Self-Employment, Earnings, and Sexual Orientation

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Abstract

Although many studies document differences by sexual orientation in earnings and other labor-market outcomes, little is known about differences in self-employment. Our study contributes to both the self-employment literature and sexual-orientation literature by analyzing differences in self-employment rates and earnings by sexual orientation. Gay men are less likely to be self-employed than married men, whereas lesbians are equally likely to be self-employed as married women. We find that gay men earn less than married men. We do find, however, that for those gay men who are self-employed, there is little evidence of a further earnings penalty, at least among full-time workers. Lesbians earn at least as much as married women but receive no further earnings premium – or penalty – by being self-employed, again among full-time workers.

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1. Introduction

Economists have long studied differences in earnings based on demographic traits such as gender or race. More recently, research has expanded in this area to study differences in self-employment. For example, many researchers investigate why blacks and Hispanics have lower earnings than whites, followed by more recent research on racial and ethnic differences in self-employment. We provide novel results on whether sexual orientation is correlated with the probability of being self-employed and whether a wage penalty or premium is associated with self-employment for gay men and lesbians. We evaluate four potential explanations for differences in self-employment rates and/or earnings, although we do not have sufficiently detailed data to distinguish among the explanations.

Using 2007-2011 American Community Survey data on cohabiting couples, we find that gay men have lower self-employment rates of approximately one percentage point, but we find little difference in the likelihood of self-employment for lesbians compared to married women.

We also find that self-employment and being a gay man are associated with lower earnings, whereas being a lesbian is associated with higher earnings. When we interact sexual orientation and self-employment to identify a marginal wage penalty or premium for being a self-employed gay man or lesbian, we find a further earnings penalty associated with self-employment for gay men in the sample of all workers, but this effect disappears when we limit the sample to full-time workers.

The United States government devotes substantial resources to encourage small-business ownership by under-represented groups, including women, minorities, and veterans. Many programs are funded through the Small Business Association (SBA). Our findings suggest that gay men are also under-represented in self-employment, so perhaps the SBA should expand its current programs to include gay men as under-represented minorities.

2. Literature Review

Many studies that consider the effects of sexual orientation on economic outcomes focus on wage/salary earnings, as illustrated by the meta-analysis in Klawitter (2015). The majority of previous empirical studies of earnings use data from either the decennial Census, Current Population Survey (CPS), or General Social Survey (GSS). The studies that use couples in the Census or CPS typically find that gay men earn less than heterosexual men, with the magnitude ranging from 15-30 percent less than married men (Allegretto and Arthur 2001; Antecol et al. 2008; Clain and Leppel 2001; Elmslie and Tebaldi 2007). Antecol et al. (2008) focus on human capital accumulation and occupational sorting, but they find that neither explains the wage penalty for gay men.

Studies using the GSS are not restricted to couples because the GSS asks questions of single people about their sexual experiences, but the GSS has much smaller samples of gay men and lesbians. GSS-based studies find that gay men earn roughly 10 to 30 percent less than heterosexual men (Badgett 1995, 2001; Berg and Lien 2002; Black et al. 2003; Blandford 2003; Cushing-Daniels and Yeung 2009; Zavodny 2008).

Most empirical studies find that lesbians earn more than heterosexual women, with the magnitude ranging from 1-10 percent using Census data (Antecol et al. 2008; Clain and Leppel 2001; Jepsen 2007) and 20-35 percent using GSS data (Berg and Lien 2002; Black et al. 2003; Blandford 2003). A few studies find no statistical difference in earnings (Elmslie and Tebaldi 2007; Badgett 1995, 2001). Antecol et al. (2008) explain the earnings premium for lesbian women based on human capital investment, usually formal education, rather than occupational sorting.

Family dynamics may play a key role in self-employment among married and cohabiting partners. From the sexual orientation literature, a theory that same-sex couples pool resources may apply to our research if pooling resources enables individuals to pursue

lower-paid jobs such as working part-time, being self-employed, or both. From the self-employment literature, Wellington (2006) and Gurley-Calvez et al. (2009) discuss a flexibility theory where people, usually married women, may enter self-employment in order to have greater flexibility to balance work and home responsibilities. An open question is whether we observe differences between lesbian and heterosexual women in couples with respect to self-employment patterns.

Aldén et al. (2015) study the effects of registered partnerships for gay male couples and lesbian couples in Sweden. Marriage and registered partnerships confer co-ownership of marital property, meaning that the financially-disadvantaged partner gains from the union, whereas the more financially-advantaged partner experiences a loss similar to a tax. Aldén et al. (2015) find different outcomes for gay male couples and lesbian couples. For gay men, the percentage of couples where both members work decreases after entering a registered partnership; for lesbians, the percentage of couples where both members work increases. There is no significant change in the presence of children after the union for gay men, so the authors conclude that gay men enter partnerships to pool financial resources. For lesbians, fertility increases after entry into the unions, so lesbians appear to enter partnerships to form families.

Gurley-Calvez et al. (2009) suggest that work-life balance may be encouraging heterosexual women to choose self-employment to gain greater flexibility of hours worked rather than choosing it to maximize earnings. Using American Time Use Study data, they find that self-employed women work fewer average hours than wage-and-salary women. For women with children, self-employed women spend more hours caring for children than wage-and-salary women. Perhaps their most interesting findings focus on secondary child care, or care provided to a child in the household at the same time as the adult is engaging in

another activity such as work. Self-employed women spend the most time on secondary child care, even after the authors control for a variety of other explanatory factors.

Wellington (2006) finds that the presence of young children increases the probability that a married woman is self-employed. Wellington (2006) also addresses the flexibility hypothesis using Consumer Population Survey data, National Longitudinal Survey data, and National Longitudinal Survey of Youth data on young, married, white women in the late 1970s, 1980s, and 1990s. She finds that married women with children are more likely to be self-employed, which is consistent with a theory that married women with children choose self-employment as a way to balance work and family life.

Differences in bargaining power within couples, which are related to household specialization, are another potential explanation for earnings differences by sexual orientation. Grossbard-Shechtman (1984) models one member of a partnership as transferring access to earnings to the partner who performs more household services thorough a Quasi Wage Transfer. Grossbard and Jepsen (2008) apply bargaining theory to same-sex couples, suggesting that Quasi Wage Transfers are less essential to lesbians than gay men when forming couples, which may explain some of the earnings differences across couple types. Using data from the 2000 Census, Oreffice (2011) finds that among gay, lesbian, and heterosexual but unmarried couples, the partner who is "relatively young" and richer supplies less labor to the market, which is consistent with that partner having more power in the relationship. Among married couples, the older and richer partner supplies less labor to the market.

Several studies consider U.S. rates of self-employment and compare the earnings of self-employed persons to the earnings of wage-and-salary workers. These studies focus on comparisons between men and women and between whites and minorities. Using data from the 2000 CPS and 2006 American Community Survey (ACS), Blanchflower (2009) finds that

self-employment rates for minorities and women are lower than self-employment rates for nonminorities and men, respectively. About 10 percent of U.S. workers are self-employed. About 13 percent of men are self-employed, whereas only 7 percent of women are self-employed. Only 5 percent of blacks are self-employed.

Many studies find that the following characteristics are positively associated with being self-employed: being male, white, older, married, an immigrant, having higher levels of education, having higher asset levels, and having a parent who is self-employed (Aronson 1991; Devine 1994; Fairlie and Meyer 1997). Broussard et al. (2015) find that married, self-employed men have slightly more children than non-self-employed married men, a result consistent with the idea that self-employed people want more children to increase the likelihood of passing their business on to their children.

Leppel (2016) is the only paper of which we are aware that looks at the relationship between sexual orientation and self-employment. Specifically, Leppel estimates multinomial logit models separately by sexual orientation and sex to compare the determinants of wage-and-salary employment with the other employment statuses of self-employment, unemployment, or not being in the labor market. She also looks at variation in self-employment across occupations. Using 2012 American Community Survey data, Leppel (2016) finds that non-labor income is a positive predictor of self-employment status, as well as significant differences in occupation by sexual orientation and sex.

We expand the previous analyses that consider differences in self-employment rates and earnings based on gender and minority status to sexual orientation. Our study contributes to both the self-employment literature and sexual orientation literature as one of the first to consider whether gay men and lesbian women are more likely to be self-employed than their heterosexual counterparts and the first to consider whether they experience any earnings gains or penalties associated with self-employment.

3. Data

Data are from the 2007 to 2011 years of the American Community Survey (ACS).[1] By pooling several years,[2] we obtain a reasonable sample of same-sex couples akin to the decennial Census data sets that no longer contain labor-market data needed for this analysis. Like most work on sexual orientation in the U.S., we determine the sexual orientation of an individual through the ACS question about an individual's relationship to the head of household. If a person selects "husband/wife" or "unmarried partner," we assume that the head of household and the spouse/partner are a couple. Because the Census refers to a close personal relationship for unmarried partners, along with a negative stigma still attached to homosexuality for many Americans, the likelihood that roommates misclassify as unmarried partners is unlikely. ACS data allow us to identify four types of cohabiting couples: same-sex male couples, same-sex female couples, unmarried different-sex couples, and married different-sex couples. Among same-sex couples, ACS data for this time period do not distinguish between married and unmarried couples and refer to all same-sex couples as unmarried.

The labor-market variables are as follows. Self-employment is based on the "class of worker" question. Self-employed individuals are those who designate themselves as being self-employed in either incorporated and unincorporated practices. Earnings are the sum of wage-and-salary and self-employment income, measured in 2012 dollars. Full-time workers are defined as working 35 or more hours per week and 40 or more weeks in the last year.

The unit of analysis is the individual. Because ACS data do not identify the sexual orientation of individuals, we limit the sample to members of a cohabiting couple. We also limit the sample to workers, specifically individuals with positive annual earnings. We exclude individuals who are under 18 years of age, over 65 years of age, or enrolled in the

[1] Because this time period includes the Great Recession, the results may not generalize to better economic times.
[2] ACS data are cross-sectional. Individuals surveyed in one year such as 2008 are not surveyed in other years.

military. The exclusions allow us to focus on individuals in the labor-market. Finally, we exclude individuals who have allocated values for sex or relationship to head of household, as well as individuals who are part of a household where more than one individual claims to be the unmarried partner or spouse of the head of household.

4. Methods

We estimate several models. We begin with a study of the determinants of self-employment, in order to document differences by couple type in self-employment propensities after controlling for individual characteristics:

(1) $SelfEmployed_i = \eta + \alpha * CoupleType_i + \beta * DemographicTraits_i + \upsilon_i$

In this equation, *SelfEmployed* is a dummy variable equal to one for self-employed workers. *CoupleType* is a vector of dummy variables for members of same-sex couples and members of different-sex, unmarried couples. The omitted category is married, different-sex couples, so the coefficients in α are interpreted relative to married couples. We estimate separate regressions for men and women given gender-based differences in many labor-market outcomes, including the ones of interest here. We do not have separate variables for being in a same-sex male couple versus a same-sex female couple because males and females are never included in the same regression.

DemographicTraits contains a set of demographic variables. The first set of demographic variables includes age, a set of "check all that apply" race and ethnicity dummy variables, and a set of mutually exclusive dummy variables for highest education level. We also include two household-level variables for the number of children in the household, with separate variables for children under age 6 and children aged 6 to 17, as in Antecol and Steinberger (2013) and Jepsen and Jepsen (2015). We distinguish between children who are too young to attend school and school-aged children because the former may have a stronger influence on labor-market decisions than the latter. We include dummy variables for industry

and occupational classifications. Finally, we include a set of year and state dummy variables to account for differences over time and between states in labor-market outcomes such as the propensity to be self-employed.

Although the dependent variable is a dummy variable, we estimate ordinary least squares (OLS) models, i.e. linear probability models. We do so because these models are less sensitive to distributional assumptions than logit or probit models, and OLS coefficients are easier to interpret (Wooldridge 2001). Unreported results from logit and probit models yield similar results. In all models, we estimate models with robust (Huber-White) standard errors to account for heteroskedasticity.

After investigating the relationship between sexual orientation and the likelihood that an individual is self-employed, we study the association between self-employment and earnings. Our particular focus is whether earnings for self-employed people vary by sexual orientation, as proxied by couple type. The sample for the earnings equation includes all workers and is specified as follows:

(2) $LogEarnings_i = \eta + \alpha * CoupleType_i + \lambda * SelfEmployed + \phi * CoupleType * Self\ Employed + \beta * DemographicTraits_i + \varepsilon_i$

The dependent variable is the natural log of real earnings, a standard outcome variable in labor economics. Because the log of earnings is not defined when earnings are zero or negative, the sample is limited to people with positive earnings. The exclusion of people who have no earnings is not problematic, however, under the assumption that self-employed people are by definition employed. The interpretation of the effects for self-employed people would be complicated in a sample that included people who were not employed.

CoupleType, *SelfEmployed*, and *DemographicTraits* are defined as in Equation (1). The key independent variables of interest are the interaction terms between couple type and self-employment. The coefficients in ϕ show the extent to which earnings for self-employed

people vary by couple type. For example, positive coefficients for the interaction terms for same-sex women*self-employed would be consistent with higher earnings returns to self-employment for lesbians as compared to married women.

In this analysis, we test the robustness of our results to several different specifications. Because bargaining power within the household may vary between heads of household and partners (Oreffice 2011), we estimate separate models for heads of household and for partners. Because the majority of same-sex couples live in urban areas, we estimate the model restricting the sample to individuals living in urban areas. Finally, we estimate models with more detailed measures of occupation to see if occupational differences by sexual orientation and self-employment are driving the main results.

5. Results

Descriptive Statistics

Table 1 contains descriptive statistics for the regression sample, separated by gender and couple type. For men, married men have higher average earnings than gay men, who in turn have higher earnings than cohabiting men.[3] For women, lesbians have the highest average earnings, followed by married women, followed by cohabiting women. Annual earnings have large standard deviations in excess of $30,000 for women and $40,000 for men, so the differences between couple types are not statistically different, even at the 10-percent level.

Substantial, statistically significant differences exist in self-employment rates by gender and couple type. Over 15 percent of married men are self-employed, compared to 13 percent of gay men and 11 percent of cohabiting men. Over 9 percent of married women are self-employed, compared to 10 percent of lesbians and 6 percent of cohabiting women. The higher self-employment rates for men than women are consistent with previous studies. The

[3] For ease of exposition, we refer to men in same-sex couples as gay men, men in unmarried, different-sex couples as cohabiting men, and men in married, different-sex couples as married men. For women, we refer to lesbians, cohabiting women, and married women.

percentages of self-employed people are slightly lower for the sample of full-time workers, but the self-employment patterns across couple types is the same for full-time workers compared to the full sample of workers. Among our sample of workers, at least 75 percent of men (regardless of couple type) and of lesbian women work full time, compared to approximately two-thirds of married and cohabiting women.

Cohabiting individuals are younger, less educated, and more likely to be minorities than married individuals or gay men/lesbians. The percentages of people with a graduate degree are above 20 percent for gay men and lesbians, 15 percent for married individuals, and 5-7 percent for cohabiting individuals. The table shows differences in characteristics among couple types, which are consistent with previous research (Jepsen and Jepsen 2006; Jepsen 2015).

Self-Employment Regressions

Simple descriptive statistics are informative about overall differences in the data, but they do not control for any relationships among variables. In Table 2, we report the results from regressions where the dependent variable is equal to one for self-employed workers and zero for wage-and-salary workers. As previously discussed, we exclude from all analyses individuals with negative or zero earnings. The first two columns contain results for men, and the last two columns contain results for women. For each sex, the first column reports the results for all workers regardless of hours worked, and the second column reports the results for individuals who work 35 or more hours per week.[4] All models include the demographic traits listed in Table 1, controls for occupation and industry, and state and year fixed effects.

Gay men are about one percentage point less likely to be self-employed than married men. The difference is slightly larger among full-time workers. For all workers, the coefficient size of -0.9 is 7 percent of the average self-employment rate of 13 percent. In

[4] We also estimate results where full-time workers are defined as working at least 30 hours a week. These results, available from the authors upon request, are quite similar to the results in the tables for working at least 35 hours a week.

other words, gay men are less likely to be self-employed than married men, but the effect is moderate in comparison to the average self-employment rate. Cohabiting men are 0.4 percentage points less likely than married men to be self-employed, with a slightly larger difference in the sample of full-time workers.

For women, lesbians are not statistically more likely to be self-employed than married women among all workers, but among full-time workers, lesbians are about 0.5 percentage points more likely to be self-employed, an effect of 7 percent of average self-employment rates for lesbian full-time workers. In contrast, cohabiting women are noticeably less likely to be self-employed than married women, with a difference of 2.5 percentage points for all workers (column 1). The size of the effect is over half of the 5.5 percent self-employment rate of cohabiting women.

For both men and women, blacks and Hispanics are less likely to be self-employed than whites. Age and the number of children in the household – both pre-school and school-age – are positively related to self-employment. Men with associate's or bachelor's degrees are less likely to be self-employed than high-school graduates (the omitted group), whereas women with any postsecondary education are more likely to be self-employed than high-school graduates. Thus, the table shows many differences between men and women with respect to the factors associated with being self-employed, with a pattern of results similar to the previous literature, even though our sample is limited to members of cohabiting couples.

Earnings Regressions

Next we study whether self-employment is associated with increased wages of gay men and lesbians, as well as cohabiting men and women (relative to married individuals). Table 3 contains the results of the model described in Equation (2) where the dependent variable is log earnings, and the sample includes both self-employed and wage-and-salary workers. For ease of interpretation, all coefficients are described as percent effects, the

standard interpretation in log earnings equations. As in Table 2, we report two specifications to check for robustness based on the number of hours worked.

Annual earnings are lower for gay wage earners relative to married male wage earners, and they are higher for lesbian wage earners relative to married female wage earners.[5] Our findings are consistent with previous research on earnings differences by sexual orientation (Klawitter 2015; Black et al. 2007). Similarly, annual earnings are lower for cohabiting wage earners relative to married wage earners. Married self-employed workers have noticeably lower earnings of 20.2 percent for men and 37.6 percent for women, holding constant couple type and other factors. The lower earnings are robust to restrictions to full-time workers, although the magnitude of the penalty shrinks if we limit the sample to full-time workers.

The main variables of interest in Table 3 are the interaction terms between self-employment and couple type. For men, the interaction term for being self-employed and a gay man is negative and significant for the full sample, meaning that gay men experience a further earnings penalty for self-employment compared to married men.[6] The magnitude of the coefficient, however, is essentially zero (0.02 percent) when we restrict the sample to full-time workers. The coefficients for the interaction term for cohabiting men are negative and significant, so we find consistent evidence that being self-employed is associated with lower earnings for cohabiting men compared to married men.

For women, the coefficient for self-employed lesbians is positive and significant for the full sample, meaning that lesbians experience a premium for self-employment compared to married women. The coefficient is much smaller and is not statistically significant when

[5] In regressions with interaction terms, the coefficient for each of the interacted effects on its own is interpreted as the effect when the other interaction term is set to zero. In our model, the interpretation of the same-sex coefficient is the effect of being gay or lesbian for wage earners, i.e. when self-employment is equal to zero. Similarly, the coefficient for self-employment is interpreted as the effect for married individuals, i.e. when the gay or lesbian coefficient is equal to zero.

[6] Unless otherwise stated, all references to significance refer to significance at the ten-percent level for a two-sided test.

we restrict the sample to full-time workers. The interaction terms for cohabiting women are close to zero in both specifications.

Gay men earn less than married men, and self-employed men earn less than wage-and-salary earner men, so we might expect the penalties to continue for self-employed gay men. In the specification including part-time workers, we find such a penalty. But the interaction term is essentially zero in the sample of full-time workers, which could be interpreted as evidence that no further penalty exists for being gay among the self-employed once we restrict our sample to full-time employment.

Because many prior studies find a wage premium for lesbians, our results extend those findings by suggesting that the premium continues regardless of whether the lesbian women are self-employed or working for an employer. The loss of significance in the sample of full-time workers is consistent with the self-employment premium being driven by part-time, self-employed lesbians.

Because same-sex couples have two members of the same sex, roughly half of the gay men and lesbians in our sample are heads of household and half are partners.[7] When filling out the Census form, the head of household and partner decide who is designated as the head versus the partner, not the Census Bureau. In different-sex couples, the man is usually the head of household, and the woman is usually the partner (Table 4). The results in Table 3 contain both heads of household and partners/spouses, with no distinctions between them. Table 4 contains separate results for heads of household and for partners/spouses. The top panel is for men, and the bottom panel is for women. The first two regressions are for heads of household, and the second two are for partners/spouses. As in previous tables, Table 4 includes specifications for all workers and for full-time workers.

[7] The percentage is not exactly half due to data exclusions such as the age restrictions mentioned in the data section.

For male heads of household, the marginal returns to self-employment for gay men are not statistically different from zero. For male partners/spouses, gay men have an extra earnings penalty for self-employment of 8.8 percent in the full sample. However, among full-time workers, the interaction term is small and is not statistically different from zero.

Among women, the table shows that lesbian heads of household have an additional earnings gain associated with self-employment. The coefficient is 12.6 percent for all women and 8.2 for full-time workers. For partners/spouses, lesbians have small and statistically insignificant penalties to self-employment in both samples. Overall, the results in Table 4 suggest that any potential gains in self-employment for gay men or lesbians are more evident for heads of household than for partners/spouses. Except for lesbian heads of household, however, all but one of the interaction terms between same-sex and self-employment are statistically insignificant.

Black et al. (2007) illustrate that, for the 2000 Census, 90 percent of gay men and 85 percent of lesbians live in urban areas, compared with 75 percent of different-sex couples. In additional specifications, we use two strategies to address this difference in geographic preferences. First, we replace the state dummy variables with metropolitan-area dummy variables.[8] The results, available from the authors upon request, are nearly identical to the results with state dummy variables.

Second, we restrict the estimation to individuals living in metropolitan areas and report the results in Appendix Table A1.[9] In general, the coefficient for the interaction term between same-sex couples and self-employment is smaller (or, in the case of negative

[8] Specifically, we include dummy variables for each Combined Statistical Area, or CSA. CSAs identify the fewest number of metropolitan areas. For example, the Bay Area in California is treated as one CSA rather than separate areas for San Francisco, Oakland, and San Jose. For individuals not living in a CSA, we create a separate non-CSA dummy variable for each state (ex: rural California, rural Nevada, etc.). We map ACS Public Use Microdata Areas (PUMAs) to CSA using the MABLE/Geocorr12 Geographic Correspondence Engine from the Missouri Census Data Center. For PUMAs that cover multiple CSAs, or CSAs and non-CSAs, we choose the CSA (or rural area) with the largest number of residents in that PUMA. Over 75 percent of PUMAs contain only one CSA.

[9] The table contains results using dummy variables for each state, but the results are nearly identical when dummy variables for each metropolitan area are used instead of dummy variables for each state.

coefficients, more negative) in the urban samples compared to the combined urban and non-urban samples, For example, the earnings penalty associated with self-employment is 8.9 percent in the urban sample (Appendix Table A1, Column 1) compared with a penalty of 5.4 percent for all workers (Table 3, Column 1). For the sample of all working women, the interaction term is 4.7 percent (and statistically insignificant) in the urban sample (Appendix Table A1, Column 3) compared with a coefficient of 6.0 percent for all workers (Table 3, Column 3). This pattern of results is consistent with lower self-employment earnings for individuals in same-sex couples who live in an urban setting. In contrast, the coefficients for the same-sex couple variable and the self-employment variable (separately, i.e. not interacted) are quite similar in the urban sample (Appendix Table A1) and in the combined urban and non-urban sample (Table 3)

Another potential concern is whether the controls for occupation are sufficient to capture differences across these dimensions in both earnings and self-employment. Specifically, we use six categories of occupations based on overall groupings by the Census Bureau. The results are quite similar when we use a much more extensive list of 24 occupations and limit the sample to the five occupations (from the list of 24) with the highest percentage of self-employed individuals (results available from the authors upon request). This similarity suggests that the categorization of occupations is not driving the pattern of results.

6. Discussion

Using 2007-2011 ACS data on individuals in same-sex, unmarried different-sex, and married different-sex couples, we study whether there are any differences by sexual orientation in either the probability of being self-employed or additional earnings gains or penalties associated with self-employment. We find that gay men are 1.0 to 1.5 percentage points less likely to be self-employed than married men. Any increased likelihood of self-

employment among lesbians is likely driven by full-time workers. For the sample of all working women, lesbians and married women are equally likely to be self-employed.

For gay men, the earnings picture continues to be discouraging. Consistent with past studies, we find a substantial earnings penalty for gay male wage earners compared to married male wage earners. Because the magnitude of the coefficient of the gay*self-employed interaction term is close to zero, we conclude that being self-employed as a gay man is no worse in terms of earnings, on average, than being self-employed as a married man.

For women, the results are more positive. The lesbian coefficient and the coefficient of the lesbian*self-employed interaction term are both positive in the earnings regressions (Table 3). The overall effect of being a lesbian, i.e. the sum of the lesbian coefficient and the lesbian*self-employed coefficient, is positive and statistically significant. However, the earnings differential between self-employed and wage-employed (the lesbian*self-employed interaction term) is not statistically significant in the sample of full-time workers.

In interpreting these results, we consider four potential hypotheses from the literature on household economics, although other explanations are possible. The first hypothesis, from Grossbard-Shechtman (1984) and Grossbard and Jepsen (2008), is that individuals within a couple pool resources in the form of a quasi-wage transfer.[10] Aldén et al. (2015) find suggestive evidence that gay men pool resources after partnership. To investigate this possibility, Table 5 contains results from a model where the dependent variable is part-time status. In the first and third columns, the definition of part-time status is working than 30 hours per week, and in the second and fourth columns the hours threshold is 35 hours per week. The first two columns are for men, and the second two columns are for women. The

[10] The resource pooling hypothesis is also known as a bargaining model, as modeled in Oreffice (2011).

sample is restricted to self-employed individuals.[11] The coefficient of interest is the variable for sexual orientation. A finding that gay men are more likely to choose part-time self-employment is consistent with resource pooling, as we assume that the part-time worker is able to work part-time because he is pooling resources with his partner. Indeed, the results in the first two columns show that, all else equal, self-employed gay men have a higher likelihood of part-time status of 6 to 8 percentage points. This finding, coupled with the lower earnings for self-employed gay men in some specifications in Tables 3 and 4, is consistent with the resource pooling hypothesis for gay men as in Aldén et al. (2015).

Second, we study the flexibility hypothesis as suggested in the context of married women being more likely than lesbians to choose self-employment to allow for flexibility in balancing family and career (Gurley-Calvez et al, 2009; Wellington, 2006). In Table 5, self-employed lesbians are less likely to work part-time by approximately 13 percentage points. The finding of a higher return to self-employment income for all women but not for full-time women is consistent with married women choosing part-time self-employment for flexibility. Interpreted this way, our results support the flexibility hypothesis for married women relative to lesbians.

Third is the idea of employer discrimination against gays and lesbians, which would lead to higher self-employment probabilities – and likely higher earnings among the self-employed – for gays and lesbians (Becker, 1957, 1971; Moore, 1983). There is little if any evidence to support this theory. Gay men have lower self-employment rates. Previous work

[11] We also estimate a model for all workers where we include the same set of control variables as in Equation (2). In this model, the coefficient of interest is the interaction term between sexual orientation and being self-employed. This coefficient is positive and significant for men. For women, the coefficient is negative and significant when part-time status is defined as fewer than 30 hours per week, but the coefficient is very close to zero (and statistically insignificant) when part-time status is defined as fewer than 35 hours a week. For the sexual orientation and self-employment coefficients separately rather than their interaction, gays and the self-employed are more likely to work part-time, but lesbians are less likely to work part-time. Full results are available from the authors upon request.

shows consistently that lesbians have higher earnings than married women, and we find similar self-employment rates between lesbians and married women.

Fourth is customer discrimination with incomplete information as in Borjas and Bronars (1989), leading to lower self-employment rates and lower earnings returns to self-employment for gays and lesbians. Again, the evidence is thin, except in some specifications for gay men. However, such a theory would also require customers to identify the sexual orientation of the seller, which is not always as obvious as race/ethnicity and sex.

In short, three of the four theories are plausible explanations for our pattern of findings. Like Aldén et al (2015), our results are often consistent with the quasi-wage transfer or pooling hypothesis for gay men relative to married men but not for lesbians relative to married women. Our results are also consistent with the flexibility hypothesis for married women relative to lesbians, but not for gay men relative to married men. Customer discrimination, although a plausible explanation, assumes that customers can identify the sexual orientation of the seller. Employer discrimination is not a likely explanation for our pattern of results.

The policy implications of our research suggest that current programs that encourage small-business ownership by under-represented groups, including women, minorities, and veterans, could be expanded to include sexual orientation with a specific focus on gay men. For women, our policy recommendations echo those of Gurley-Calvez et al. (2009) who encourage programs to assist women with work-life balance of careers and families and call for additional research into why women are under-represented in the ranks of the self-employed.

Future research should focus on understanding the causes of these differences by sexual orientation in self-employment likelihood and earnings among the self-employed. The data demands for this research agenda are substantial, however, and include having a

sufficient sample size of self-employed individuals of different sexual orientations as well as exogenous variation in self-employment. With such data, researchers would be able to test among the different hypotheses put forward here: income pooling/bargaining power, flexibility, and/or discrimination.

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Table 1 – Descriptive Statistics for Labor-Market Characteristics and Demographics

	Men			Women		
		Unmarried	Married		Unmarried	Married
	Same-sex	Diff.-sex	Diff.-sex	Same-sex	Diff.-sex	Diff.-sex
Earnings (2012$)	67,581	40,785	70,039	53,703	31,058	39,266
	(75,725)	(43,189)	(74,048)	(56,241)	(31,024)	(41,424)
Self-employment	42,365	30,955	47,035	31,022	19,361	23,526
Earnings (2012$)	(70,398)	(48,231)	(71,764)	(54,877)	(33,705)	(43,318)
Self-employed	0.129	0.112	0.153	0.099	0.055	0.094
	(0.335)	(0.315)	(0.360)	(0.298)	(0.229)	(0.292)
Self-employed	0.111	0.096	0.138	0.079	0.042	0.069
among full time	(0.314)	(0.294)	(0.345)	(0.270)	(0.201)	(0.253)
Full time	0.795	0.756	0.856	0.761	0.661	0.647
	(0.404)	(0.430)	(0.351)	(0.426)	(0.473)	(0.478)
White	0.880	0.801	0.852	0.876	0.822	0.850
	(0.326)	(0.399)	(0.355)	(0.329)	(0.383)	(0.357)
Black	0.048	0.108	0.059	0.068	0.093	0.062
	(0.214)	(0.310)	(0.236)	(0.252)	(0.290)	(0.241)
Hispanic	0.112	0.168	0.109	0.093	0.138	0.094
	(0.316)	(0.374)	(0.311)	(0.290)	(0.345)	(0.292)
Other race	0.090	0.112	0.101	0.078	0.109	0.100
	(0.286)	(0.316)	(0.302)	(0.268)	(0.311)	(0.301)
Age	43.7	37.0	46.1	43.1	35.6	45.1
	(10.5)	(11.4)	(10.6)	(11.1)	(11.7)	(10.8)
Less than HS	0.048	0.155	0.089	0.041	0.092	0.056
	(0.213)	(0.362)	(0.285)	(0.198)	(0.289)	(0.231)
High school	0.153	0.344	0.255	0.162	0.274	0.237
	(0.360)	(0.475)	(0.436)	(0.368)	(0.446)	(0.425)
Some college	0.218	0.234	0.209	0.213	0.278	0.219
	(0.413)	(0.423)	(0.407)	(0.410)	(0.448)	(0.414)
Associate's degree	0.083	0.071	0.081	0.090	0.099	0.110
	(0.276)	(0.257)	(0.273)	(0.286)	(0.298)	(0.313)
Bachelor's degree	0.287	0.144	0.219	0.254	0.184	0.232
	(0.452)	(0.352)	(0.413)	(0.435)	(0.387)	(0.422)
Graduate school	0.211	0.051	0.147	0.241	0.074	0.145
	(0.408)	(0.221)	(0.354)	(0.428)	(0.261)	(0.352)
No. kids <6 in HH	0.087	0.337	0.333	0.160	0.279	0.268
	(0.368)	(0.654)	(0.662)	(0.471)	(0.593)	(0.590)
No. kids 6-17 in HH	0.174	0.459	0.708	0.332	0.427	0.633
	(0.566)	(0.860)	(0.999)	(0.742)	(0.832)	(0.946)
Observations	25,079	218,781	2,138,469	26,238	205,047	1,869,434

Note: The table contains means and standard deviations in parentheses.

Table 2 – Determinants of Self-Employment, Linear Probability Model

	Men		Women	
	All	Full time	All	Full time
Same sex	-0.009 ***	-0.015 ***	0.002	0.005 ***
	(0.0021)	(0.0022)	(0.0018)	(0.0019)
Cohabiting	-0.004 ***	-0.007 ***	-0.025 ***	-0.020 ***
	(0.0007)	(0.0008)	(0.0006)	(0.0006)
Black	-0.047 ***	-0.047 ***	-0.038 ***	-0.031 ***
	(0.0008)	(0.0008)	(0.0006)	(0.0007)
Hispanic	-0.043 ***	-0.041 ***	-0.020 ***	-0.021 ***
	(0.0008)	(0.0008)	(0.0007)	(0.0008)
Other race	-0.011 ***	-0.009 ***	-0.009 ***	-0.001 *
	(0.0008)	(0.0008)	(0.0007)	(0.0008)
Age	0.006 ***	0.006 ***	0.005 ***	0.004 ***
	(0.0002)	(0.0002)	(0.0001)	(0.0002)
Age squared (00s)	-0.002 ***	-0.002 ***	-0.002 ***	-0.002 ***
	(0.0002)	(0.0002)	(0.0002)	(0.0002)
Less than high school	0.0001	-0.005 ***	-0.018 ***	-0.020 ***
	(0.0009)	(0.0010)	(0.0010)	(0.0012)
Some college	-0.001	-0.002 ***	0.017 ***	0.014 ***
	(0.0006)	(0.0007)	(0.0006)	(0.0006)
Associate's	-0.018 ***	-0.018 ***	0.014 ***	0.011 ***
	(0.0009)	(0.0009)	(0.0007)	(0.0008)
Bachelor's	-0.021 ***	-0.022 ***	0.033 ***	0.022 ***
	(0.0008)	(0.0008)	(0.0006)	(0.0007)
Graduate school	0.002 *	0.002 **	0.054 ***	0.039 ***
	(0.0009)	(0.0009)	(0.0008)	(0.0008)
Number of kids under age 6	0.006 ***	0.007 ***	0.014 ***	0.007 ***
	(0.0003)	(0.0004)	(0.0004)	(0.0004)
Number of kids ages 6 to 17	0.009 ***	0.010 ***	0.011 ***	0.009 ***
	(0.0002)	(0.0003)	(0.0002)	(0.0003)
Observations	2,382,329	2,015,745	2,100,719	1,365,325
R-squared	0.11	0.10	0.08	0.08

Notes: Robust standard errors are in parenthesis. In addition to the controls shown in the table, each regression also includes dummy variables for occupation, industry, year, and state.
***=significant at a 0.01 level; **=significant at a 0.05 level; *=significant at a 0.10 level

Table 3 – Determinants of Log Real Earnings

	Men		Women	
	All	Full time	All	Full time
Same sex	-0.204 ***	-0.111 ***	0.212 ***	0.107 ***
	(0.006)	(0.004)	(0.006)	(0.004)
Cohabiting	-0.213 ***	-0.126 ***	0.036 ***	-0.027 ***
	(0.002)	(0.002)	(0.002)	(0.001)
Self-employed	-0.202 ***	-0.141 ***	-0.376 ***	-0.248 ***
	(0.002)	(0.002)	(0.004)	(0.004)
Self-employed * Same sex	-0.054 **	0.0002	0.060 **	0.030
	(0.025)	(0.025)	(0.028)	(0.028)
Self-employed * Cohabiting	-0.092 ***	-0.049 ***	0.001	-0.00002
	(0.009)	(0.009)	(0.014)	(0.014)
Black	-0.282 ***	-0.223 ***	0.077 ***	-0.042 ***
	(0.002)	(0.002)	(0.003)	(0.002)
Hispanic	-0.148 ***	-0.176 ***	-0.047 ***	-0.106 ***
	(0.002)	(0.002)	(0.003)	(0.002)
Other race	-0.141 ***	-0.133 ***	0.041 ***	-0.029 ***
	(0.002)	(0.002)	(0.003)	(0.002)
Age	0.110 ***	0.067 ***	0.107 ***	0.057 ***
	(0.0005)	(0.0004)	(0.0005)	(0.0004)
Age squared	-0.001 ***	-0.001 ***	-0.001 ***	-0.001 ***
	(5.4E-6)	(4.2E-6)	(6.1E-6)	(4.3E-6)
Less than high school	-0.236 ***	-0.184 ***	-0.213 ***	-0.169 ***
	(0.002)	(0.002)	(0.003)	(0.003)
Some college	0.107 ***	0.119 ***	0.069 ***	0.116 ***
	(0.002)	(0.001)	(0.002)	(0.001)
Associate's	0.151 ***	0.147 ***	0.186 ***	0.207 ***
	(0.002)	(0.002)	(0.003)	(0.002)
Bachelor's	0.361 ***	0.367 ***	0.284 ***	0.391 ***
	(0.002)	(0.002)	(0.002)	(0.002)
Graduate school	0.606 ***	0.619 ***	0.579 ***	0.622 ***
	(0.002)	(0.002)	(0.003)	(0.002)
Number of kids under age 6	0.026 ***	0.027 ***	-0.103 ***	0.028 ***
	(0.001)	(0.001)	(0.001)	(0.001)
Number of kids ages 6 to 17	0.024 ***	0.029 ***	-0.117 ***	-0.014 ***
	(0.001)	(0.001)	(0.001)	(0.001)
Observations	2,382,329	2,015,745	2,100,719	1,365,325
R-squared	0.25	0.31	0.21	0.34

Notes: Robust standard errors are in parenthesis. In addition to the controls shown in the table, each regression also includes dummy variables for occupation, industry, year, and state.
***=significant at a 0.01 level; **=significant at a 0.05 level; *=significant at a 0.10 level

Table 4 – Determinants of Log Real Earnings, by Sex
Separately for Heads of Household and Partners / Spouses

	Heads of Household		Partners / Spouses	
	All	Full time	All	Full time
Men				
Same sex	-0.128 ***	-0.067 ***	-0.255 ***	-0.141 ***
	(0.008)	(0.006)	(0.009)	(0.006)
Cohabiting	-0.134 ***	-0.080 ***	-0.272 ***	-0.167 ***
	(0.003)	(0.002)	(0.003)	(0.002)
Self-employed	-0.186 ***	-0.127 ***	-0.234 ***	-0.167 ***
	(0.003)	(0.003)	(0.004)	(0.004)
Self-employed * same-sex	-0.017	0.026	-0.088 ***	-0.029
	(0.034)	(0.033)	(0.036)	(0.036)
Self-employed * cohabiting	-0.081 ***	-0.051 ***	-0.124 ***	-0.065 ***
	(0.011)	(0.011)	(0.014)	(0.014)
Observations	1,570,735	1,346,510	811,594	669,235
R-squared	0.24	0.31	0.25	0.31
Women				
Same sex	0.224 ***	0.124 ***	0.168 ***	0.073 ***
	(0.008)	(0.006)	(0.008)	(0.006)
Cohabiting	0.035 ***	-0.022 ***	0.008 ***	-0.044 ***
	(0.003)	(0.002)	(0.003)	(0.002)
Self-employed	-0.380 ***	-0.251 ***	-0.376 ***	-0.248 ***
	(0.006)	(0.007)	(0.004)	(0.005)
Self-employed * same-sex	0.126 ***	0.082 **	-0.010	-0.032
	(0.038)	(0.040)	(0.040)	(0.038)
Self-employed * cohabiting	0.046 ***	0.022	-0.065 ***	-0.040 *
	(0.018)	(0.019)	(0.021)	(0.022)
Observations	762,785	517,260	1,337,934	848,065
R-squared	0.23	0.36	0.20	0.33

Notes: Robust standard errors are in parenthesis. Each column and panel is from a separate regression, yielding a total of 8 regressions. Each regression also includes the control variables listed in Table 3 as well as dummy variables for industry, occupation, year, and state.
***=significant at a 0.01 level; **=significant at a 0.05 level; *=significant at a 0.10 level

Table 5 – Determinants of Part-Time Status for the Self Employed

	Men		Women	
	<30 hrs / wk	<35 hrs / wk	<30 hrs / wk	<35 hrs / wk
Same sex	0.069 ***	0.095 ***	-0.130 ***	-0.130 ***
	(0.007)	(0.008)	(0.008)	(0.009)
Cohabiting	0.044 ***	0.071 ***	-0.059 ***	-0.047 ***
	(0.002)	(0.003)	(0.005)	(0.005)
Black	0.059 ***	0.066 ***	-0.078 ***	-0.093 ***
	(0.003)	(0.004)	(0.006)	(0.006)
Hispanic	0.009 ***	0.017 ***	0.020 ***	0.024 ***
	(0.002)	(0.003)	(0.004)	(0.004)
Other race	0.001	-0.003	-0.084 ***	-0.105 ***
	(0.002)	(0.002)	(0.004)	(0.004)
Age	-0.023 ***	-0.028 ***	-0.024 ***	-0.024 ***
	(0.001)	(0.001)	(0.001)	(0.001)
Age squared (00s)	0.029 ***	0.035 ***	0.029 ***	0.030 ***
	(0.001)	(0.001)	(0.001)	(0.001)
Less than high school	0.034 ***	0.049 ***	0.055 ***	0.051 ***
	(0.002)	(0.003)	(0.005)	(0.005)
Some college	0.004 ***	0.004 **	0.010 ***	0.008 **
	(0.002)	(0.002)	(0.003)	(0.003)
Associate's	-0.001	-0.004	0.012 ***	0.015 ***
	(0.002)	(0.003)	(0.004)	(0.005)
Bachelor's	-0.006 ***	-0.014 ***	0.066 ***	0.065 ***
	(0.002)	(0.002)	(0.004)	(0.004)
Graduate school	-0.029 ***	-0.041 ***	0.044 ***	0.052 ***
	(0.002)	(0.003)	(0.004)	(0.004)
Number of kids under age 6	0.000	-0.004 ***	0.089 ***	0.080 ***
	(0.001)	(0.001)	(0.002)	(0.002)
Number of kids ages 6 to 17	-0.001 **	-0.003 ***	0.047 ***	0.047 ***
	(0.001)	(0.001)	(0.001)	(0.001)
Observations	324,665	324,665	183,184	183,184
R-squared	0.04	0.05	0.04	0.04

Notes: Robust standard errors are in parenthesis. Each column is from a separate regression, yielding a total of 4 regressions. Each regression also includes the control variables listed in Table 3 as well as dummy variables for industry, occupation, year, and state.
***=significant at a 0.01 level; **=significant at a 0.05 level; *=significant at a 0.10 level

Appendix Table A1 – Determinants of Log Real Earnings for Urban Workers Only

	Men		Women	
	All	Full time	All	Full time
Same sex	-0.200 ***	-0.111 ***	0.214 ***	0.103 ***
	(0.006)	(0.005)	(0.006)	(0.004)
Cohabiting	-0.202 ***	-0.122 ***	0.041 ***	-0.027 ***
	(0.002)	(0.002)	(0.003)	(0.002)
Self-employed	-0.195 ***	-0.127 ***	-0.390 ***	-0.231 ***
	(0.003)	(0.003)	(0.004)	(0.005)
Self-employed * Same sex	-0.089 ***	-0.022	0.047	0.008
	(0.028)	(0.027)	(0.032)	(0.032)
Self-employed * Cohabiting	-0.106 ***	-0.070 ***	0.008	-0.013
	(0.010)	(0.010)	(0.016)	(0.016)
Observations	1,734,277	1,472,601	1,513,381	984,456
R-squared	0.27	0.33	0.21	0.35

Notes: Robust standard errors are in parenthesis. Each regression also includes the control variables listed in Table 3 as well as dummy variables for industry, occupation, year, and state.
***=significant at a 0.01 level; **=significant at a 0.05 level; *=significant at a 0.10 level