0.145	0.126	0.138	0.114	0.084	0.092
	(0.002)	(0.006)	(0.003)	(0.003)	(0.002)	(0.003)	(0.003)	(0.003)	(0.003)	(0.004)
Composition	-0.020	0.035	-0.027	-0.027	-0.031	-0.026	-0.016	-0.016	-0.033	-0.015
Effect	(0.002)	(0.007)	(0.004)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.004)
Structural	0.160	0.163	0.210	0.205	0.176	0.152	0.154	0.129	0.117	0.107
Effect	(0.003)	(0.008)	(0.005)	(0.004)	(0.003)	(0.003)	(0.004)	(0.004)	(0.004)	(0.005)

Trend Analysis: 1990 Census, 2008-13 ACS

▶ Glass Ceiling persists if focusing on homosexuals working in female-dominated occupations.

Sample: 1990 Census, Method: Quantile Oaxaca-style Decomposition

	mean	10	20	30	40	50	60	70	80	90
Panel A: Female Dominated Occupations										
Raw Gap	0.123	-0.173	-0.070	0.059	0.164	0.187	0.192	0.210	0.261	0.243
	(0.004)	(0.008)	(0.006)	(0.005)	(0.005)	(0.005)	(0.004)	(0.004)	(0.004)	(0.006)
Composition	0.064	0.070	0.054	0.046	0.067	0.069	0.055	0.064	0.060	0.075
Effect	(0.003)	(0.005)	(0.004)	(0.003)	(0.003)	(0.004)	(0.003)	(0.003)	(0.003)	(0.004)
Structural	0.058	-0.243	-0.124	0.012	0.097	0.119	0.137	0.146	0.202	0.167
Effect	(0.004)	(0.010)	(0.007)	(0.005)	(0.005)	(0.005)	(0.005)	(0.004)	(0.004)	(0.007)

Sample: 2008 - 13 ACS, Method: Quantile Oaxaca-style Decomposition

	mean	10	20	30	40	50	60	70	80	90
Panel A: Female Dominated Occupations										
Raw Gap	-0.027	-0.298	-0.198	-0.122	-0.043	0.017	0.039	0.054	0.081	0.154
	(0.003)	(0.006)	(0.004)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.004)	(0.004)
Composition	-0.087	-0.084	-0.100	-0.093	-0.086	-0.086	-0.078	-0.090	-0.088	-0.066
Effect	(0.002)	(0.003)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Structural	0.060	-0.215	-0.098	-0.029	0.043	0.103	0.117	0.144	0.169	0.220
Effect	(0.003)	(0.006)	(0.004)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.004)	(0.004)

Conclusion

- Overall Sexual Orientation Wage Gap
    - Gay Glass ceiling (except for 1990)
- Female Dominated Occupations
    - Gay Glass Ceiling
- Married Heterosexuals + Homosexuals
    - Gay Sticky Floor
- Discrimination plays a key role