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# Marriage (In)equality: Does the Sexual Orientation Wage Gap Persist Across Marital Status?

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## Abstract

Since the first empirical paper on the topic more than two decades ago (Badgett, 1995), the common story in the literature on wages and sexual orientation has been that gay men face a wage penalty compared to heterosexual men while lesbians are paid the same as or more than heterosexual women. However, none of the papers in the literature have thoroughly addressed the role of marital status in these wage gaps. Using data from the 2013-2015 American Community Survey and OLS as well as selection-corrected estimators, we show that the gay male penalty exists only for the group of married men, while the lesbian wage premium persists across marital status but is smaller for married lesbians.

**JEL Classifications:** J31; J12; J16; J71

**Key Words:** Sexual orientation; marriage premium/penalty; wage differential; discrimination

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# 1 Introduction

Since June 2015, same-sex marriage has been legal in all 50 states in the US. Before then, some individual states had allowed their citizens in same-sex partnerships to marry, or would recognize same-sex marriages performed in other states. While the academic literature on the economic circumstances of lesbian, gay, and bisexual (LGB) people had been growing since the mid-1990s, there is still fairly little research on the differences in the economic lives of married versus unmarried LGB people. Just as marital status is recognized as a fundamental characteristic for which researchers ought to account in wage studies of heterosexuals, analyses of the relationship between sexual orientation and wages need to address the role of marital status.

Economic literature on labor markets and wages shows that marital status is a tremendous predictor of wages. In studies of heterosexuals, married men are often seen to earn more than unmarried men, a phenomenon typically explained by either selection into marriage or by the idea that marriage makes men more productive on the job. Married women, on the other hand, often have lower earnings than unmarried women, due to increased house- and care-work responsibilities. Given that marriage is related to other important economic characteristics such as labor market attachment or other (unpaid) work responsibilities, analyses of wage gaps must compare individuals of the same gender *and marital status*.

This paper is the first to apply this “apples to apples” comparison to the literature on the wage effects of sexual orientation. We compare the wages of heterosexuals versus LGB people of the same marital status. In other words, we calculate the sexual orientation wage gap within the group of married people as well as within the group of unmarried people, separately. We find that the sexual orientation wage gap differs by marital status and in some ways contradicts the standard story on the relationship between sexual orientation and wages.

Existing empirical papers on the wages of LGB people have consistently reproduced the findings in the first study on the topic more than 20 years ago (Badgett, 1995): gay men experience a wage penalty while lesbians earn either the same or more than their heterosexual counterparts. The papers in the sexual orientation wage gap literature vary in their institutional contexts (i.e. country, state, or time period), datasets used, and/or empirical specifications, but all face the same major shortcoming. None of the analyses in this literature compare the wages of LGB people with heterosexuals of the same marital status, mainly because the right for same-sex couples to marry did not exist in most states until relatively recently. This

paper fills this gap, comparing the wages of people in different-sex and same-sex couples of the same marital status. In doing so, it reveals that it is only married gay men who face a wage penalty; unmarried gay men actually have a premium compared to their unmarried heterosexual male counterparts. Both married and unmarried lesbians earn more than heterosexual women with the same marital status, but the premium is smaller for lesbians in the married group.

Though same-sex marriage became legal in individual states as early as 2004, it only very recently became possible to do such an analysis with a large, nationally representative dataset for the US. Starting with the 2013 American Community Survey (ACS) data, individuals in same-sex couples could be recorded as either “married” to each other or related via an “unmarried partnership”; before 2013 and the overturning of the Defense of Marriage Act, no same-sex couples could be considered “married” (regardless of what they themselves claimed as their relationship status). This important change makes it possible to calculate the sexual orientation wage gap while controlling for marital status. We exploit this opportunity and present the first analysis of the sexual orientation wage gap accounting for marital status in this paper.

## 2 Background

As is apparent from the literature on the wages of heterosexuals, the average wages of married versus unmarried people are quite different. Married men have higher wages than unmarried men, on average, a finding often explained in the literature as either a result of more productive men selecting into marriage (Loh, 1996; Juhn and McCue, 2016) or of marriage increasing the labor market productivity of men thanks to the ability to specialize in paid work while the wives take on the unpaid care- and housework (Korenman and Neumark, 1991; Chun and Lee, 2001; Antonovics and Town, 2004). On the other hand, the group of married women earns less than unmarried women, on average, mainly because of their increased specialization in household tasks and away from the labor market, which decreases their human capital and negatively impacts wages even upon returning to work full-time (Waldfogel, 1998). The marriage penalty appears to be only or primarily for women with children (Budig and England, 2001; Killewald and Gough, 2013). Furthermore, for both men and women, marriage may be correlated with wages through higher productivity because more productive individuals have higher wages and may be more likely to attract a partner on the marriage market. To the extent that mar-

riage is a signal or a true indicator of higher productivity, married and unmarried people differ.

The mechanisms relating marital status and wages may also exist for people in same-sex couples.<sup>1</sup> Individuals in same-sex couples show some degree of household specialization (though less than in different-sex married or unmarried couples) (Giddings et al., 2014) and selection into marriage on productive characteristics such as education (Gates, 2014). Given these indications that married and unmarried LGB people could also have different levels of productivity, it is important to compare heterosexual and LGB people of the same marital status in calculating a sexual orientation wage gap. However, in all of the literature on the sexual orientation wage gap, this “apples-to-apples” comparison has not yet been made.

Existing literature on the sexual orientation wage gap in the United States has relied on two types of datasets. The first identifies LGB respondents via questions regarding the gender of their past sexual partners. The two datasets of this sort used in the (US) literature are the General Social Survey (GSS) and the National Health and Nutrition Examination Survey (NHANES). The first paper in the sexual orientation wage gap literature used GSS data for its analysis (Badgett, 1995) and found a gay male wage penalty between 11-27% and a statistically insignificant difference between the wages of lesbians and heterosexual women. About half of the subsequent papers in this literature have followed suit and used these data based on sexual behavior. A second type of dataset identifies LGB people via household rosters: the two members of a cohabiting same-sex couple are typically said to be LGB. The 1990 and 2000 US Censuses and the Current Population Survey datasets – as well as the American Community Survey employed in the present analysis – are the key datasets of this type. Though both types of datasets have pros and cons, neither have been suitable for an analysis of the sexual orientation wage gap while controlling for marital status.

In computing a wage gap using the GSS or NHANES data, some of the studies in the literature have not included marital status in their analysis at all (Berg and Lien, 2002; Clarke and Sevak, 2013). Others use the sample of behaviorally heterosexual people as their control group and include dummy variables for being LGB and for being married (separately), meaning that the sexual orientation wage gap in these papers is essentially a comparison between the wages of unmarried heterosexuals as

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<sup>1</sup>It should be noted from the outset, though, that heterosexual married and even cohabiting men have a wage premium compared to heterosexual men living alone, but Zavodny (2008) shows that in the NHANES and GSS data described below, cohabiting behaviorally gay men do not earn more than gay men living alone.

a control group versus those of (all) LGB people (Badgett, 1995; Black et al., 2003; Martell, 2013).

Another type of analysis using GSS data has instead married heterosexuals as a control group and includes dummy variables for unmarried heterosexual, married LGB, and unmarried LGB people (Cushing-Daniels and Yeung, 2009). As in Blandford (2003) before them, Cushing-Daniels and Yeung (2009) assume that the married behaviorally LGB people are actually in heterosexual marriages and thus “masked,” while the unmarried LGB people are “open” or “out.”<sup>2</sup> In having a dummy variable for married LGB people to compare to the control group of married heterosexuals, Cushing-Daniels and Yeung (2009) seemingly directly calculate a sexual orientation wage gap within the group of married people. The authors further use an F-test to test if the coefficients comparing heterosexual married to heterosexual unmarried wages on the one hand and heterosexual married to LGB unmarried wages on the other are different; they say this is a test of a sexual orientation wage gap between the unmarried heterosexual and LGB groups. There are, however, two major problems with understanding this analysis as a direct comparison of wages by sexual orientation within marital status. First, there is no information in the GSS about the gender of the person to whom the respondent is married. Even in the years before gay marriage was legal, LGB people could have considered their relationship “marriage-like” and reported themselves as married. It is therefore unclear if the married and behaviorally LGB people are in heterosexual or same-sex marriages, and it is thus impossible to interpret what a “sexual orientation” wage gap might mean in this context. Second, calculating a wage gap between unmarried LGB and heterosexual people by observing the difference in how these groups’ wages diverge from those of married heterosexuals does not give a direct comparison between the two groups. Indeed, the wage effect of being (un)married might be different for heterosexuals versus LGB people, so this sort of difference-in-differences analysis does not hold.

In the datasets in which LGB people are located via a household roster, on the other hand, researchers can clearly distinguish between people in heterosexual and same-sex relationships. In the Census, CPS, and ACS, married and unmarried heterosexual couples are easily distinguishable, though it was not possible to make this marital status differentiation for same-sex couples until the release of the 2013

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<sup>2</sup>Based on this schema, Blandford (2003) finds that only “open” (unmarried) gay men face a wage penalty and only “open” (unmarried) lesbians experience a wage premium. However, it is unknown if these are indeed heterosexual marriages, so it is impossible to interpret these results with any clarity about what is being measured.

ACS data. A number of the papers using these type of data were aware of this issue, mentioning that it was not clear whether the comparison group for same-sex couples should be married different-sex couples or unmarried different-sex couples (Klawitter and Flatt, 1998; Elmslie and Tebaldi, 2007; Antecol et al., 2008; Baumle and Poston, 2011). Different authors dealt with this issue in different ways.

One study employs 1990 Census data to compare the wages of people in same-sex and different-sex couples, without including marital status in any way (Clain and Leppel, 2001). Another using 2000 Census data has women in same-sex couples as the control group and includes dummy variables for being in a different-sex couple (of any marital status) and for having been previously married, finding that the lesbian wage premium is 20% lower for those who had previously been married (Daneshvary et al., 2009).<sup>3</sup> More often, though, researchers have used married different-sex couples as a control group and compared their wages to those of people in same-sex and unmarried different-sex couples (Klawitter and Flatt (1998) and Klawitter (2011) using Census data, and Elmslie and Tebaldi (2007) using CPS data). Jepsen (2007) went a step further and conducted an F-test to see if same-sex and heterosexual unmarried couples had a different wage gap vis-a-vis heterosexual married people, but as in similar studies using the GSS discussed above, this method does not provide a direct or accurate comparison of the wages of people in same-sex versus unmarried different-sex couples.

Other analyses using Census data compare the wages of same-sex couples with those of people in married and unmarried different-sex couples, separately (Allegretto and Arthur, 2001; Antecol et al., 2008; Baumle and Poston, 2011). This approach is perhaps the closest the literature has come to identifying a marital status-specific sexual orientation wage gap (though it still does not distinguish between married and unmarried same-sex couples, and indeed the analysis in Antecol et al. (2008) does not include same-sex couples who reported themselves as married, as discussed in footnote 3). These studies either find a larger penalty for gay men versus married heterosexuals than the penalty comparing gay men to unmarried heterosexual men (Allegretto and Arthur, 2001; Baumle and Poston, 2011) or that men in same-sex couples have a premium compared to those in different-sex unmarried

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<sup>3</sup>Note that in two studies reviewed here (Antecol et al., 2008; Daneshvary et al., 2009), the authors follow the suggestion in Black et al. (2000) and drop same-sex couples in which either partner had an allocation flag on their variables for sex, marital status, or relationship to householder. In being cautious and eliminating different-sex couples with a potentially miscoded sex from the sample, these studies thus also drop the same-sex couples who had initially said that they were married (see the appendix for more details and an explanation of why this problem does not exist from the 2013 data onward). Thus, the comparison in these papers is essentially one between different-sex couples (of whatever designated marital status) and, inadvertently, *unmarried* same-sex couples.

couples (Antecol et al., 2008).

Given the complications and lack of clarity in the comparison of LGB and heterosexual people of the same marital status, it is a welcome addition to the available data to be able to identify both married and unmarried different-sex and same-sex couples. The next section describes the data and methods used to do so.

## 3 Data and Methods

### 3.1 Data

For this analysis, we employ data from the 2013-2015 pooled cross-sections of the American Community Survey (ACS), obtained from the Integrated Public Use Microdata Series (IPUMS) website (Ruggles et al., 2015). The ACS is a nationally representative data-set collected by the US Census Bureau, who also administers the decennial US Census. In these data, sexual orientation is only identifiable via the household roster. The householder (the first person listed on the roster) names all other people in the household, along with their sex and how they are related to the householder. If the householder identifies a “spouse” or “unmarried partner” of the same sex, both people in the couple are considered here to be gay or lesbian. Though this identification of lesbian and gay individuals is problematic in that it can only identify people in (cohabiting) couples, the data have nevertheless been crucial in enabling a large-scale analysis based on sexual orientation. The fact that only couples are identifiable in the ACS is not a problem for this study, since our focus is on LG and heterosexual people in (married and unmarried) couples – though the fact that our couples are cohabiting and that one person in the couple is the householder may be a source of selection issues.

As useful as the ACS and Census data have been for the sexual orientation wage gap literature, same-sex couples in the data were not permitted to be identified as “married” until 2013 – regardless of what the couple itself reported as their marital status. Indeed the Census Bureau considered it a “logical inconsistency” for same-sex couples to be married, because the Defense of Marriage Act prohibited the recognition of same-sex marriage at the national level (individual states had started allowing it as early as 2004, but it was not recognized at the national level until 2013 and permitted at the national level until 2015). Anyone in a same-sex couple who reported being married to their partner had their relationship classification changed from “spouse” to “unmarried partner,” leaving no married same-sex couples in the ACS or Census data. Starting with the 2013 data, though, the Census Bureau



no longer made this change. (See the appendix for a detailed explanation of the treatment of same-sex couples in the Census and ACS data.) We thus exploit the newly available data on married and unmarried people in same-sex couples and study the sexual orientation wage gap comparing LGB and heterosexual people in couples of the same marital status (married versus unmarried).

As discussed in detail in the appendix, there has always been the possibility that the sample of same-sex couples in the ACS data are contaminated with some mis-coded different-sex couples. To avoid including them in the sample, we discard households in which either member of the couple has an allocation flag on their variables for “sex” or “relationship to householder,” or who sent in their form by mail or internet and have an allocated marital status. The pooled 2013-2015 cross-sections of the ACS data used in this analysis<sup>4</sup> comprise 1,320,221 coupled working-age (25-64) individuals, 1,184,525 of whom are married (1,176,690 heterosexual; 3,741 gay; 4,021 lesbian) and 135,696 of whom are unmarried (123,723 heterosexual; 6,220 gay; 5,753 lesbian). Hourly wages, our outcome variable of interest, are calculated as total wage income in the previous 12 months divided by the usual number of hours worked per week times the midpoint of the interval given for weeks worked per year. We restrict our sample to full-time workers (those who work at least 35 hours/week for at least 50 weeks/year) who earned an hourly wage between \$2 and \$250.

The top lines of tables 1 and 2 show the average and median earnings for full-time working men and women, respectively, by marital status and sexual orientation. These unconditional wage figures show a wage premium for gay men and lesbians compared to their heterosexual counterparts of the same gender and marital status. Of the eight groups, married gay men have the highest mean and median hourly wage, while wages are lowest for unmarried heterosexual women. Depending on the measure, either married heterosexual men or married lesbians have the second-highest wages, followed by unmarried lesbians and then unmarried heterosexual men. These unconditional wages show the complexity of the interrelationship between gender, marital status, and sexual orientation in determining wages.

Tables 1 and 2 further show that these eight groups vary tremendously in their characteristics. Compared to heterosexuals of the same gender and marital status, both gay men and lesbians are more likely to be white, be proficient in English, have a disability, and live in a larger metropolitan area, and they also have higher levels of education, are younger, and are less likely to be Hispanic or have children.

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<sup>4</sup>Note that in these years, there were still some states that did not allow for same-sex marriage, though some same-sex couples reported being married in the ACS. We explore this issue in more detail below.

Regional differences are not as clearly pronounced by sexual orientation, though both gay men and lesbians are less likely to live in the South or the Midwest than heterosexuals. Along with differences by sexual orientation, the groups of married versus unmarried individuals also have rather different characteristics (particularly along the lines of age, education, and the presence of children). To calculate the sexual orientation wage gap by gender and marital status, we thus control for the very different characteristics of these groups in the conditional wage gaps presented below.

As in other studies of the sexual orientation wage gap, in the multivariate analysis predicting wages for full-time workers, we control for race, ethnicity, education, potential experience (age minus years of education minus six), which captures the effects of age, English proficiency, disability, occupation (in 25 categories), and industry (in 16 categories) at the individual level; state, degree of ruralness,<sup>5</sup> and number and age of children at the household level; and dummy variables for years.

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<sup>5</sup>We measure a household's degree of urbanity/ruralness based on the so-called Beale scale, which ranges from 1-9 and increases with ruralness. The data are compiled via the United States Department of Agriculture and the Missouri Census Data Center. The regressions below use the Beale code as a continuous variable, while the corresponding categories of metropolitan size in tables 1 and 2 are: large = county in a metropolitan area with at least 1 million people; medium = county in a metropolitan area with 250,000 to 1 million people; small = county in a metropolitan area with up to 250,000 people; and non-metro = county in a non-metropolitan area.

Table 1: Descriptive Statistics for Full-Time Working Men

Variable	Married		Unmarried	
	Heterosexual	Gay	Heterosexual	Gay
<i>Hourly Wage</i>				
Median	25.55 (0.04)	30.03 (0.36)	17.65 (0.07)	24.81 (0.27)
Mean	33.17 (0.03)	39.13 (0.55)	21.57 (0.07)	33.10 (0.37)
<i>Race and Ethnicity</i>				
White	81.19 (0.06)	86.21 (0.69)	76.72 (0.22)	83.96 (0.60)
Black	6.68 (0.04)	4.02 (0.40)	10.82 (0.17)	5.27 (0.40)
Native American	0.47 (0.01)	0.66 (0.16)	0.87 (0.05)	0.53 (0.12)
Asian	6.35 (0.04)	5.18 (0.44)	2.57 (0.08)	4.39 (0.32)
Other Race	5.31 (0.04)	3.93 (0.40)	9.03 (0.15)	5.85 (0.38)
Hispanic	14.03 (0.06)	13.38 (0.74)	20.92 (0.21)	13.39 (0.55)
<i>Educational Attainment</i>				
Less Than High School	7.24 (0.04)	3.14 (0.45)	12.12 (0.17)	1.82 (0.22)
High School	21.99 (0.06)	11.76 (0.65)	30.54 (0.23)	12.23 (0.52)
Some College	20.42 (0.06)	16.52 (0.72)	23.92 (0.21)	21.97 (0.64)
Associate's Degree	8.92 (0.04)	8.69 (0.58)	8.44 (0.14)	8.15 (0.40)
Bachelor's Degree	24.82 (0.06)	29.56 (0.89)	18.50 (0.18)	32.24 (0.70)
Master's Degree	11.41 (0.05)	19.67 (0.75)	4.41 (0.09)	16.21 (0.54)
Professional Degree	2.80 (0.02)	5.81 (0.44)	1.27 (0.05)	4.44 (0.29)
Doctoral Degree	2.40 (0.02)	4.86 (0.39)	0.81 (0.04)	2.94 (0.24)
<i>Other Personal Char.</i>				
Age	45.05 (0.02)	37.60 (0.19)	46.05 (0.05)	42.46 (0.15)
English	96.31 (0.03)	98.60 (0.25)	94.40 (0.12)	99.02 (0.18)
Disability	4.12 (0.03)	4.76 (0.48)	3.81 (0.09)	4.07 (0.31)

<i>Region</i>				
New England	4.82	8.71	5.40	4.95
	(0.03)	(0.60)	(0.11)	(0.32)
Mid-Atlantic	12.24	16.79	12.86	14.49
	(0.05)	(0.76)	(0.16)	(0.55)
East North Central	15.93	10.18	15.96	13.87
	(0.05)	(0.61)	(0.18)	(0.52)
West North Central	7.77	5.30	7.70	4.84
	(0.04)	(0.47)	(0.14)	(0.36)
South Atlantic	18.50	17.46	18.29	21.46
	(0.06)	(0.70)	(0.19)	(0.60)
East South Central	5.79	2.92	4.68	3.93
	(0.04)	(0.32)	(0.11)	(0.29)
West South Central	12.42	8.27	10.51	10.39
	(0.05)	(0.58)	(0.15)	(0.44)
Mountain	7.18	5.98	7.57	6.97
	(0.04)	(0.43)	(0.13)	(0.39)
Pacific	15.34	24.39	17.02	19.11
	(0.05)	(0.81)	(0.18)	(0.59)
<i>Metropolitan Size</i>				
Large	53.85	69.42	54.83	73.73
	(0.07)	(0.93)	(0.25)	(0.67)
Medium	20.47	16.01	20.71	15.27
	(0.06)	(0.78)	(0.20)	(0.55)
Small	8.39	4.97	8.37	4.61
	(0.04)	(0.42)	(0.14)	(0.32)
Non-Metro	17.29	9.61	16.09	6.39
	(0.06)	(0.57)	(0.18)	(0.39)
<i>Children</i>				
Any Children Under 5	26.82	9.01	25.03	3.38
	(0.07)	(0.60)	(0.22)	(0.33)
Any Children 6-18	44.71	13.63	31.98	4.43
	(0.07)	(0.70)	(0.23)	(0.34)
Any Children Under 18	58.57	19.00	45.19	6.34
	(0.07)	(0.80)	(0.25)	(0.41)
Number of Children $\leq 5$ , If Any	1.38	1.39	1.30	1.32
	(0.00)	(0.04)	(0.01)	(0.06)
Number of Children 6-18, If Any	1.71	1.70	1.66	1.52
	(0.00)	(0.04)	(0.01)	(0.06)
Number of Children $\leq 18$ , If Any	1.94	1.88	1.89	1.77
	(0.00)	(0.05)	(0.01)	(0.07)
Observations	694,149	3,741	67,200	6,220

*Notes:* Standard errors in parentheses.

Table 2: Descriptive Statistics for Full-Time Working Women

Variable	Married		Unmarried	
	Heterosexual	Lesbian	Heterosexual	Lesbian
<i>Hourly Wage</i>				
Median	20.59 (0.03)	25.65 (0.42)	16.82 (0.06)	21.24 (0.28)
Mean	25.23 (0.03)	31.08 (0.37)	19.95 (0.06)	26.08 (0.27)
<i>Race and Ethnicity</i>				
White	80.46 (0.08)	84.03 (0.74)	78.47 (0.23)	84.57 (0.65)
Black	7.68 (0.05)	6.86 (0.54)	9.36 (0.17)	7.41 (0.51)
Native American	0.51 (0.01)	0.48 (0.11)	0.96 (0.06)	0.59 (0.11)
Asian	6.97 (0.05)	2.95 (0.30)	3.98 (0.11)	2.04 (0.22)
Other Race	4.39 (0.04)	5.68 (0.47)	7.24 (0.14)	5.39 (0.40)
Hispanic	11.32 (0.06)	10.42 (0.59)	16.00 (0.20)	12.11 (0.58)
<i>Educational Attainment</i>				
Less Than High School	3.77 (0.04)	1.83 (0.25)	5.32 (0.12)	2.05 (0.25)
High School	18.28 (0.07)	11.37 (0.63)	21.24 (0.22)	13.89 (0.58)
Some College	19.28 (0.07)	17.89 (0.74)	24.42 (0.23)	22.09 (0.70)
Associate's Degree	11.72 (0.06)	10.23 (0.59)	11.70 (0.17)	10.68 (0.50)
Bachelor's Degree	27.32 (0.08)	27.08 (0.83)	25.39 (0.23)	28.74 (0.73)
Master's Degree	14.88 (0.06)	22.19 (0.76)	9.23 (0.14)	15.94 (0.56)
Professional Degree	2.71 (0.03)	5.06 (0.39)	1.64 (0.06)	3.29 (0.28)
Doctoral Degree	2.04 (0.02)	4.34 (0.35)	1.05 (0.05)	3.32 (0.28)
<i>Other Personal Char.</i>				
Age	44.90 (0.02)	44.21 (0.19)	37.65 (0.05)	42.20 (0.17)
English	97.37 (0.03)	99.38 (0.15)	97.00 (0.09)	99.50 (0.11)
Disability	3.55 (0.03)	4.48 (0.38)	3.57 (0.10)	4.80 (0.34)

<i>Region</i>				
New England	5.04 (0.04)	12.16 (0.61)	6.02 (0.12)	5.43 (0.37)
Mid-Atlantic	12.67 (0.06)	13.97 (0.65)	13.61 (0.18)	12.28 (0.54)
East North Central	16.20 (0.07)	11.07 (0.62)	16.25 (0.20)	14.63 (0.57)
West North Central	8.57 (0.05)	5.92 (0.52)	7.87 (0.16)	6.86 (0.50)
South Atlantic	19.27 (0.07)	17.52 (0.71)	18.26 (0.20)	19.90 (0.62)
East South Central	6.11 (0.04)	2.77 (0.27)	4.46 (0.11)	4.33 (0.33)
West South Central	11.82 (0.06)	8.17 (0.52)	9.52 (0.16)	12.86 (0.56)
Mountain	6.53 (0.04)	6.90 (0.47)	7.48 (0.14)	8.46 (0.45)
Pacific	13.79 (0.06)	21.51 (0.74)	16.55 (0.19)	15.26 (0.55)
<i>Metropolitan Size</i>				
Large	52.65 (0.09)	62.05 (0.92)	55.94 (0.27)	59.16 (0.80)
Medium	20.13 (0.07)	20.28 (0.78)	20.67 (0.22)	21.28 (0.67)
Small	8.66 (0.05)	6.67 (0.50)	8.03 (0.15)	8.44 (0.49)
Non-Metro	18.56 (0.07)	11.00 (0.58)	15.36 (0.19)	11.12 (0.50)
<i>Children</i>				
Any Children Under 5	19.71 (0.07)	15.70 (0.71)	17.19 (0.21)	8.20 (0.48)
Any Children 6-18	38.17 (0.09)	25.78 (0.87)	30.09 (0.25)	20.60 (0.69)
Any Children Under 18	49.11 (0.09)	36.03 (0.93)	38.76 (0.27)	25.78 (0.74)
Number of Children $\leq 5$ , If Any	1.29 (0.00)	1.37 (0.03)	1.23 (0.01)	1.23 (0.03)
Number of Children 6-18, If Any	1.62 (0.00)	1.57 (0.03)	1.63 (0.01)	1.55 (0.03)
Number of Children $\leq 18$ , If Any	1.78 (0.00)	1.72 (0.03)	1.81 (0.01)	1.63 (0.03)
Observations	482,641	4,021	56,523	5,753

*Notes:* Standard errors in parentheses.

### 3.2 Multivariate Methods

As a starting point for the multivariate analysis, we follow the vast majority of the sexual orientation wage gap literature and use ordinary least squares (OLS) to estimate the conditional gap in wages for full-time working individuals in same-sex versus different-sex couples, with the same observable characteristics. In particular, we predict log wages  $y$  for person  $i$  as

$$y_i = \alpha + \gamma SO_i + X_i' \beta + \varepsilon_i \quad (1)$$

given one's sexual orientation ( $SO$ ) and the characteristics  $X$  described above. We estimate this equation separately by gender as well as marital status, to produce a sexual orientation wage gap ( $\gamma$ ) for married men, unmarried men, married women, and unmarried women.

We use the OLS equation above as a starting point to be consistent with previous literature, but also recognize that it cannot account for the possibility of selection bias into full-time work. In other words, we must address the possibility that the mechanisms for selection into full-time work are also correlated with wages, and that these mechanisms might differ by marital status and gender. In order to eliminate this potential selection bias, we employ both Heckman's (1979) two-step procedure as well as maximum likelihood estimation (MLE) in our estimation of the sexual orientation wage gap. The estimation problem arising from selection is that  $y_i$  is only observed for full-time workers. This selection mechanism is modeled by

$$Z_i^* = \gamma' W_i + u_i, \text{ where} \quad (2)$$

$$Z_i = \begin{cases} 1 & \text{if } Z_i^* > 0 \\ 0 & \text{if } Z_i^* \leq 0, \text{ while} \end{cases}$$

$$\text{Prob}(Z_i = 1) = \Phi(\gamma' W_i) \text{ and}$$

$$\text{Prob}(Z_i = 0) = 1 - \Phi(\gamma' W_i)$$

where  $Z_i$  is a binary variable taking a value of 1 if a person works full-time. It is determined by  $W_i$ , which includes the personal- and household-level characteristics in  $X_i$  above, one's sexual orientation, and additionally investment and retirement income as instruments to identify the model. Assuming that

$$(\varepsilon_i, u_i) \sim \text{bivariate normal}[0,0,\sigma_\varepsilon,1,\rho],$$

the model controls for potential selection to produce unbiased results when  $\varepsilon_i$  and  $u_i$  are correlated (i.e.  $\rho \neq 0$ ). The inclusion of several different ways to test our results is meant to offer a robust estimate of the sexual orientation wage gap by marital status.

## 4 Multivariate Results

### 4.1 Main Results

We begin by studying the results of the OLS estimation. Compared to previous literature on the sexual orientation wage gap, the value added here is that we study the sexual orientation wage gap not only by gender, but also by marital status. Table 3 presents the results of four separate regressions: the first is for the sample of married men only; the second for the sample of unmarried men only; the third for married women; and the last for unmarried women. The table gives the coefficient on being in a same-sex couple in each of these separate regressions. The full table with results can be found in the appendix.

Table 3: Sexual Orientation Wage Gap by Marital Status and Gender

	(1)	(2)
Log (Hourly Wage)	OLS	OLS
Gay Married	-0.024** (0.011)	-0.041*** (0.008)
Gay Unmarried	0.052*** (0.008)	0.049*** (0.007)
Lesbian Married	0.046*** (0.009)	0.050*** (0.007)
Lesbian Unmarried	0.063*** (0.008)	0.056*** (0.006)
Controls for $X$	Yes	Yes
Population Weights	Yes	No

Notes: This table shows the results of four separate regressions, comparing gays/lesbians to heterosexuals with the same gender and marital status. The sample includes 697,890 full-time working married men (0.54% of whom are gay), 73,420 full-time working unmarried men (8.47% gay), 486,662 full-time working married women (0.83% lesbian), and 62,276 full-time working unmarried women (9.24% lesbian). Standard errors in parentheses. \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ .

The findings in table 3 consistently show that the sexual orientation wage gap differs by marital status, regardless of whether the survey weights are applied (column 1) or not (column 2). The weighted regressions provide consistent and unbiased



estimates, but decrease precision. In both cases for these regressions, though, the story remains the same. For men, we observe a negative wage gap (a wage penalty) for married gay men compared to married heterosexual men, but a positive gap – a wage *premium* – for unmarried gay men. Recall that the literature had consistently found that gay men earn less than straight men. These results show that this finding only holds for the group of married men.

The results for women are somewhat similar. The results confirm the standard finding in the literature that lesbians earn (the same as or) more than straight women. But table 3 reveals that the magnitude of the gap is dependent on marital status. The lesbian wage premium exists for both married and unmarried women, but it is stronger in the unmarried group. Thus, as with the findings for men, married LGB people do relatively worse than unmarried LGB people when comparing their wages to heterosexuals of the same gender and marital status.

Table 4: Sexual Orientation Wage Gap by Marital Status and Gender

	(1)	(2)	(3)
	MLE	MLE	Two-Step
Log (Hourly Wage)			
Gay Married	-0.037*** (0.011)	-0.055*** (0.008)	-0.061*** (0.008)
Gay Unmarried	0.050*** (0.009)	0.048*** (0.007)	0.046*** (0.007)
Lesbian Married	0.051*** (0.009)	0.054*** (0.007)	0.054*** (0.007)
Lesbian Unmarried	0.067*** (0.008)	0.060*** (0.006)	0.063*** (0.006)
Controls for $X$	Yes	Yes	Yes
Population Weights	Yes	No	No

Notes: This table shows the results of four separate sets of regressions, compares gays/lesbians to heterosexuals with the same gender and marital status. The sample includes 1,070,075 married men (0.62% of whom are gay), 123,590 unmarried men (8.16% gay), 1,171,716 married women (0.60% lesbian), and 122,376 unmarried women (7.83% lesbian). The number of full-time workers who get selected into the wage regression is the same as in table 3. Standard errors in parentheses. \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ .

Are these results robust to potential selection bias into full-time work? Table 4 addresses this question. Across specifications (MLE with survey weights; MLE without survey weights; and two-stage least squares where it is not possible to use weights in the program Stata), the pattern found in the OLS results remains the

same. Married gay men experience a wage penalty compared to married heterosexuals, though unmarried gay men have a wage premium compared to unmarried heterosexual men. Lesbians have a wage premium regardless of marital status, but the premium is bigger for the unmarried group.

Depending on econometric specification used, transforming the coefficients reported in the tables by  $e^\gamma - 1$  produces a wage penalty for married gay men between -2.1 and -5.9 percent. Conversely, the wage premium for unmarried gay men compared to unmarried heterosexual men is between 4.7 and 5.3 percent. While the premium for married lesbians compared to married heterosexual women is between 4.7 and 5.5 percent, the premium for unmarried lesbians is between 5.8 and 6.9 percent, quite a bit larger.

Summarizing the results, we find that a gay wage penalty exists only for the group of married men. Indeed unmarried gay men have a wage premium over unmarried heterosexual men. For women, the results are that the lesbian wage premium standard in the literature holds in both the groups of married and unmarried women, but the premium is larger in the unmarried group.

## 4.2 Legal Access to Marriage Across State-Years

Same-sex marriage became legal in all US states only in 2015. Thus, in the 2013-2015 data analyzed here, there are some same-sex couples who lived in state-years which did not allow for same-sex marriage, but who may still have reported being married in the ACS. There are indeed “married” same-sex couples in state-years that had not allowed same-sex marriage in our data, but the share of “married” same-sex couples in these state-years is lower than in state-years in which marriage was legal. Because not all couples who might have wanted to get married could do so, there is an institutionally-imposed selection bias into marriage in the 2013-2015 data. Some in the group of same-sex unmarried couples might have characteristics related to selection into marriage (such as higher productivity and/or a division of labor at home) that are also associated with higher wages, but these couples might have lived in state-years which did not allow for same-sex marriage. If these couples could not legally marry, they may be less likely to report being married on their ACS form. In this case, our sample of same-sex unmarried couples is “contaminated” with couples who are more like married couples.

To the extent that the sample of unmarried same-sex couples contains couples with characteristics more similar to married couples, the wage premium of those in unmarried same-sex couples over those in unmarried different-sex couples would be

overestimated in the above analysis. We therefore divide our sample of couples into those who lived in state-years which allowed for same-sex marriage and those that did not<sup>6</sup> and repeat the above analyses for the two separate groups.

We expect that our estimation of the sexual orientation wage gap is most accurate in the state-years that allowed for same-sex marriage. In these state-years, same-sex couples could choose whether or not they would marry, just as different-sex couples could. The comparison of same-sex and different-sex couples within marital status is therefore not affected by any institutional barriers in access to marriage.

Table 5 shows the sexual orientation wage gap by gender and marital status for the couples living in state-years which did allow same-sex couples to legally marry. For three of the four groups, the results are largely qualitatively similar to the results for the aggregated sample. The wage penalty for men in married same-sex couples as well as the wage premium for men in unmarried couples and women in married couples persist and remain very similar in magnitude.

Table 5: Sexual Orientation Wage Gap by Marital Status and Gender, in State-Years Allowing Same-Sex Marriage

Log (Hourly Wage)	Selection			No Selection	
	MLE	MLE	Two-Step	OLS	OLS
Gay Married	-0.033*** 0.013	-0.052*** 0.009	-0.058*** 0.009	-0.021* 0.012	-0.039*** 0.009
Gay Unmarried	0.056*** (0.011)	0.050*** (0.008)	0.046*** (0.009)	0.059*** (0.010)	0.052*** (0.008)
Lesbian Married	0.052*** (0.010)	0.055*** (0.008)	0.055*** (0.008)	0.047*** (0.010)	0.051*** (0.008)
Lesbian Unmarried	0.055*** (0.010)	0.047*** (0.008)	0.050*** (0.008)	0.053*** (0.010)	0.045*** (0.008)
Controls for $X$	Yes	Yes	Yes	Yes	Yes
Population Weights	Yes	No	No	Yes	No

Notes: This table compares gays/lesbians to heterosexuals with the same gender and marital status, living in state-years that allowed same-sex marriage. The sample includes 696,686 (5,288) [454,995 (3,046) full-time working] married heterosexual (gay) men; 83,389 (6,678) [50,101 (4,101) full-time working] unmarried heterosexual (gay) men; 763,044 (5,784) [316,281 (3,382) full-time working] married heterosexual (lesbian) women; and 82,671 (6,035) [42,461 (3,585) full-time working] unmarried heterosexual (lesbian) women. Standard errors in parentheses. \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ .

<sup>6</sup>Because there is no information regarding the month and day that a household participated in the ACS, we consider a state-year granting access to same-sex marriage if it became legal *at any point* in the year, even though we may be observing households after the exact date of the legal change.

The one difference from the main results when we restrict the sample to state-years that allowed for same-sex marriage is that the wage premium for unmarried lesbians is smaller. Indeed in the state-years that allowed for same-sex marriage, the lesbian wage premium does not differ by marital status. This result points to the possibility that in state-years in which same-sex couples had the option to marry, those who chose to stay unmarried may be those with lower earnings and/or characteristics associated with lower productivity. In this “truer” test of the sexual orientation wage gap within marital status, the lesbian wage premium for both the married and unmarried groups is between 4.8 and 5.7 percent.

Turning to the analysis for same-sex couples living in state-years in which same-sex marriage was not a legal possibility, we expect that the sexual orientation wage gap is less straight-forward to predict. On the one hand, couples in these state-years who report being married do so against the legal institutions in which they live. Further, state-years which did not allow for same-sex marriage may be more hostile to those in same-sex couples; for the same reasons that same-sex marriage was not legalized there, people in same-sex couples may face discrimination on the labor market. In this sense, we would expect the wage penalty for married gay men to be even stronger in these state-years, and the wage premium for married lesbians to be lower or even turned into a penalty.

On the other hand, the group of unmarried same-sex couples in these state-years may contain couples who have characteristics associated with marriage, but who cannot join the group of married couples. To the extent that these individuals earn more, the sexual orientation wage gap for unmarried couples will favor same-sex couples. At the same time, for the reasons discussed in the previous paragraph, these couples are also likely to face discrimination based on their sexual orientation. It is thus not clear in which ways the sexual orientation wage gap will differ in these state-years.

Table 6 presents the results for couples living in state-years which did not allow same-sex marriage. The results show that people in same-sex couples who consider themselves married (although they could not legally marry) have worse outcomes than those living in state-years which did allow for same-sex marriage. In particular, the wage penalty for “married” gay men is significantly larger in state-years which did not allow same-sex marriage. Similarly, the lesbian wage premium for married lesbians is smaller in state-years without access to same-sex marriage. There is thus perhaps a penalty for people in couples who think of themselves as married when

the law of the state – and perhaps then also the social and cultural norms of that state – did not allow for same-sex marriage.

Table 6: Sexual Orientation Wage Gap by Marital Status and Gender in State-Years Not Allowing Same-Sex Marriage

Log (Hourly Wage)	Selection			No Selection	
	MLE	MLE	Two-Step	OLS	OLS
Gay Married	-0.059*** 0.022	-0.071*** 0.019	-0.078*** 0.019	-0.040* 0.021	-0.054*** 0.019
Gay Unmarried	0.041*** (0.015)	0.046*** (0.012)	0.046*** (0.012)	0.040*** (0.014)	0.045*** (0.012)
Lesbian Married	0.043** (0.021)	0.047*** (0.017)	0.047*** (0.017)	0.039* (0.021)	0.044** (0.017)
Lesbian Unmarried	0.089*** (0.012)	0.081*** (0.010)	0.083*** (0.011)	0.082*** (0.012)	0.076*** (0.010)
Controls for $X$	Yes	Yes	Yes	Yes	Yes
Population Weights	Yes	No	No	Yes	No

Notes: This table compares gays/lesbians to heterosexuals with the same gender and marital status, living in state-years that did not allow same-sex marriage.. The sample includes 373,389 (1,305) [242,895 (695) full-time working] married heterosexual (gay) men; 40,201 (3,411) [23,313 (2,119) full-time working] unmarried heterosexual (gay) men; 408,672 (1,223) [170,381 (639) full-time working] married heterosexual (lesbian) women; and 39,705 (3,549) [19,815 (2,168) full-time working] unmarried heterosexual (lesbian) women. Standard errors in parentheses. \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ .

The results of the sexual orientation wage gap within unmarried couples in state-years that did not allow same-sex marriage are not as consistent across gender. For men, the sexual orientation wage premium enjoyed by those in unmarried same-sex couples is lower in state-years without same-sex marriage rights. On the other hand, the lesbian wage premium for women in unmarried same-sex couples is *higher* in state-years that did not allow for same-sex marriage. These results speak to the theoretical ambiguity of a wage gap by marital status when one group cannot access marriage. However, it is not clear why the results differ so dramatically by gender.

## 5 Discussion and Conclusion

The main finding in this paper is thus that the sexual orientation wage gap differs by marital status. While there is a gay wage premium in the group of unmarried

men, we find that the gay wage penalty standard in the literature holds only for the group of married men. The lesbian wage premium exists in both the groups of married and unmarried women, but in the overall sample, the lesbian premium is larger in the unmarried group. Marriage therefore seems to come at a cost for same-sex couples. There are several potential explanations for these findings.

First, for people in same-sex couples, being married may open a door for discrimination via disclosure of sexual orientation. Married LGB people may be more likely to be out and open about their same-sex relationship; indeed, many same-sex couples choose to marry because they seek public acceptance of their relationship (Badgett, 2009). If married LGB people are more likely to be “out” at work, then the relative (for women) or absolute (for men) sexual orientation wage penalty for married LGB people could be capturing an effect of discrimination related to sexual orientation disclosure.

Second, it could be that the standard male marriage premium discussed in section 2 is exclusively for heterosexual men. Perhaps the norms or social prescriptions regarding marriage are such that (only) heterosexual men should receive pecuniary benefits from it. This might be the case because for men, the role of being married is aligned with being “the provider” – one who provides *for a woman*. Men who marry other men thus do not fit the ideal of a “married man” and may be penalized for it, as one could model with the framework of identity in economics proposed by Akerlof and Kranton (2000).

In any case, it proved meaningful to study the core question in this research, namely if the sexual orientation wage gap differs by marital status. We found that in the whole sample it does, such that the sexual orientation wage gap is relatively worse for married gays and lesbians than it is for unmarried gays and lesbians. Married lesbians have less of a wage premium than unmarried lesbians, unmarried gay men enjoy a wage premium, and it is only married gay men who have a sexual orientation wage penalty. These distinctions reveal that marital status is a critical component of differentiation when talking about sexual orientation wage gaps. Just as the literature has long distinguished the gender-specific differences (there is a lesbian wage premium but a gay male penalty), this analysis has shown that it is just as important to differentiate the sexual orientation wage gap by marital status.

However, our analysis relied on data from 2013-2015, years in which not every state allowed same-sex couples to marry. We thus conducted a robustness check by splitting the sample into those who lived in state-years that allowed same-sex marriage and those that did not. In state-years allowing same-sex marriage, the story for men remained the same: only married gay men face a wage penalty, while

unmarried gay men enjoy a wage premium. For women, the lesbian wage gap persisted, and the differentiation between the size of the wage premium for married versus unmarried lesbians disappeared. In state-years that did not allow same-sex couples to marry, the wage penalty for married gay men is larger, and the wage premium for married lesbians is smaller.

After 2015, when same-sex marriage rights were applied to all states, it will no longer be necessary to distinguish between those with access to marriage and those without. This institutional change will further affect the availability of data on married and unmarried same-sex couples. Further research should therefore repeat this analysis for later years.

While innovative, the results may not be surprising to readers familiar with this literature. Couples, of course, select into marriage; only certain couples choose to take this step. If the decision to marry is related to unobservable characteristics which also influence wages, then estimates of a wage gap which cannot tease out these differences will of course be biased. But before we could distinguish between married and unmarried same-sex couples, it was not possible to truly compare “apples to apples” – that is, married couples with married couples and unmarried couples with unmarried couples. This improvement to the data is therefore welcome and clearly necessary.

The results of this paper begin to change the narrative of the sexual orientation wage gap, especially for men. It therefore will be important to continue to disentangle the sexual orientation and marital status effects in future research on the economics of sexual orientation.

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# A Appendix: Tables

Table A1: Sexual Orientation Wage Gap, Married Men

	Selection			No Selection	
	(1)	(2)	(3)	(4)	(5)
Log (Hourly Wage)	MLE	MLE	Two-Step	OLS	OLS
<i>Sexual Orientation</i>					
<i>(Omitted: Heterosexual)</i>					
Gay	-0.037*** (0.011)	-0.055*** (0.008)	-0.061*** (0.008)	-0.024** (0.011)	-0.041*** (0.008)
<i>Race</i>					
<i>(Omitted: White)</i>					
Black	-0.196*** (0.003)	-0.199*** (0.003)	-0.202*** (0.003)	-0.191*** (0.003)	-0.195*** (0.003)
Native American	-0.098*** (0.010)	-0.098*** (0.008)	-0.103*** (0.008)	-0.091*** (0.010)	-0.089*** (0.008)
Asian	-0.111*** (0.004)	-0.107*** (0.003)	-0.108*** (0.003)	-0.107*** (0.004)	-0.103*** (0.003)
Other Race	-0.061*** (0.004)	-0.065*** (0.003)	-0.066*** (0.003)	-0.060*** (0.004)	-0.064*** (0.003)
<i>Ethnicity</i>					
Hispanic	-0.131*** (0.003)	-0.127*** (0.002)	-0.125*** (0.002)	-0.135*** (0.003)	-0.131*** (0.002)
<i>Educational Attainment</i>					
<i>(Omitted: Less Than HS)</i>					
High School Diploma	0.156*** (0.004)	0.153*** (0.003)	0.158*** (0.003)	0.148*** (0.004)	0.144*** (0.003)
Some College	0.251*** (0.004)	0.246*** (0.003)	0.252*** (0.003)	0.239*** (0.004)	0.235*** (0.003)
Associate's Degree	0.311*** (0.004)	0.303*** (0.004)	0.310*** (0.004)	0.296*** (0.004)	0.288*** (0.003)
Bachelor's Degree	0.546*** (0.004)	0.539*** (0.003)	0.546*** (0.003)	0.531*** (0.004)	0.525*** (0.003)
Master's Degree	0.748*** (0.005)	0.738*** (0.004)	0.746*** (0.004)	0.731*** (0.005)	0.722*** (0.004)
Professional Degree	1.054*** (0.008)	1.044*** (0.005)	1.043*** (0.005)	1.056*** (0.008)	1.048*** (0.005)
Doctoral Degree	0.988*** (0.007)	0.975*** (0.005)	0.982*** (0.005)	0.974*** (0.007)	0.961*** (0.005)
<i>Other Characteristics</i>					
Potential Experience	0.037*** (0.000)	0.038*** (0.000)	0.039*** (0.000)	0.036*** (0.000)	0.037*** (0.000)
Potential Experience <sup>2</sup>	-0.001***	-0.001***	-0.001***	-0.001***	-0.001***

	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
No English	-0.334***	-0.331***	-0.333***	-0.329***	-0.326***
	(0.005)	(0.004)	(0.004)	(0.005)	(0.004)
Disability	-0.153***	-0.150***	-0.169***	-0.112***	-0.111***
	(0.005)	(0.004)	(0.004)	(0.004)	(0.003)
Number of Children $\leq 5$	0.022***	0.024***	0.024***	0.023***	0.026***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Number of Children 6-18	0.021***	0.022***	0.022***	0.022***	0.023***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Degree of Ruralness	-0.038***	-0.040***	-0.041***	-0.037***	-0.039***
	(0.001)	(0.000)	(0.000)	(0.001)	(0.000)
Census Year 2014	0.001	0.002	0.003*	0.000	0.001
	(0.002)	(0.001)	(0.001)	(0.002)	(0.001)
Census Year 2015	0.010***	0.011***	0.012***	0.008***	0.009***
	(0.002)	(0.001)	(0.001)	(0.002)	(0.001)
Constant	2.028***	2.005***	1.985***	2.071***	2.046***
	(0.014)	(0.011)	(0.011)	(0.014)	(0.011)
<u>Selection Equation</u>					
Log (Retirement Income)	-0.078***	-0.080***	-0.082***		
	(0.001)	(0.001)	(0.001)		
Log (Investment Income)	-0.025***	-0.027***	-0.023***		
	(0.001)	(0.001)	(0.000)		
<i>Sexual Orientation</i>					
<i>(Omitted: Heterosexual)</i>					
Gay	-0.306***	-0.326***	-0.327***		
	(0.020)	(0.016)	(0.016)		
<i>Race</i>					
<i>(Omitted: White)</i>					
Black	-0.120***	-0.116***	-0.112***		
	(0.007)	(0.006)	(0.006)		
Native American	-0.160***	-0.204***	-0.204***		
	(0.021)	(0.016)	(0.016)		
Asian	-0.102***	-0.104***	-0.104***		
	(0.007)	(0.006)	(0.006)		
Other Race	-0.027***	-0.033***	-0.033***		
	(0.009)	(0.007)	(0.007)		
Hispanic	0.082***	0.090***	0.092***		
	(0.007)	(0.005)	(0.005)		
<i>Educational Attainment</i>					
<i>(Omitted: Less Than HS)</i>					
High School Diploma	0.188***	0.206***	0.206***		
	(0.007)	(0.006)	(0.006)		
Some College	0.278***	0.282***	0.281***		

	(0.007)	(0.006)	(0.006)		
Associate's Degree	0.385***	0.388***	0.386***		
	(0.009)	(0.007)	(0.007)		
Bachelor's Degree	0.393***	0.384***	0.376***		
	(0.008)	(0.006)	(0.006)		
Master's Degree	0.489***	0.477***	0.468***		
	(0.009)	(0.007)	(0.007)		
Professional Degree	0.040***	0.017*	0.003		
	(0.011)	(0.009)	(0.009)		
Doctoral Degree	0.424***	0.422***	0.411***		
	(0.013)	(0.011)	(0.011)		
<i>Other Characteristics</i>					
Potential Experience	0.016***	0.019***	0.018***		
	(0.001)	(0.001)	(0.001)		
Potential Experience <sup>2</sup>	-0.001***	-0.001***	-0.001***		
	(0.000)	(0.000)	(0.000)		
No English	-0.116***	-0.119***	-0.116***		
	(0.010)	(0.008)	(0.008)		
Disability	-0.758***	-0.735***	-0.733***		
	(0.006)	(0.005)	(0.005)		
Number of Children $\leq 5$	-0.021***	-0.022***	-0.023***		
	(0.003)	(0.002)	(0.002)		
Number of Children 6-18	-0.015***	-0.017***	-0.017***		
	(0.002)	(0.001)	(0.001)		
Degree of Ruralness	-0.026***	-0.029***	-0.029***		
	(0.001)	(0.001)	(0.001)		
Census Year 2014	0.024***	0.020***	0.020***		
	(0.004)	(0.003)	(0.003)		
Census Year 2015	0.049***	0.041***	0.041***		
	(0.004)	(0.003)	(0.003)		
Constant	0.551***	0.567***	0.578***		
	(0.019)	(0.015)	(0.015)		
<hr/>					
Weights	Yes	No	No	Yes	No
Lambda	0.086***	0.083***	0.125***		
Rho	0.174***	0.167***	0.248***		

Notes: The sample includes 1,071,475 (698,654 full-time working) married men.

Standard errors in parentheses. \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ .

Table A2: Sexual Orientation Wage Gap, Unmarried Men

	Selection			No Selection	
	(1) MLE	(2) MLE	(3) Two-Step	(4) OLS	(5) OLS
<i>Log (Hourly Wage)</i>					
<i>Sexual Orientation</i> (Omitted: Heterosexual)					
Gay	0.050*** (0.009)	0.048*** (0.007)	0.046*** (0.007)	0.052*** (0.008)	0.049*** (0.007)
<i>Race</i> (Omitted: White)					
Black	-0.176*** (0.008)	-0.179*** (0.007)	-0.196*** (0.008)	-0.163*** (0.008)	-0.166*** (0.007)
Native American	-0.144*** (0.026)	-0.144*** (0.018)	-0.172*** (0.019)	-0.131*** (0.026)	-0.123*** (0.018)
Asian	-0.022 (0.015)	-0.020* (0.011)	-0.020* (0.012)	-0.022 (0.015)	-0.020* (0.011)
Other Race	-0.044*** (0.009)	-0.052*** (0.008)	-0.055*** (0.008)	-0.042*** (0.009)	-0.050*** (0.007)
<i>Ethnicity</i>					
Hispanic	-0.100*** (0.008)	-0.088*** (0.006)	-0.078*** (0.007)	-0.106*** (0.007)	-0.095*** (0.006)
<i>Educational Attainment</i> (Omitted: Less Than HS)					
High School Diploma	0.193*** (0.009)	0.185*** (0.008)	0.208*** (0.009)	0.178*** (0.009)	0.169*** (0.007)
Some College	0.289*** (0.010)	0.284*** (0.008)	0.312*** (0.010)	0.270*** (0.009)	0.264*** (0.008)
Associate's Degree	0.371*** (0.012)	0.365*** (0.010)	0.402*** (0.013)	0.346*** (0.011)	0.339*** (0.009)
Bachelor's Degree	0.575*** (0.012)	0.572*** (0.010)	0.610*** (0.012)	0.549*** (0.011)	0.545*** (0.009)
Master's Degree	0.743*** (0.015)	0.747*** (0.012)	0.784*** (0.014)	0.717*** (0.015)	0.720*** (0.011)
Professional Degree	0.961*** (0.030)	0.959*** (0.019)	0.981*** (0.019)	0.946*** (0.030)	0.945*** (0.018)
Doctoral Degree	1.046*** (0.029)	1.024*** (0.020)	1.060*** (0.022)	1.021*** (0.029)	0.998*** (0.019)
<i>Other Characteristics</i>					
Potential Experience	0.036*** (0.001)	0.036*** (0.001)	0.037*** (0.001)	0.035*** (0.001)	0.036*** (0.001)
Potential Experience <sup>2</sup>	-0.001*** (0.000)	-0.001*** (0.000)	-0.001*** (0.000)	-0.001*** (0.000)	-0.001*** (0.000)
No English	-0.252***	-0.263***	-0.255***	-0.256***	-0.269***

	(0.012)	(0.010)	(0.011)	(0.012)	(0.010)
Disability	-0.198***	-0.184***	-0.258***	-0.143***	-0.131***
	(0.015)	(0.013)	(0.019)	(0.013)	(0.009)
Number of Children $\leq 5$	-0.019***	-0.019***	-0.025***	-0.015***	-0.015***
	(0.004)	(0.003)	(0.004)	(0.004)	(0.003)
Number of Children 6-18	-0.001	-0.003	-0.004*	-0.001	-0.003
	(0.003)	(0.002)	(0.002)	(0.003)	(0.002)
Degree of Ruralness	-0.033***	-0.033***	-0.036***	-0.031***	-0.032***
	(0.002)	(0.001)	(0.001)	(0.002)	(0.001)
Census Year 2014	0.003	0.002	0.005	0.001	0.000
	(0.005)	(0.004)	(0.004)	(0.005)	(0.004)
Census Year 2015	0.009	0.010**	0.016***	0.004	0.006
	(0.005)	(0.004)	(0.005)	(0.005)	(0.004)
Constant	1.914***	1.870***	1.783***	1.977***	1.933***
	(0.048)	(0.035)	(0.039)	(0.047)	(0.033)
<u>Selection Equation</u>					
Log (Retirement Income)	-0.078***	-0.080***	-0.082***		
	(0.003)	(0.003)	(0.003)		
Log (Investment Income)	-0.022***	-0.022***	-0.016***		
	(0.003)	(0.002)	(0.002)		
<i>Sexual Orientation</i>					
<i>(Omitted: Heterosexual)</i>					
Gay	-0.033*	-0.025*	-0.026*		
	(0.017)	(0.014)	(0.014)		
<i>Race</i>					
<i>(Omitted: White)</i>					
Black	-0.234***	-0.238***	-0.236***		
	(0.017)	(0.013)	(0.013)		
Native American	-0.220***	-0.347***	-0.348***		
	(0.047)	(0.032)	(0.032)		
Asian	0.002	-0.006	-0.007		
	(0.032)	(0.025)	(0.025)		
Other Race	-0.038*	-0.044***	-0.044***		
	(0.020)	(0.016)	(0.016)		
Hispanic	0.131***	0.131***	0.133***		
	(0.017)	(0.013)	(0.013)		
<i>Educational Attainment</i>					
<i>(Omitted: Less Than HS)</i>					
High School Diploma	0.261***	0.289***	0.289***		
	(0.017)	(0.013)	(0.013)		
Some College	0.346***	0.373***	0.372***		
	(0.018)	(0.014)	(0.014)		
Associate's Degree	0.476***	0.499***	0.497***		

	(0.023)	(0.018)	(0.018)		
Bachelor's Degree	0.518***	0.526***	0.519***		
	(0.020)	(0.016)	(0.016)		
Master's Degree	0.523***	0.539***	0.528***		
	(0.027)	(0.022)	(0.022)		
Professional Degree	0.320***	0.314***	0.298***		
	(0.040)	(0.032)	(0.032)		
Doctoral Degree	0.523***	0.541***	0.524***		
	(0.051)	(0.042)	(0.042)		
<i>Other Characteristics</i>					
Potential Experience	0.008***	0.008***	0.008***		
	(0.002)	(0.001)	(0.001)		
Potential Experience <sup>2</sup>	-0.000***	-0.000***	-0.000***		
	(0.000)	(0.000)	(0.000)		
No English	0.060**	0.094***	0.096***		
	(0.026)	(0.021)	(0.021)		
Disability	-0.865***	-0.845***	-0.843***		
	(0.018)	(0.014)	(0.014)		
Number of Children $\leq 5$	-0.074***	-0.070***	-0.070***		
	(0.008)	(0.007)	(0.007)		
Number of Children 6-18	-0.007	-0.012***	-0.012***		
	(0.006)	(0.005)	(0.005)		
Degree of Ruralness	-0.036***	-0.032***	-0.032***		
	(0.004)	(0.003)	(0.003)		
Census Year 2014	0.042***	0.037***	0.037***		
	(0.012)	(0.009)	(0.009)		
Census Year 2015	0.086***	0.079***	0.079***		
	(0.012)	(0.009)	(0.009)		
Constant	0.265***	0.263***	0.269***		
	(0.060)	(0.045)	(0.045)		
Weights	Yes	No	No	Yes	No
Lambda	0.096***	0.096***	0.228***		
Rho	0.204***	0.201***	0.455***		

Notes: The sample includes 126,243 (75,009 full-time working) unmarried men.

Standard errors in parentheses. \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ .



Table A3: Sexual Orientation Wage Gap, Married Women

	Selection			No Selection	
	(1) MLE	(2) MLE	(3) Two-Step	(4) OLS	(5) OLS
<i>Log (Hourly Wage)</i>					
<i>Sexual Orientation</i> (Omitted: <i>Heterosexual</i> )					
Lesbian	0.051*** (0.009)	0.054*** (0.007)	0.054*** (0.007)	0.046*** (0.009)	0.050*** (0.007)
<i>Race</i> (Omitted: <i>White</i> )					
Black	-0.085*** (0.004)	-0.090*** (0.003)	-0.090*** (0.003)	-0.089*** (0.003)	-0.094*** (0.003)
Native American	-0.043*** (0.011)	-0.039*** (0.008)	-0.039*** (0.008)	-0.043*** (0.011)	-0.040*** (0.008)
Asian	-0.062*** (0.004)	-0.058*** (0.003)	-0.059*** (0.003)	-0.061*** (0.004)	-0.058*** (0.003)
Other Race	-0.038*** (0.005)	-0.038*** (0.004)	-0.038*** (0.004)	-0.038*** (0.005)	-0.038*** (0.004)
<i>Ethnicity</i>					
Hispanic	-0.092*** (0.003)	-0.089*** (0.003)	-0.088*** (0.003)	-0.094*** (0.003)	-0.090*** (0.003)
<i>Educational Attainment</i> (Omitted: <i>Less Than HS</i> )					
High School Diploma	0.126*** (0.005)	0.124*** (0.004)	0.125*** (0.005)	0.121*** (0.005)	0.121*** (0.004)
Some College	0.224*** (0.006)	0.218*** (0.005)	0.219*** (0.005)	0.218*** (0.005)	0.214*** (0.004)
Associate's Degree	0.306*** (0.006)	0.302*** (0.005)	0.304*** (0.005)	0.298*** (0.006)	0.297*** (0.005)
Bachelor's Degree	0.528*** (0.006)	0.526*** (0.005)	0.527*** (0.005)	0.520*** (0.006)	0.520*** (0.005)
Master's Degree	0.756*** (0.007)	0.752*** (0.005)	0.754*** (0.006)	0.745*** (0.006)	0.745*** (0.005)
Professional Degree	1.012*** (0.009)	1.004*** (0.007)	1.005*** (0.007)	1.003*** (0.009)	0.997*** (0.006)
Doctoral Degree	1.010*** (0.009)	1.003*** (0.007)	1.004*** (0.007)	0.997*** (0.008)	0.993*** (0.006)
<i>Other Characteristics</i>					
Potential Experience	0.027*** (0.000)	0.026*** (0.000)	0.026*** (0.000)	0.026*** (0.000)	0.026*** (0.000)
Potential Experience <sup>2</sup>	-0.000*** (0.000)	-0.000*** (0.000)	-0.000*** (0.000)	-0.000*** (0.000)	-0.000*** (0.000)
No English	-0.304***	-0.306***	-0.307***	-0.296***	-0.301***

	(0.007)	(0.006)	(0.006)	(0.007)	(0.005)
Disability	-0.104***	-0.103***	-0.104***	-0.091***	-0.094***
	(0.006)	(0.005)	(0.005)	(0.004)	(0.003)
Number of Children $\leq 5$	0.040***	0.043***	0.042***	0.045***	0.047***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.001)
Number of Children 6-18	0.003*	0.004***	0.004***	0.006***	0.007***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Degree of Ruralness	-0.043***	-0.044***	-0.044***	-0.043***	-0.044***
	(0.001)	(0.000)	(0.000)	(0.001)	(0.000)
Census Year 2014	-0.002	-0.002	-0.002	-0.002	-0.002
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Census Year 2015	-0.004*	-0.002	-0.002	-0.004**	-0.002
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Constant	2.084***	2.087***	2.084***	2.112***	2.107***
	(0.025)	(0.018)	(0.019)	(0.024)	(0.017)
<u>Selection Equation</u>					
Log (Retirement Income)	-0.098***	-0.099***	-0.099***		
	(0.001)	(0.001)	(0.001)		
Log (Investment Income)	-0.013***	-0.014***	-0.014***		
	(0.001)	(0.001)	(0.001)		
<i>Sexual Orientation</i>					
<i>(Omitted: Heterosexual)</i>					
Lesbian	0.336***	0.304***	0.303***		
	(0.019)	(0.016)	(0.016)		
<i>Race</i>					
<i>(Omitted: White)</i>					
Black	0.285***	0.276***	0.277***		
	(0.007)	(0.006)	(0.006)		
Native American	0.041**	0.054***	0.054***		
	(0.020)	(0.015)	(0.015)		
Asian	-0.072***	-0.045***	-0.045***		
	(0.007)	(0.005)	(0.005)		
Other Race	0.014*	0.009	0.010		
	(0.008)	(0.007)	(0.007)		
Hispanic	0.068***	0.069***	0.069***		
	(0.006)	(0.005)	(0.005)		
<i>Educational Attainment</i>					
<i>(Omitted: Less Than HS)</i>					
High School Diploma	0.212***	0.226***	0.226***		
	(0.008)	(0.006)	(0.006)		
Some College	0.313***	0.331***	0.331***		
	(0.008)	(0.006)	(0.006)		
Associate's Degree	0.431***	0.444***	0.443***		

	(0.009)	(0.007)	(0.007)		
Bachelor's Degree	0.431***	0.431***	0.431***		
	(0.008)	(0.007)	(0.007)		
Master's Degree	0.604***	0.599***	0.599***		
	(0.009)	(0.007)	(0.007)		
Professional Degree	0.543***	0.534***	0.533***		
	(0.012)	(0.010)	(0.010)		
Doctoral Degree	0.758***	0.759***	0.758***		
	(0.014)	(0.012)	(0.012)		
<i>Other Characteristics</i>					
Potential Experience	0.020***	0.019***	0.019***		
	(0.001)	(0.001)	(0.001)		
Potential Experience <sup>2</sup>	-0.001***	-0.001***	-0.001***		
	(0.000)	(0.000)	(0.000)		
No English	-0.385***	-0.355***	-0.355***		
	(0.009)	(0.008)	(0.008)		
Disability	-0.636***	-0.627***	-0.627***		
	(0.006)	(0.005)	(0.005)		
Number of Children $\leq 5$	-0.302***	-0.307***	-0.307***		
	(0.003)	(0.002)	(0.002)		
Number of Children 6-18	-0.172***	-0.185***	-0.185***		
	(0.002)	(0.001)	(0.001)		
Degree of Ruralness	0.004***	0.005***	0.005***		
	(0.001)	(0.001)	(0.001)		
Census Year 2014	0.006	0.005*	0.005*		
	(0.004)	(0.003)	(0.003)		
Census Year 2015	0.015***	0.014***	0.014***		
	(0.004)	(0.003)	(0.003)		
Constant	-0.307***	-0.274***	-0.273***		
	(0.017)	(0.014)	(0.014)		
<hr/>					
Weights	Yes	No	No	Yes	No
Lambda	0.027***	0.020***	0.023***		
Rho	0.060***	0.044***	0.052***		

Notes: The sample includes 1,173,449 (487,263 full-time working) married women.  
Standard errors in parentheses. \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ .

Table A4: Sexual Orientation Wage Gap, Unmarried Women

	Selection			No Selection	
	(1) MLE	(2) MLE	(3) Two-Step	(4) OLS	(5) OLS
<i>Log (Hourly Wage)</i>					
<i>Sexual Orientation</i> (Omitted: Heterosexual)					
Lesbian	0.067*** (0.008)	0.060*** (0.006)	0.063*** (0.006)	0.063*** (0.008)	0.056*** (0.006)
<i>Race</i> (Omitted: White)					
Black	-0.088*** (0.008)	-0.095*** (0.007)	-0.095*** (0.007)	-0.088*** (0.008)	-0.095*** (0.007)
Native American	-0.066** (0.026)	-0.052*** (0.017)	-0.059*** (0.018)	-0.061** (0.026)	-0.043** (0.017)
Asian	0.030** (0.013)	0.021** (0.010)	0.022** (0.010)	0.028** (0.013)	0.020** (0.010)
Other Race	-0.038*** (0.010)	-0.028*** (0.008)	-0.029*** (0.008)	-0.037*** (0.010)	-0.028*** (0.008)
<i>Ethnicity</i>					
Hispanic	-0.065*** (0.008)	-0.068*** (0.006)	-0.066*** (0.006)	-0.067*** (0.007)	-0.070*** (0.006)
<i>Educational Attainment</i> (Omitted: Less Than HS)					
High School Diploma	0.182*** (0.013)	0.179*** (0.011)	0.200*** (0.013)	0.160*** (0.012)	0.157*** (0.010)
Some College	0.282*** (0.014)	0.279*** (0.012)	0.305*** (0.014)	0.254*** (0.012)	0.252*** (0.010)
Associate's Degree	0.377*** (0.015)	0.368*** (0.013)	0.400*** (0.017)	0.342*** (0.013)	0.334*** (0.011)
Bachelor's Degree	0.597*** (0.016)	0.600*** (0.014)	0.636*** (0.018)	0.557*** (0.013)	0.561*** (0.011)
Master's Degree	0.784*** (0.017)	0.784*** (0.015)	0.821*** (0.019)	0.744*** (0.014)	0.744*** (0.012)
Professional Degree	0.938*** (0.026)	0.934*** (0.019)	0.965*** (0.021)	0.903*** (0.025)	0.902*** (0.017)
Doctoral Degree	0.970*** (0.026)	0.989*** (0.020)	1.027*** (0.024)	0.930*** (0.025)	0.950*** (0.019)
<i>Other Characteristics</i>					
Potential Experience	0.029*** (0.001)	0.031*** (0.001)	0.031*** (0.001)	0.029*** (0.001)	0.030*** (0.001)
Potential Experience <sup>2</sup>	-0.000*** (0.000)	-0.000*** (0.000)	-0.000*** (0.000)	-0.000*** (0.000)	-0.000*** (0.000)
No English	-0.304***	-0.315***	-0.332***	-0.285***	-0.296***

	(0.016)	(0.014)	(0.015)	(0.016)	(0.014)
Disability	-0.166***	-0.169***	-0.211***	-0.123***	-0.126***
	(0.015)	(0.013)	(0.018)	(0.012)	(0.009)
Number of Children $\leq 5$	-0.018***	-0.018***	-0.031***	-0.004	-0.003
	(0.006)	(0.005)	(0.007)	(0.005)	(0.004)
Number of Children 6-18	-0.013***	-0.013***	-0.015***	-0.011***	-0.011***
	(0.003)	(0.002)	(0.002)	(0.003)	(0.002)
Degree of Ruralness	-0.045***	-0.047***	-0.049***	-0.044***	-0.046***
	(0.002)	(0.001)	(0.001)	(0.002)	(0.001)
Census Year 2014	-0.001	0.001	0.001	-0.001	0.000
	(0.005)	(0.004)	(0.004)	(0.005)	(0.004)
Census Year 2015	-0.008	-0.003	-0.002	-0.009*	-0.003
	(0.005)	(0.004)	(0.004)	(0.005)	(0.004)
Constant	1.851***	1.853***	1.781***	1.929***	1.928***
	(0.065)	(0.048)	(0.053)	(0.063)	(0.045)
<u>Selection Equation</u>					
Log (Retirement Income)	-0.094***	-0.092***	-0.093***		
	(0.003)	(0.003)	(0.003)		
Log (Investment Income)	-0.023***	-0.024***	-0.020***		
	(0.003)	(0.002)	(0.002)		
<i>Sexual Orientation</i>					
<i>(Omitted: Heterosexual)</i>					
Lesbian	0.106***	0.102***	0.102***		
	(0.018)	(0.014)	(0.014)		
<i>Race</i>					
<i>(Omitted: White)</i>					
Black	-0.008	-0.024	-0.022		
	(0.018)	(0.015)	(0.015)		
Native American	-0.099**	-0.171***	-0.171***		
	(0.046)	(0.032)	(0.032)		
Asian	0.051*	0.014	0.014		
	(0.029)	(0.022)	(0.022)		
Other Race	-0.022	-0.015	-0.015		
	(0.020)	(0.016)	(0.016)		
Hispanic	0.061***	0.042***	0.043***		
	(0.017)	(0.013)	(0.013)		
<i>Educational Attainment</i>					
<i>(Omitted: Less Than HS)</i>					
High School Diploma	0.446***	0.443***	0.442***		
	(0.020)	(0.016)	(0.016)		
Some College	0.604***	0.581***	0.580***		
	(0.020)	(0.016)	(0.016)		
Associate's Degree	0.771***	0.743***	0.742***		

	(0.023)	(0.019)	(0.019)		
Bachelor's Degree	0.932***	0.889***	0.885***		
	(0.022)	(0.018)	(0.018)		
Master's Degree	0.957***	0.921***	0.916***		
	(0.026)	(0.021)	(0.021)		
Professional Degree	0.818***	0.738***	0.729***		
	(0.041)	(0.034)	(0.033)		
Doctoral Degree	0.984***	0.945***	0.938***		
	(0.049)	(0.041)	(0.041)		
<i>Other Characteristics</i>					
Potential Experience	0.014***	0.016***	0.016***		
	(0.002)	(0.001)	(0.001)		
Potential Experience <sup>2</sup>	-0.000***	-0.000***	-0.000***		
	(0.000)	(0.000)	(0.000)		
No English	-0.413***	-0.386***	-0.385***		
	(0.027)	(0.022)	(0.022)		
Disability	-0.923***	-0.918***	-0.917***		
	(0.018)	(0.014)	(0.014)		
Number of Children $\leq 5$	-0.316***	-0.315***	-0.316***		
	(0.009)	(0.007)	(0.007)		
Number of Children 6-18	-0.052***	-0.057***	-0.056***		
	(0.006)	(0.005)	(0.005)		
Degree of Ruralness	-0.038***	-0.042***	-0.041***		
	(0.004)	(0.003)	(0.003)		
Census Year 2014	-0.008	0.008	0.008		
	(0.012)	(0.009)	(0.009)		
Census Year 2015	0.010	0.013	0.013		
	(0.012)	(0.009)	(0.009)		
Constant	-0.480***	-0.382***	-0.378***		
	(0.060)	(0.047)	(0.047)		
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Weights	Yes	No	No	Yes	No
Lambda	0.068***	0.069***	0.135***		
Rho	0.157***	0.159***	0.304***		

Notes: The sample includes 125,758 (64,176 full-time working) unmarried women.

Standard errors in parentheses. \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ .

## B Appendix: Data Information

When the ACS first started in 2000, same-sex marriage was not legal in any state in the US. However, there were individuals who reported being in a same-sex spousal relationship on the survey; the number of reported same-sex married couples in the ACS has always exceeded the number of marriage licenses issued, especially before 2008 (O’Connell and Lofquist, 2009). There are several explanations for why there are more married same-sex couples in the ACS data than there actually were in society:

1. Couples registered as domestic partners or living in a recognized civil union may have considered “spouse” as being the closest category from which to choose to describe their relationship.
2. Couples married in a church or religious ceremonies who were not legally recognized by any state might have still considered themselves married.
3. Couples might have identified as spouses, less from a legal but rather from a “social view,” e.g. if they had been living together for a long time, or have “spousal” like characteristics, such as living with children or co-owning a house.
4. Opposite-sex couples who are legally married may have made an error in the marking of their own or their spouse’s sex on the questionnaire (O’Connell and Lofquist, 2009).

The first three issues are problematic for the identification of the marital status of same-sex couples. In particular, as discussed in the conclusion of this paper, not all same-sex couples who would have liked to marry or who have characteristics similar to different-sex married couples *could* have legally married, since same-sex marriage was only available nation-wide after June 26, 2015. We are not able to identify these couples and do not know whether they considered themselves spouses or unmarried partners in the ACS. (If it were possible to identify them, it would still be questionable whether “spouses” who are not *legally* married should be considered (un)married when they do not have all legal rights marriage provides.) Therefore, the same-sex married couples observed in the data up through 2015 are likely a select group of same-sex couples. Starting with the 2016 data, this will no longer be an issue, because all same-sex couples will have the opportunity to marry.<sup>7</sup>

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<sup>7</sup>The ACS does not report on the month and date of the interview; if it did, it would already be possible to observe couples before and after the date in 2015 when all same-sex couples were given

To address the fourth issue, O’Connell and Gooding (2006), Black et al. (2007), and Gates and Steinberger (2011) find that miscoded opposite-sex couples could account for a substantial share of same-sex couples in the data. Given the coding and processing schemes in the ACS, there are ways to address this problem. The editing process of three variables in particular – sex, relationship to the householder, and marital status – can help us tease out which couples in the LG sample are truly same-sex couples instead of miscoded different-sex couples. Some background information on the Census’s editing processes will help illuminate how to minimize the contamination of the sample of same-sex couples.

First, if a person’s value for the “sex” item (which is sequentially the first item to be edited) is missing, their first name will be used to allocate their sex if the probability of being either male or female is higher than 90 or 95 percent (depending on the year of data) based on an overall population index (Ruggles et al., 2015). Otherwise, their sex will be assigned as female (male) if they live with a male (female) spouse or if the value for having had a child in the past year is non-missing. Thus, couples in which at least one person has an edited/flagged value for sex are potentially problematic.

The second item to be reviewed and potentially edited is the “relationship to householder” category. These edits take place in one of two instances. First, based on DOMA, the Census Bureau changed the “relationship to householder” of all partners who reported being the “spouse” of the householder to being instead their “unmarried partner” up until 2013. Unfortunately, since this procedure was considered a “logical” edit, the ACS did not include an allocation flag (a variable indicating that an original response was altered) for this change of the “relationship to householder” variable in the public use data. It is therefore not possible to explicitly identify same-sex couples who considered their relationship to each other as “spouses” and who subsequently had their relationship type changed to “unmarried partners” up until 2013. (This is the issue in Antecol et al. (2008) and Daneshvary et al. (2009) discussed in footnote 3 on page 5. As Black et al. (2000, footnote 5) say, in dropping couples in which either person has an allocated “relationship to householder” variable, “we recognize that [in so doing] we also exclude some households with gay and lesbian partnerships in which an individual was identified as the ‘spouse’ of a same-sex householder.”) A second instance of changes to the “relationship to householder” variable occurs when either (1) an unmarried partner or their reference person’s marital status is “married” or (2) a person’s “relationship

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access to marriage. Since it does not, we can only know that all couples in the forthcoming 2016 data had access to marriage.



to householder” is missing. In the case of these changes – which have continued to occur after 2013 – the Census Bureau issues an allocation flag. In either of these cases, couples which seem to be same-sex could indeed be different-sex.

In a final stage, the “marital status” variable will be changed to be consistent with the final edited “relationship to householder” variable (if necessary). Additionally, if a spouse’s marital status is missing or reported as something other than “married,” it will be replaced with “married” and marked with an allocation flag (before 2013, this was only applicable for different-sex spouses). An allocation flag on any of these three variables is therefore associated with some concern that the couple in question is included in the same-sex sample, but is actually different-sex.

Indeed, using 2013 ACS data and the 2010 Census name index, Lofquist (2015) finds that same-sex married couples with missing data on the sex and/or relationship item are less likely to actually be same-sex spouses than same-sex married couples without missing data and that these two groups differ in characteristics such as household income, education, race and ethnicity, or age. This evidence supports our decision to exclude same-sex couples with allocated values on either partner’s sex and/or relationship.

Furthermore, Lofquist (2015)’s findings suggest that even in the 2013 ACS, the number of married same-sex couples is still over-estimated. She analyzes whether the edited sex of married same-sex couples matches the sex they would be assigned based on the 2010 Census name index and finds that 16 percent of all married same-sex couples in the sample are likely opposite-sex couples with a miscoded sex value. This share is significantly lower for internet responses (8%) than for mail-in (26%) and CATI/CAPI responses (17%). Considering that ACS respondents have been moving toward using the internet response mode since its implementation in 2013, the number of miscoded opposite-sex couples could potentially continue to decrease in future survey years.

Given these data collection and processing procedures, we exclude couples with allocated values on either partner’s sex or relationship status. Further, we drop households with an allocation flag on the marital status variable if the survey was mailed in or submitted via the internet, but not if it was completed via CAPI/CATI (since in the latter case, there was a built-in check for the interviewer to confirm that the couple is indeed same-sex).