

EVIDENCE OF THE ROLE OF SEXUAL ORIENTATION
IN THE DETERMINATION OF EARNINGS OUTCOMES

JOHN M. BLANDFORD*

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Correspondence should be directed to John M. Blandford, Harris Graduate School of Public Policy Studies, The University of Chicago, 1155 East 60th Street, Chicago, Illinois, 60637.

Abstract

Analysis of 1989-96 General Social Survey data reveals the complex interplay of sexual orientation and gender in influencing earnings outcomes. Gay and bisexual men are shown to experience a 30-32% income disadvantage relative to heterosexual peers, while lesbian and bisexual women enjoy a wage premium of 17-23%. The disparate earnings effects of sexual orientation across genders belie facile attempts to portray orientation as a predictor of either affluence or labor-market disadvantage. Additionally, disaggregation of the effects of gender, marital status, and sexual orientation suggests that differentials long attributed to marital status may largely reflect previously unobserved effects of sexual orientation.

For lesbian, gay, and bisexual persons, the acknowledgment of a sexual orientation that deviates from societal norms has ramifications at once personal, social, and political. The ramifications are also economic. In a society in which the issues of homosexuality and bisexuality remain contentious and provoke fiercely divergent responses, that a worker's sexual orientation may alter earnings and career advancement outcomes is unsurprising. The nature of the impact, however, remains a matter of debate. Marketing research firms and conservative advocacy groups portray lesbians and gay men as an economically privileged minority, enjoying incomes higher than those of most Americans (DeLozier 1996; Hardisty and Gluckman 1997). At the same time, gay and lesbian rights organizations and an emergent academic literature focus on evidence of workplace intolerance to argue that sexual orientation discrimination has pervasive, deleterious effects on the employment environment experienced by non-heterosexual workers (Badgett, Donnelly and Kibbe 1992). Most significantly, early econometric study of the workplace effects of suspected sexual orientation bias show gay and bisexual orientations to be associated with a worker's earning significantly lower wages (Badgett 1995).

The present study argues that, while sexual orientation does indeed have a large and measurable impact on income patterns, empirical analysis of workers' earnings undermine easy portrayals of lesbian, gay, and bisexual workers as either an over-achieving minority or as simple victims of bias. Further, the econometric evidence demonstrates that long-measured earnings differentials attributed to marital status may largely be accounted for by the previously unrecognized effects of sexual orientation. Thus, the study informs both the recent interest in the labor implications of sexual orientation, as well the long-studied effects of gender on earnings outcomes.

PREVIOUS ECONOMIC RESEARCH

The study of the labor-market effects of sexual orientation—in particular, the impact of sexual orientation on earnings from work—remains in its early stages as an area of economic study. Lee Badgett (1995) is the first economist to attempt an explicit measure of earnings differentials associated with non-heterosexual orientations. Badgett argues that popular perceptions of lesbians and gays as especially affluent stem from inappropriate use of marketing research studies based on unrepresentative convenience samples. The biased samples are seen to mask evidence of sexual orientation's negative impact on the wages of lesbian, gay, and bisexual workers. Using pooled General Social Survey data, Badgett's study finds that gay and bisexual men face a wage penalty of between 11% and 27% in relation to heterosexual men. Although parameter estimates on the orientation variable fall short of statistical significance among female workers, Badgett's findings also suggest a wage penalty of 12% to 30% for lesbian and bisexual women workers compared to their heterosexual peers. Based on her findings, Badgett concludes that employment discrimination based on sexual orientation accounts for the measured wage differentials.

Klawitter and Flatt (1998) suggest more ambiguous findings about sexual orientation's impact on labor-market structures in the context of an analysis of antidiscrimination policies' impact on earnings. They use 1990 U. S. Census PUMS data to study the earnings patterns of heterosexually married, different-sex unmarried, and same-sex couples. While showing that male same-sex households are wealthier than both their married and different-sex unmarried peers, Klawitter and Flatt also reveal that the mean individual earnings of men in same-sex couples are lower than those of married men. Further, while female same-sex couples have lower household incomes than do married couples, the mean individual earnings of lesbian women are higher than those of women in either married or different-sex unmarried relationships.

While the effort to measure directly the earnings effects of sexual orientation remains young, the long-developed literature on gender's impact on expected wage outcomes provides theoretical grounding for the present work as well as empirical clues as to the expected effects of sexual orientation on earnings. Of particular importance to the analysis of sexual orientation's impact on earnings outcomes is the role played by the marital status control in gender-discrimination studies. Because a highly disproportionate number of self-identified lesbian, gay, and bisexual workers would not be expected to be legally married, it may be thought that the wage effects attributed to marital status incorporate and mask the previously unrecognized impact of sexual orientation.

Married men have long been observed to enjoy the highest levels of remuneration, followed by unmarried men, unmarried women, and lastly, married women (see, for example, Blinder 1973; England 1982; Hill 1979; Oaxaca 1973; Polachek 1975b; Sawhill 1973). Following Gary Becker's evolving theory of the rational division of labor within the household (Becker 1965; Becker 1989; Becker 1991), unexplained male-female wage differentials are attributed to the gender-role choices of spouses seeking to allocate time efficiently between household and market labor activities. Married women's place on the lowest rung of the wage hierarchy and married men's place on the highest rung, it is argued, represent the decision of women to take primary responsibility for domestic production. Optimization of total household production of domestic and market goods results in differential levels and types of human capital investment across gender-marital status groupings (Mincer and Polachek 1974; Polachek 1975a). Further, married women are understood to choose occupations that enable them to maintain primary responsibility for household labor, as well as allowing them to take breaks from the labor force in order to commit full-time to child-bearing and -rearing duties (Polachek 1975a). In this view,

married women are seen to forego part of their marginal productivity and the implied higher wages in the paid labor market to invest in those of their male spouses.

Other economists more fully attribute the lingering wage differentials to labor-market discrimination resulting from gender bias (e.g., Bergmann 1986; England 1982). Nevertheless, the inclusion of marital status controls is regularly justified as proxies for gender-role choice, in an effort to isolate the wage effects attributable solely to differences in biological sex (Polachek 1975b; Hill 1979; Fishback and Terza 1989). Women who have never married are seen as choosing non-traditional gender roles and able to commit fully to market labor; thus, their earning patterns ought to closely match those of men in the absence of workplace discrimination.

An apparent but thus far unexplored implication of gender discrimination studies is the role that may be played by sexual orientation in biasing the estimates of the marginal impact of marital status on expected wage outcomes. Because lesbian, gay, and bisexual workers comprise a disproportionate share of the never-married population—especially among older cohorts—the sign and magnitude of marital status as an explanatory variable may, in part, be attributable to its capturing the effects of sexual orientation in the workplace. Marital status controls may be expected to mask the underlying effects of sexual orientation and to distort the true impact of heterosexual marriage on expected earnings outcomes. The present study seeks to disaggregate the effects of gender, marital status, and sexual orientation.

THEORETICAL CONSIDERATIONS RELATED TO SEXUAL ORIENTATION

Previous econometric studies have emphasized employer bias as the primary factor shaping differential earnings patterns related to sexual orientation (Badgett 1995; Klawitter and Flatt 1998). Other social scientific studies support the existence of sexual orientation discrimination and the deleterious impact on non-heterosexual workers' well-being (Escoffier

1975; Gonsiorek 1993; Herek 1991; Badgett, Donnelly, and Kibbe 1992). Unlike differences of race, gender, or disability, federal law does not proscribe sexual orientation discrimination by private employers, and just nine states prohibit such discrimination (Rivera 1991). Local protections for lesbian, gay, and bisexual workers remain spotty and largely limited to the largest metropolitan areas. As with all nondiscrimination protections, effective detection and punishment of discriminatory practices is problematic.

In addition to the negative wage effects expected to result directly from an employer's taste for discrimination (Becker 1957), there is evidence that occupational sorting related to a worker's sexual orientation may further depress returns to human capital investments. Ellis and Riggle (1995) reveal that lesbian and gay workers make explicit choices between the greater job satisfaction that comes with the ability to be open about their orientation in the workplace and the higher pay that would be expected in jobs that would require passing as a heterosexual—suggesting that lesbian, gay, and bisexual workers treat a tolerant workplace as a compensating differential for lower wages. Exacerbating supply-side occupational choices of workers may be employer segregation of non-heterosexual workers into crowded, lower-paying job sites (following Bergmann 1986)

The comparison to other characteristics that elicit bias, however, must be qualified by the lack of reliable phenotypic markers signaling sexual orientation. Unlike race or gender, sexual orientation is a characteristic that may be successfully hidden from others—albeit with some cost and with varying degrees of success—in order to mitigate any negative impact of orientation in the workplace. Indeed, lesbian and gay workers have been shown to expend significant energy managing their sexual orientation on the job, carefully attempting to control if, when, and to whom the information is disclosed (Schneider 1986, Woods 1993). At the same time, the effort

expended to prevent unintended disclosure or detection of orientation may adversely impact productivity and depress earnings (Badgett 1995).

The existence of workplace bias, therefore, is expected to elicit differential earnings patterns associated with sexual orientation. Absent other effects related to sexual orientation, the anticipated impact on wages would be negative, and (because of some workers' efforts to prevent disclosure of their sexual identity) measured differentials would likely underestimate the full extent of workplace bias. Other factors related to sexual orientation may indeed be relevant, however, and may further influence expected earnings outcomes. Specifically, orientation may have a secondary impact by raising concomitant issues of gender.

The adoption of a non-heterosexual identity *per se* implies nonconformity to traditional gender-role expectations which prescribe heterosexual marriage as socially normative. This nonconformity may entail additional earnings effects distinct from the direct effects of any sexual orientation discrimination. Labor-supply explanations emphasize household-optimizing decision-making to account for the differing impact of marital status across genders (Becker 1991; Polachek 1975a), but demand-side processes may also be relevant. Observed differentials associated with marital status may derive not only from a worker's acceptance or rejection of traditional marriage expectations, but may also stem from the employer's response. Following statistical discrimination models, employers may reward marriage among male workers as a sign of job stability, while discounting the marginal product of married female workers because of expected competition between market and household labor responsibilities. If a demand-side marital status effect exists, the rejection of traditional gender norms (through non-participation in heterosexual marriage) might be seen to benefit lesbian and bisexual female workers while further depressing the wages of gay and bisexual males. Thus, the effects of nonconformity may in part

offset bias effects for lesbian and bisexual women, while exacerbating negative differentials for gay and bisexual men.

An additional aspect of non-conformity to gender expectations may also be manifested in occupational choice, with resultant wage effects. Gay men have been shown to be more likely than other men to work in professions that are female-identified, seeking workplaces less identified with male heterosexual norms (Carmichael 1995; Ellis and Riggle 1995). Similarly, Dunne (1997) reveals British lesbian women to be highly over-represented in traditional male occupational strongholds—a result both of the higher wages and greater job satisfaction associated with male-dominated occupations, as well as lesbian workers' greater success in managing the sexual politics and harassment of these job sites. For non-heterosexual workers, gender-divergent occupational patterns may prove a useful strategy to avoid participation in workplace cultures in which conformity to heterosexual norms for their respective genders is a key aspect of workplace culture. Again, divergence from expected gender patterns may be expected to benefit lesbian and bisexual female workers relative to their heterosexual peers. An overrepresentation of gay and bisexual male workers in female-identified jobs might be expected to lower the returns to human capital characteristics, however, relative to other men.

In sum, the direct effect of employer bias and the impact of resultant occupational sorting (to avoid discriminatory work environments) are expected to negatively impact lesbian, gay, and bisexual workers relative to their heterosexual peers. The concomitant issues of nonconformity to gender norms—through nonmarriage and gender-atypical occupational patterns—may introduce offsetting effects however, at least with respect to lesbian and bisexual female workers. Therefore, the net expected impact of sexual orientation in the workplace is negative for gay and bisexual male workers and theoretically ambiguous for lesbian and bisexual female workers.

THE DATABASE

The present study draws on pooled, cross-sectional data from the 1989-96 administrations of General Social Survey (GSS), a national area probability sample of non-institutionalized adults in the United States. In response to the HIV epidemic, the GSS began in 1989 to incorporate questions focused on a respondent's sexual behavior and the gender of sexual partners. The pooled data offers an initial sample of 7,182 working adults, ages 18-64. Paring the dataset to those respondents for whom complete information is available on requisite sexual behavior and marital status questions reduces the total number of observations to 5,998. Of these 3,039 are men and 2,959 women. Based on responses to questions about recent sexual history, 3.2% of the men and 2.6% of the women are defined as *behaviorally* homosexual or bisexual.¹

Sexual behavior taken alone, however, may not be sufficient to identify accurately those who have adopted particular sexual identities.² Current marital status is also a necessary consideration in accurately ascribing sexual orientation. Unmarried persons who are behaviorally homosexual or bisexual are those most likely to self-identify as lesbian, gay, or bisexual and who are most probably perceived as such by colleagues and superiors in the workplace. Empirical evidence demonstrates the strength of this approach in predicting sexual orientation and its superiority to other methodologies that rely on sexual behavior alone. Among the subset of behaviorally homosexual and bisexual workers, therefore, only those who are not currently

¹ The primary sexual behavior question utilized for this determination asks respondents whether, in the previous twelve months, their sexual partners been exclusively male, exclusively female, or both male and female. Those respondents who indicate that they have had exclusively same-gender sexual partners, or both male and female partners, are coded as behaviorally homosexual/bisexual. If the value for this question is missing—typically because the respondent had no sexual partners in the previous twelve-month period—an identically worded question that focuses on partners during the previous five years' timeframe is utilized for the assessment of sexual behavior.

² Because the GSS does not collect data on self-ascribed sexual identity, a proxy for identity is necessary. The National Health and Social Life Survey (Laumann, et al. 1994) replicates the sexual behavior queries of the GSS, while also gathering information on respondents' self-described sexual orientation. Taking advantage of this correspondence, a discrete analysis of NHLS data revealed that joint consideration of sexual behavior and current marital status provides the best proxy for sexual orientation. In addition to being a more reliable predictor of orientation than that employed by Badgett (1995), it is more parsimonious with already scarce data because of fewer missing values among the chosen sexual behavior questions. The

married are understood as openly lesbian, gay, or bisexual. The primary group of interest—those workers identified as “open” lesbian, gay, or bisexual—comprises 78 (2.6%) male respondents and 61 (2.1%) female respondents. These rates of non-heterosexual identity are consistent with those generated by Laumann, et al. (1994).³

Those respondents who are behaviorally homosexual or bisexual, but who remain in heterosexual marriages, are considered as “masked” in their sexual orientation; that is, short of voluntary disclosure, there is no *a priori* expectation that their sexual practices would become known to others. Concomitantly, it cannot be assumed that this group will face workplace discrimination; neither is it expected that labor market strategies for this group will differ from those of heterosexual workers. While the masked group is not the primary focus of the study, cases that fall into this group will nonetheless be treated as a discrete category rather than deleted or folded into another of the orientation groupings.

A final challenge to using General Social Survey is that earnings data are only reported on an annual basis and in categorical form. Converting the categorical data for use with OLS models presents some challenges, but there are reliable methodologies for this practice (Koutrouvelis 1981; Ligon 1994). The findings reported here rely on a relatively labor-intensive approach to achieve greater nuance. Using Current Population Survey data, a value is derived as the median annual earnings within a given categorical range for each race-gender subgroup, in a given income category and year. The data are then converted to real terms, using 1992 dollars as the base. Trials with other methodologies—and complementary ordered probit analyses that retain the categorical data—demonstrate the robustness of the technique.

improved reliability of the proxy is especially evident in the identification of self-described lesbian and bisexual women. See Methodological Appendix for a fuller justification of the proxy methodology.

³ In the National Health and Social Life Survey, Laumann, et al. (1994) reported rates of gay/bisexual identity of 2.8% for men and 1.4% for women. The apparent over-representation of lesbian and bisexual workers in the present sample reflects their high labor-force participation rates relative to other women.

Characteristics of the Male Subsample

The variable means for male respondents are reported in Table 1. A wide variation in mean annual income levels exists among the differing sexual and marital status groups. Married heterosexual men, who represent 60% of the male subsample, report a mean annual income of over \$37,000 in constant 1992 dollars. The income level of this group is well above the overall mean of \$32,864 and greatly exceeds the mean income reported by any other group. Unmarried heterosexual men reported annual earnings of \$26,184, a figure almost 30% lower than that of their married counterparts. Coincident with their higher average earnings, however, the group of married heterosexual men are also substantially older than their unmarried peers, less likely to work part-time, more likely to belong to a union, and somewhat better educated.

[INSERT TABLE 1]

For the group of primary interest, the unmarried gay or bisexual workers, the mean real annual earnings from work were \$27,415, nearly \$10,000 less than that of married heterosexual men and \$5,000 less the average of the entire group of working men. They are somewhat younger and better educated than the group as a whole; indeed, the openly gay and bisexual men are the best educated of any subgroup. They are the least likely to belong to a union, however. Just 7.7% of openly gay and bisexual workers are union members, compared to overall rate of 16.5%. They are also the most likely to work part-time rather than full-time. Unmarried gay and bisexual males are twice as likely to live in a large SMSA; while the overall large SMSA residency rate is 18.4% for male workers, 38.5% of open gay and bisexual men live in the largest urban areas.⁴

The variable means reported in Table 1 also reveal patterns of occupational clustering related to sexual orientation. Occupational categories are reported at the one- and two-digit levels. Openly gay and bisexual male workers appear heavily concentrated in managerial and

professional specialty occupations. Nine of twenty unmarried gay and bisexual workers are employed in this occupational category, compared to just under 30% for the group of male workers as a whole. The over-representation of open gay and bisexual males is evidenced at the two-digit level as well. Nearly one-quarter of these workers is employed in professional specialty occupations and one-fifth in executive, administrative, or managerial positions.

The disproportionately heavy concentration of the open gay and bisexual workers in the executive, administrative, or managerial positions and in the professional specialty category—occupational sectors typically associated with higher average wages—might give rise to the expectation that these men should earn higher average incomes than the group of men as a whole, holding all else equal. There is evidence, however, that open gay and bisexual workers may be situated in the more poorly remunerated occupations within the higher-paying occupation categories. For example, among the nineteen unmarried gay and bisexual men working in professional specialty occupations, three are in jobs typically gendered female (two are registered nurses, one an elementary school teacher), and nine are in occupations related to the arts (within this group are two designers; four painters, sculptors, craft-artists, or artisan printmakers; a college-level teacher of art, drama, or music; a musician or composer; and an actor or director). The remaining seven are spread among the remaining three-digit occupations within the professional specialty category. Thus, nearly two-thirds of the sample's open gay and bisexual men within the professional specialty category reside in jobs that might be expected to pay, on average, less than would be expected for the group as a whole.

Evidence of distinct occupational patterns related to sexual orientation emerges in other categories as well. The open gay and bisexual male workers are concentrated in technical, sales, and administrative support occupations. 28.2% are represented in these occupations, compared to

⁴ For the purposes of this study, living in a large SMSA is defined as residency in one of the twelve largest central cities or in a

just over 20% of all men are in these positions. Explaining this differential is the 14.3% of open gay and bisexual men working in administrative and clerical positions, double the expected rate for men. The unmarried gay and bisexual men are wholly absent from occupations in farming, fishing, and forestry, and they are largely absent from precision production, craft, and repair jobs. Other working men are seven-and-a-half times more likely to be employed in these occupations than are the openly gay and bisexual men. Among the gay and bisexual workers in the sample, none were employed as mechanics or repairers, or in precision production. Just 2.6% of the open gay and bisexual men were employed in the construction trades, a rate one-third that of male workers as a whole.

When detecting trends among the group of those gay and bisexual workers who are married—and whose sexual identity likely remains masked to other workers and employers—care must be exercised. Just eighteen men from the pool of more than three thousand, or 0.6%, fall into this group. Because of the relatively small sample size, strong assertions about occupational patterns can generally not be made with any confidence. Nevertheless, some striking patterns merit attention in this group of masked gay and bisexual workers. First, the annual earnings of these men, under \$23,000, are significantly lower than the overall mean income of \$32,864, and nearly forty percent lower than that earned by married heterosexuals. Second, there are interesting racial patterns in this group. Thirty-nine percent of the group is non-white, three times the overall rate. Blacks alone comprise 27.9% of the married gay and bisexual men in the study; among married heterosexuals, the rate is just 6.5%. Finally, the single largest occupation category providing employment for these men is that of operators, fabricators, and laborers. Again, while firm conclusions cannot be drawn, the limited data available would suggest that some correlation may exist between the masking of orientation and a disadvantageous economic position in society.

suburb of the twelve largest central cities.

Characteristics of the Female Subsample

Unlike the pattern evidenced among male workers, in which married heterosexuals enjoy the highest mean average income among the sexual orientation and marital status subgroups, female workers who are married and behaviorally heterosexual do not demonstrate a clear wage dominance (see Table 2). While their average annual incomes are marginally higher than those of unmarried heterosexuals, the married workers are also on average three years older and more likely to be white, with a resultant wage advantage. On the other hand, the group of married heterosexuals is also more likely to work part-time and to reside outside a large metropolitan area, characteristics associated with lower wages. These findings are largely consonant with previous studies of wage determination focusing on the effects of gender and marital status.

[INSERT TABLE 2]

The mean annual income of the group of unmarried lesbian and bisexual women, at \$23,689, is \$3,600 higher than that of the group as a whole. They are somewhat better educated and, at the same time, younger than other female workers. At a mean of 34.3 years, the group of open lesbian and bisexual workers is four years younger than other women in the sample group. The unmarried lesbian and bisexual women are much more likely to belong to labor unions than are other groups of women. Fully one-fourth of the open lesbian and bisexual workers in the sample hold union membership, a rather more than double that of women as a whole. They are also somewhat more likely to reside in a large metropolitan area.

As with the male workers, an analysis of broad occupational patterns reveals evidence of distinct clustering correlated to sexual orientation. At the one-digit categorical level, the clearest points of divergence in occupational patterns occur in the categories of service and of precision production, craft, and repair. 31.1% of open lesbian and bisexual women are employed in service occupations, compared to a rate of 17.1% for working women as a whole. The bulk of this

difference is evident at the two-digit subcategory level. Just under 10% of the unmarried lesbian and bisexual women, or six of the 61 in the sample, work in protective service occupations. Not only does this rate exceed the overall rate of for women by ten-fold, it is three times that of male workers.

The high rate of representation in service jobs is offset by relatively low representation of unmarried lesbian and bisexual women in jobs belonging to the technical, sales, and administrative support category. Of women as a whole, nearly 42% hold positions within this occupational category. This pattern of employment is irrespective of marital status; both married and unmarried heterosexuals exhibit a comparable presence at both the categorical and subcategorical level. In contrast, just 23.0% of the open lesbian and bisexual women are employed in this occupational category. Again, the source of the divergent rate of occupational representation is made manifest at the two-digit categorical level. Under 10% of the open lesbian and bisexual workers are employed in administrative support and clerical jobs, an occupational subcategory that includes one-fourth of all working women.

Finally, while the 31.1% employment rate of unmarried lesbian and bisexual women in managerial and professional specialty careers is statistically indistinguishable from the group of women as a whole, there appears evidence of clustering at the two-digit level. The bulk of the positions are occupied within the professional specialty subcategory. At the same, open lesbians and bisexuals are underrepresented in executive, administrative, and managerial positions. Just 6.6% of these women fall into this subcategory in contrast to the 11.3% rate for all women. It is possible, however, that some of this difference is attributable to the relative youth of the unmarried lesbian and bisexual women, assuming that executive, administrative, and managerial positions may be more likely to be offered to older and more experienced workers.

The group of married or "masked" lesbian and bisexual women is small relative to the entire sample. Just fifteen workers, one-half of one percent of working women, fall into this group. As was the case among male workers, however, some striking patterns emerge to suggest the relative economic disadvantage of this group. Mean annual earnings from work are, at \$18,859, the lowest of any group of working women. At the same time, members of this group tend to be older, less educated, and more likely to work part-time than are other women. They do not hold unionized jobs. Interestingly, there are no African-Americans among the masked lesbian and bisexual women; this fact stands in sharp counter-point to the high percentage of blacks found among the comparable group of male workers. Six of the fifteen (40%) of married lesbian and bisexual women in the sample are employed as operators, fabricators, and laborers—a rate five times that of women as a whole.

Income Distribution Patterns Related to Sexual Orientation

Further evidence of the association between sexual orientation and economic standing is displayed by income distribution patterns. Table 3 reports income distribution patterns for full-time workers, categorized by gender and sexual orientation.⁵ Income quintile divisions have been determined based on the annual earnings of all full-time workers of both sexes in the GSS sample. The distribution of income based on gender is largely consistent with expectations. Male workers are under-represented among the lower and lower-middle earnings groups, and over-represented among the upper-middle and upper groups. Additionally, the men lie disproportionately among the highest five percent of earners. The obverse of male income patterns is evidenced in the distribution of earnings among women. Female workers are most likely to be found in the lower

⁵ Reporting of income distribution is here limited to full-time workers to control partly for the effects of different rates of part-time status across sexual orientation groups. Because the only earnings information available in the General Social Survey is annual income rather than hourly wage, the inclusion of part-time workers becomes somewhat problematic. Not only would wages rates be expected to be lower among the part-time workers, but there would likely be great variation in the number of hours worked in any given period.

income quintiles and least likely to be in the higher groupings. Just 9.5% of women are located in the top quintile, and only 1.6% are among the highest 5% of earners. There is little difference in the patterns between married and unmarried heterosexual women. It should be recalled however that the group of married women is on average three years older than the unmarried group; thus, controlling for age may imply that married women are relatively worse off.

[INSERT TABLE 3]

Lesbian, gay, and bisexual workers evidence income distributions that diverge from the expected patterns for workers of their respective sexes. In general, both men and women who are among the group defined as open about their non-heterosexual orientation reveal distribution patterns that roughly parallel the quintile breakdown for full-time workers as a whole. Thus, among the unmarried lesbian and bisexual women, 40% are in the two lowest income quintiles and 38% are among the highest two. Four percent are among the top 5% of earners. Among the corresponding gay and bisexual men, the pattern is not quite so smooth; nonetheless, 43.5% of these workers falls into the bottom 40% of earners, 40.3% among the top two-fifths, and 3.2% among the top 5%.

The median salary of \$24,212 for unmarried gay and bisexual men is just slightly higher than the \$23,807 for figure lesbian and bisexual women, and the difference is not statistically significant ($p=.27$). Further, the group of lesbian/bisexual female workers is younger than that of gay/bisexual male workers, resulting in lower levels of potential work experience. Nor do the median earnings of either group differ significantly from that for all full-time workers of both sexes. Indeed, the lesbian, gay and bisexual workers appear as near-median figures in the income hierarchy. The earnings pattern is better than that of most woman, but it falls short of the higher earnings typical of male workers as a whole.

Overall, full-time women workers earn 65.6% of men's mean annual income. Comparing median annual income levels for full-time workers, women earn 69.9% of men's wages and salaries. The story changes dramatically however when comparing full-time, unmarried lesbian and bisexual workers with their male counterparts. Between these groups, the female-to-male ratio increases to 0.93:1 when comparing mean annual earnings, and 0.98:1 when comparing median figures. Thus, in focusing on the subgroup of open lesbians, gays, and bisexuals, long-standing expectations of a female-male wage differential are not definitively realized.

ECONOMETRIC EVIDENCE OF SEXUALITY'S ROLE IN THE DETERMINATION OF EARNINGS

Analysis of descriptive statistics and income distribution patterns provides early indication that sexual orientation does influence occupational and economic position in the workforce. Econometric analysis fully reveals the nature and strength of sexuality's influence in labor market outcomes. The study consists of primary OLS regressions to detect the role of sexual orientation in the determination of annual earnings, and secondary analyses to confirm the primary results and to test for any shortcomings in the primary methodology. The econometric study tests the hypothesis that sexual orientation is a significant and important predictor of worker earnings. As discussed above, the prior expectations are that the earnings effects of sexual orientation are negative for open gay and bisexual men, and theoretically ambiguous for open lesbian and bisexual women.

The Primary Earnings Determination Models

The primary regression analyses create a model to examine the role of sexual orientation as a determinant of worker earnings, controlling for other factors that predict worker income. The pooled General Social Survey data are analyzed as two discrete pools under the assumption that the labor market processes may be different for male and female workers. This study employs

models based on standard OLS wage-determination models, with logged real annual earnings from work as the dependent variable. As independent variables, the models incorporate several measures of human capital investment: years of education, potential experience, and the square of potential experience.⁶ Demographic and occupational controls consist of dummy variables for race, residence in one of the twelve largest cities or a suburb of those cities, geographic region, and occupational category. A trend variable is included to capture any secular effects introduced into the dataset by the pooling of data over a seven-year period; for example, it might be expected that changes in real wages have occurred in the 1988-95 period that the income data describe. The effects of sexual orientation on earnings are captured by dummy variables for status as an unmarried heterosexual; masked gay, lesbian, or bisexual; and open gay, lesbian, or bisexual. In the models, married heterosexuals are specified as the default group.

For the separate male and female subgroups, regression results from the two primary specifications of the earnings model are reported. The first model specification most closely resembles that tested in Badgett (1995); in which one-digit occupational controls are employed to address the effects of disproportionate representation among occupations. The data sample is limited to full-time workers. This restriction intends to limit the variability of hours worked, on which the GSS does not provide data. The second model resembles the first but expands the occupational controls to the two-digit level to account better for the evident subclustering of open gays, lesbians, and bisexuals within occupational categories.

Primary Econometric Results for Male Workers

The OLS regression results for the sample of male workers are reported in Table 4, Columns 1 and 2. For each of the models, the coefficient estimates on the human capital, demographic, and occupational category variables have the customary and expected sign. Most of

⁶ Where potential experience equals age – years of education – five.

the estimated coefficients are significant at the 1% level. The primary exception to this pattern of significance and consistency with prior expectations are the coefficients on the dummy variables for black race and other race (*i.e.*, non-black, non-white). In none of the four model specifications do parameter estimates for either of the race controls satisfy the criteria for statistical significance. While the signs of the estimates are largely consistent with the expectations that the effects of racial bias would entail a wage penalty for non-white workers, the estimates' magnitude is less than might be expected. For both models, the estimate for the black race dummy variable is -0.06, which implies a wage penalty of just 5.8% compared to white workers.⁷

[INSERT TABLE 4]

For male workers, the regression analysis demonstrates consistency with previous studies that have shown single men to have lower earnings than their married peers (Hill 1979). The parameter estimates for both model specifications are significant at the 1% level in a two-tailed test, and imply a wage penalty in the range of 13.9% for unmarried heterosexual workers. The group of masked gay and bisexual men would seem as well to face a wage penalty. Parameter estimates on dummy variable for this group are in the range of -0.19 to -0.20, implying a wage penalty between 17.3% and 18.1%. None of the estimates, however, satisfies the criteria for statistical significance.

For the primary group of interest, open gay and bisexual workers, OLS regressions return coefficients strongly significant and negative. The first model—employing one-digit occupational controls—generates a parameter estimate of -0.38, statistically significant at the 1% level. The estimate implies a wage penalty of 31.6% associated with non-normative sexual orientation. Introducing more refined occupational controls with the second model reduces the parameter

⁷ The failure of the race dummy to return significant estimates parallels the findings of Badgett (1995).

estimate slightly and suggests a wage penalty of 30.2%. The incorporation of two-digit occupational controls also improves goodness of fit, with adjusted R-squared increasing to 0.33.

Primary Econometric Results for Female Workers

As with the subset of male workers, OLS regressions on the two primary model specifications return coefficient estimates on human capital, demographic and occupational control variables that are largely consistent in sign and magnitude with prior expectations (Table 4, Columns 3 and 4). Additionally, the estimates are mostly significant at the 1% level. Once again, however, the estimates on the race variables are problematic; indeed, the estimate on the black race dummy is near zero, and statistically it must be considered as such with absolute t-values no greater than 0.3 in either of the regressions. Among the occupational variables for which estimates fail reasonable measures of statistical confidence, all represent categories that comprise 1.1% or less of the female worker pool. Thus, the lack of significant findings for certain occupation measures is likely attributable to the paucity of relevant observations.

The regression results on the subset of female workers reveal a dramatic departure from results long reported in literature on the role of gender in the determination of wages. Specifically, the anticipated wage effect of marital status—that unmarried women will *ceteris paribus* earn more than married women—cannot be demonstrated in this study with any confidence. In both primary regressions, there is no evidence that the parameter estimate on the variable for unmarried women is significantly different from zero.

For the group of open lesbian and bisexual workers, in contrast, the parameter measures are more consistent in their significance. Using the basic model with one-digit occupational controls, the OLS regressions estimate the coefficient on the proxy variable signifying an open lesbian or bisexual orientation to be positive and significant at the 5% level. The marginal effect of

an open lesbian or bisexual orientation is a wage premium of 23.4%. The parameter estimate declines in magnitude and significance with the addition of the more refined two-digit occupational controls. Still significant, though at the 10% level,⁸ the parameter value of 0.16 suggests a wage premium for orientation equivalent to 17.4%. The diminished marginal effect of a non-normative sexual orientation associated with the introduction of more nuanced occupational controls suggests that part of open lesbian and bisexual women's wage advantage may stem from disproportionate representation in better-paying occupational categories.

Supplemental Econometric Tests on the Pool of Female Workers

One of the challenges of building a satisfactory earnings determination model for the group of female workers lies in the difficulty of explicitly incorporating such productivity-related factors as labor-force attachment. Because women possess sole capacity for the bearing of children and retain primary responsibility for their rearing, human capital theorists have argued that part of the wage differential attributed to gender may in fact measure differing levels of labor-force attachment (Becker 1991). Responsibility for the care of minor children by women who also participate in wage labor results in lower levels of productivity in market labor and therefore lower wages. Also, it is argued that because women with children often take breaks from market work to concentrate solely on domestic labor, there is a deterioration of human capital which results in lower productivity and wages when these return full-time to the paid labor pool (Polachek 1975a).

These issues typically are raised in the context of discussions of the persistence of gap in wages attributed to gender. The present study focuses on income differentials *within* a gender group. Nonetheless, the issue over the effect of children on labor-force attachment, and on

⁸ More specifically, the t-value of 1.875 implies that the likelihood of the true value of the parameter estimate's being no different than zero is 6% in a two-tailed test.

expected productivity and compensation remains relevant. Precisely because differential rates of motherhood are evident between open lesbian and bisexual women and heterosexual women, and between unmarried heterosexual women and married heterosexual women (see Table 2), a concern emerges that some portion of the income differentials attributed to orientation actually results from differences in unmeasured productivity factors. After all, 84% of married heterosexual female workers have borne a child, compared to only 62% of unmarried heterosexuals and just a quarter of the open lesbian and bisexual workers. The issue is of greater concern because the GSS does not offer an explicit measure of actual experience. Because women with children are more likely to take time off from the paid work force, there is the possibility in these cases of a significant divergence between actual experience and the proxy measure of potential experience. To address the potential of unobserved human capital and productivity issues being wrongly attributed to the orientation variables, several supplemental OLS model specifications were tested. The estimates generated from these specifications are reported in Table 5.

[INSERT TABLE 5]

The first method involves the introduction of a Heckman correction to the standard model to address problems of selection bias. Because there may be implicit and unmeasured factors affecting the determination of income correlated to orientation—in particular, open lesbian and bisexual women may show greater attachment to the full-time labor force—the OLS regression estimates may be biased. The Heckman correction used here first models the likelihood of respondent's being in the full-time labor force, then introduces a correction term into the OLS income determination model. The results of the Heckman-corrected OLS regression are reported in Column 1 of Table 5. As can be seen by a comparison of the bias-corrected model and the model on which it is based (see Table 4, Column 4), the introduction of the selection-bias

correction term has little effect on the parameter estimates. Some of the parameter estimates do change signs, but these estimates were not significantly different from zero in the original model and continue to be insignificant in the corrected model. The parameter estimate for open gay or bisexual orientation does double in magnitude (implying a marginal impact of 37.7%), but concerns over the stability of the Heckman procedure suggest some care in the interpretation of this result.

A more straightforward method is available to address concerns that income differentials attributed to orientation may be in part determined by unmeasured differences in labor-force attachment. Because the core of this concern relates to the presence and demands of minor children on a woman's labor energy, supplemental models are tested in which the data sample is limited to only those women without own children. The results of these supplemental regressions on the subset of women without own children are reported in columns 2 and 3 of Table 5. The smaller sample size of 584 full-time female workers negatively impacts the t-values in many cases, but the parameter estimates are remarkably consistent with those produced by the same models using the less-restrictive dataset (see Table 4). In the model using the group of full-time workers and one-digit occupational controls, the coefficients on the proxies for unmarried heterosexuals and masked lesbian and bisexuals are, as before, statistically indistinguishable from zero. The estimated parameter for open lesbian and bisexual orientation increases to 0.23, implying a marginal effect of 25.9%, and retains significance at the 5% level.

The consistency of results between the regressions using all full-time female workers and those using only full-time female workers without own children remains when using the two-digit occupational controls as well. Again, the parameters for unmarried heterosexuals and masked lesbians and bisexuals are small and insignificant. The coefficient estimate of 0.21 for open

lesbian/bisexual orientation is again significant at the 5% level, and it is markedly larger in magnitude than the estimate of 0.16 derived from the comparable primary regression.

The supplemental regressions therefore essentially confirm the findings of the primary model specifications for women workers. If the Heckman bias-corrected model differs in any substantial way from the primary model on which it is based, it is to suggest an even greater impact of an open lesbian or bisexual orientation. The restriction of the sample of women workers to those without own children also confirms the primary results. In each of the models targeting full-time workers, the supplemental regressions return parameter estimates on the proxy for open lesbian or bisexual orientation that are somewhat larger than in the primary models. Further, the estimates for this variable in the supplemental regressions are significant at the 5% level. Overall, it may be asserted that the primary regressions on female workers appear reliable and free from manifest bias.

DISCUSSION AND CONCLUSIONS

The econometric evidence presented in this study demonstrates the existence of a strong relationship between sexual orientation and earnings from work. Supplemental tests of the results for both male and female workers reveal the estimated parameters for unmarried lesbian, gay, and bisexual persons to be quite robust.⁹ For men, a persistently significant, large, and negative wage

⁹ Additional model specifications have been tested, but the results are not reported here. One of these models model incorporates a dummy variable for union membership into the primary model using two-digit occupational controls. *Ceteris paribus*, this model would be the preferred specification as a primary regression. Because the question regarding union membership was not asked of all respondents however, the additional information arising from the variable entails the sacrifice of some two-thirds of the observations. Another unreported model expands the dataset to include both part- and full-time workers. A dummy variable for part-time status is introduced to capture the earnings annual differentials arising from fewer hours worked and expected lower hourly compensation levels.

For both genders, these model specifications largely confirm the sign, magnitude, and significance of the parameter estimates reported for the primary models. The points of divergence are few. For women, expanding the sample to include both part- and full-time workers does not essentially change the magnitude or sign of the parameter estimate for open lesbian/bisexual status; the estimate does become significant at the 5% level however. For men, this model produces estimates wholly consonant with those of the primary regressions. Including union status in the model specification for full-time workers results, as expected, in generally lower absolute t-values for the estimates, an effect of the much-conscripted database. For men, the parameter estimate on open gay/bisexual orientation decreases in magnitude to -0.25 (significant at the 5% level). For

differential is associated with an open gay or bisexual orientation. Others things being equal, open gay and bisexual men are predicted to earn 30% to 32% less than married heterosexual men.

These results should be seen to confirm the findings of a negative wage differential associated with a gay or bisexual orientation among male workers first reported by Badgett (1995), though the magnitude of the differential is larger yet.

For women, in contrast, the net impact of sexual orientation in the labor market is revealed to be positive. Relative to other comparable married heterosexual women, open lesbian and bisexual women report earnings 17% to 38% higher, with the most reliable estimates of the marginal impact of orientation falling in the range of 17 to 26%. These results are significant and relatively constant across a wide array of model specifications. The findings reported here for lesbian and bisexual women stand in sharp contrast to those reported by Badgett. The significant findings for lesbian and bisexual female workers in this study likely result from the better performance of the alternative orientation proxy and the availability of a larger database. It must be recalled, of course, that the measured wage premium comes on top of wages previously diminished by the impact of gender; that is, lesbian women appear to earn more than other female workers but continue to earn less than the group of men as a whole.

The fact that sexual orientation has significant but opposite effects on the earnings of male and female workers undermines efforts to attribute measured wage differentials solely to workplace attitudes about homosexuality. Such an explanation requires one to assert that these attitudes effect a large and significant wage penalty against non-heterosexual male workers but concurrently earn lesbian and bisexual female workers a substantial earnings premium. While

women, the open lesbian/bisexual orientation variable produces positive coefficient estimates larger than in primary model specifications. The parameter is estimated at 0.32, at a 10% level of significance.

Additionally, confirmatory analyses of the OLS results were performed in which the categorical income information was retained. Using the same group of explanatory variables as in the primary model specifications, an ordered probit analysis was conducted for both male and female workers. Again, these results confirm the findings of the primary OLS regressions.

reconcilable with the empirical findings, this reasoning strains credulity. Certainly, workplace attitudes toward sexual orientation may have a gender component; that is, bias against homosexuality and bisexuality may be more strongly expressed against persons of one gender than of another. Nonetheless, it seems unlikely that the wage effects would differ in sign rather than solely magnitude.

A more probable explanation for the disparate earnings effects of sexual orientation across genders may be found in treating workplace bias as but one factor related to orientation that influences earnings outcomes. Workplace bias that might negatively impact the wages of lesbian and bisexual women appears to be offset by other labor-market factors. The most influential of these factors stems from subtle occupational clustering effects not adequately captured by the two-digit controls in this study or the one-digit controls employed elsewhere (Badgett 1995). Case-level analysis of occupational patterns associated with sexual orientation points to trends that are both highly nuanced and gender-specific, suggesting that parameter estimates may overestimate the direct effect of orientation on earnings. Lesbian and bisexual women are revealed to be unusually successful in gaining employment in largely male-dominated—and typically better remunerating—occupational categories. For gay and bisexual men, in contrast, overrepresentation in female-identified occupations likely further depresses returns to human capital attributes relative to other male workers. The full extent of these clusters may not be adequately captured by two-digit occupational controls. A more thorough accounting of the occupational effects related to sexual orientation requires incorporation of measures which capture the orientation and gender composition of occupations at the three-digit level—requiring a substantially larger sample than that available with the General Social Survey.

Other factors may also be relevant in explaining the sharply different impact of sexual orientation on male and female earnings. In particular, there may be rewards to gender attributes

that, in effect, become associated with particular sexual orientations. As non-participants in the institution of heterosexual marriage, lesbian women and gay men may be perceived as rejecting socially normative roles. To the extent that the labor-market returns to marriage differ across genders, however, non-heterosexual workers' apparent nonconformity to societal norms may have disparate payoffs across genders. Non-marriage among male workers may be penalized by the labor-market while that of female workers treated more ambivalently. Additionally, it may be that adherence to ideals of masculinity is rewarded by employers, but adherence to ideals of femininity penalized.

Importantly, the inclusion of sexual orientation in the earnings-determination model appears to eliminate marital status as a significant predictor of earnings from work for women and significantly reduces its importance for male workers. This result suggests that the long-reported role attributed to marital status in studies of wage differentials related to gender may need be qualified. Disaggregation of the effects of gender, marital status, and sexual orientation reveals that the predictive role of sexual orientation has wrongly been subsumed under the guise of marital status. The long-described earnings hierarchy which placed married men at the top, followed by unmarried men, unmarried women, and finally married women is modified with the introduction of sexual orientation. Married heterosexual men continue to enjoy the greatest earnings advantage, but they are now followed by unmarried heterosexual men, then gay, lesbian, and bisexual men and women, and finally all heterosexual women. The econometric evidence produced in this study reveals the centrality of sexual orientation in shaping the earnings patterns of workers in the United States.

The very strength of the sexual orientation proxy within a gender of workers, and the clear disparity of the results across genders, support the at-once important and Janus-faced function of the variable. The demonstrable income disadvantage experienced by open gay and bisexual men

needs to be reconciled to the apparent relative success of lesbian and bisexual women. Earlier portrayals of lesbian, gay, and bisexual persons as unusually successful and wealthy, or alternatively, as clear financial victims of sexual orientation discrimination, are belied by the strong and disparate results across genders. Given the seeming conflict in the earnings patterns of men and women, earlier arguments about the effects of sexual orientation discrimination must be qualified. Preliminary evidence from analysis of the descriptive statistics suggests that a large—and largely unexplained—component of the income differentials may be attributable to highly nuanced occupational clustering related to sexual orientation and gender. Further study of occupational patterns related to sexual orientation for each gender appears merited, but it will need be conducted with much greater specificity than studies at the one- or even two-digit occupational levels.

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TABLE 1
DESCRIPTIVE STATISTICS FOR FULL- AND PART-TIME WORKERS
MALE RESPONDENTS BY ORIENTATION

<i>Variable</i>	<i>Heterosexual</i>		<i>Gay/Bisexual</i>		<i>TOTAL</i>
	<i>Married</i>	<i>Unmarried</i>	<i>Married</i>	<i>Unmarried</i>	
N	1828	1115	18	78	3039
Percent of All Male Workers	60.2%	36.7%	0.6%	2.6%	100.0%
Mean Annual Earnings (constant 1992\$)	\$37,179	\$26,184	\$22,954	\$27,415	\$32,864
Education (years)	14.0	13.6	12.6	14.5	13.8
Age	41.1	34.8	38.1	36.9	38.7
Potential Experience	22.2	16.3	20.4	17.4	19.9
Race:					
Black Race	6.5%	12.4%	27.9%	10.3%	8.9%
Other Race	4.5%	4.9%	11.1%	6.4%	4.7%
Resides in Large SMSA	17.7%	18.1%	22.2%	38.5%	18.4%
Part-Time	4.6%	14.7%	0.0%	16.7%	8.6%
Union Member	18.6%	13.4%	0.0%	7.7%	16.5%
Occupation:					
Managerial & Professional Specialty	31.7%	24.1%	27.8%	44.9%	29.2%
<i>Exec., Admin., Managerial</i>	16.0%	12.2%	5.6%	20.5%	14.6%
<i>Professional Speciality</i>	15.7%	11.9%	22.2%	24.4%	14.6%
Technical, Sales, & Admin. Support	19.4%	20.8%	22.2%	28.2%	20.1%
<i>Technician & Related Sppt.</i>	3.8%	3.6%	5.6%	2.6%	3.7%
<i>Sales Occupations</i>	9.8%	10.4%	11.1%	11.5%	10.1%
<i>Administrative Support (inc. Clerical)</i>	5.7%	6.8%	5.6%	14.1%	6.3%
Service	8.5%	13.0%	0.0%	10.3%	10.1%
<i>Private Household</i>	0.0%	0.5%	0.0%	0.0%	0.2%
<i>Protective Service</i>	2.9%	3.5%	0.0%	2.6%	3.1%
<i>Armed Forces</i>	1.4%	0.7%	0.0%	0.0%	1.1%
<i>Service, except Prot. & Hshd.</i>	4.3%	8.3%	0.0%	7.7%	5.8%
Farming, Fishing, & Forestry	2.7%	2.6%	0.0%	0.0%	2.6%
Precision Prod., Craft, & Repair	21.1%	18.6%	11.1%	2.6%	19.6%
<i>Mechanics and Repairers</i>	8.2%	6.3%	0.0%	0.0%	7.2%
<i>Construction Trades</i>	8.4%	7.8%	11.1%	2.6%	8.1%
<i>Extractive Occupations</i>	0.3%	0.2%	0.0%	0.0%	0.2%
<i>Precision Production</i>	4.2%	4.3%	0.0%	0.0%	4.1%
Operators, Fabricators, & Laborers	16.7%	20.9%	38.9%	14.1%	18.3%
<i>Machine Optrs., Assemblers</i>	6.8%	7.1%	0.0%	5.1%	6.8%
<i>Transport., Material Moving</i>	6.3%	6.3%	27.8%	3.8%	6.4%
<i>Haulers, Helpers, Laborers</i>	3.6%	7.5%	11.1%	5.1%	5.1%

Notes: Variable means for respondents ages 18-64 working part-time or full-time, based on author's calculations from GSS data. Reported occupational categories and subcategories represent the one- and two-digit divisions of U. S. Census Bureau coding. Due to the limited number of respondents, subcategory detail is not shown for farming, fishing, and forestry workers.

TABLE 2
DESCRIPTIVE STATISTICS FOR FULL- AND PART-TIME WORKERS
FEMALE RESPONDENTS BY ORIENTATION

Variable	Heterosexual		Lesbian/Bisexual		TOTAL
	Married	Unmarried	Married	Unmarried	
N	1567	1316	15	61	2959
Percent of All Female Workers	53.0%	44.5%	0.5%	2.1%	100.0%
Mean Annual Earnings (constant 1992\$)	\$20,107	\$19,851	\$18,859	\$23,689	\$20,068
Education (years)	13.8	13.8	12.9	14.4	13.8
Age	39.8	36.5	40.5	34.3	38.2
Potential Experience	21.1	17.7	22.6	14.8	19.5
Race:					
Black Race	7.5%	20.3%	0.0%	11.5%	13.2%
Other Race	4.4%	4.6%	6.7%	8.2%	4.6%
Resides in Large SMSA	17.8%	22.6%	20.0%	24.6%	20.1%
Part-Time	26.2%	19.1%	40.0%	16.4%	22.9%
Union Member	10.5%	12.9%	0.0%	25.0%	11.6%
Ever Borne Children	84.0%	61.7%	80.0%	24.6%	72.8%
Occupation:					
Managerial & Professional Specialty	32.4%	28.6%	20.0%	31.1%	30.6%
<i>Exec., Admin., Managerial</i>	12.3%	10.3%	13.3%	6.6%	11.3%
<i>Professional Speciality</i>	20.1%	18.3%	6.7%	24.6%	19.3%
Technical, Sales, & Admin. Support	41.7%	42.7%	20.0%	23.0%	41.6%
<i>Technician & Related Sppt.</i>	4.3%	4.6%	0.0%	4.9%	4.4%
<i>Sales Occupations</i>	11.8%	11.9%	13.3%	8.2%	11.8%
<i>Administrative Support (inc. Clerical)</i>	25.6%	26.3%	6.7%	9.8%	25.5%
Service	14.8%	19.1%	13.3%	31.1%	17.1%
<i>Private Household</i>	1.2%	1.7%	0.0%	0.0%	1.4%
<i>Protective Service</i>	0.6%	0.8%	0.0%	9.8%	0.9%
<i>Armed Forces</i>	0.1%	0.2%	0.0%	1.6%	0.1%
<i>Service, except Prot. & Hshd.</i>	12.9%	16.5%	13.3%	19.7%	14.6%
Farming, Fishing, & Forestry	0.7%	0.2%	0.0%	0.0%	0.4%
Precision Prod., Craft, & Repair	2.1%	2.1%	6.7%	6.6%	2.2%
<i>Mechanics and Repairers</i>	0.3%	0.5%	0.0%	3.3%	0.5%
<i>Construction Trades</i>	0.4%	0.2%	6.7%	1.6%	0.3%
<i>Extractive Occupations</i>	0.0%	0.0%	0.0%	0.0%	0.0%
<i>Precision Production</i>	1.4%	1.4%	0.0%	1.6%	1.4%
Operators, Fabricators, & Laborers	8.3%	7.4%	40.0%	8.2%	8.0%
<i>Machine Optrs., Assemblers</i>	5.7%	4.8%	20.0%	3.3%	5.3%
<i>Transport., Material Moving</i>	1.2%	0.9%	6.7%	1.6%	1.1%
<i>Haulers, Helpers, Laborers</i>	1.4%	1.7%	13.3%	3.3%	1.6%

Notes: Variable means for female respondents ages 18-64 working part-time or full-time, based on author's calculations from GSS data. Reported occupational categories and subcategories represent the one- and two-digit divisions of U. S. Census Bureau coding. Due to the limited number of respondents, subcategory detail is not shown for farming, fishing, and forestry workers.

TABLE 3
INCOME DISTRIBUTION PATTERNS FOR FULL-TIME WORKERS
BY GENDER AND SEXUAL ORIENTATION

Income Category	MALE WORKERS					FEMALE WORKERS					FT Workers, Both Sexes
	Heterosexual Married	Unmarried	Gay/Bisexual Married	Unmarried	FT Male Workers	Heterosexual Married	Unmarried	Lesbian/Bisexual Married	Unmarried	FT Female Workers	
Income Quintile											
I. < = \$13,999	8.9%	19.3%	11.1%	19.4%	12.7%	28.6%	27.4%	33.3%	22.0%	27.9%	20.0%
II. \$14,000 - \$21,249	13.6%	17.8%	38.9%	24.1%	15.5%	24.3%	25.9%	22.3%	18.0%	24.9%	20.0%
III. \$21,250 - \$28,249	17.7%	21.0%	33.3%	16.2%	18.8%	20.8%	21.2%	22.2%	22.0%	22.0%	19.9%
IV. \$28,250 - \$39,999	24.8%	24.0%	5.6%	17.7%	24.3%	16.3%	17.0%	11.1%	20.0%	16.7%	20.4%
V. > = \$40,000	35.0%	17.9%	11.1%	22.6%	28.7%	10.0%	8.5%	11.1%	18.0%	9.5%	19.7%
Wealthiest 5%											
> = \$63,325	11.9%	5.0%	0.0%	3.2%	9.3%	2.3%	0.7%	0.0%	4.0%	1.6%	5.0%
Median Income (1992\$)	\$31,700	\$25,042	\$21,398	\$24,212	\$28,937	\$20,216	\$20,216	\$15,588	\$23,807	\$20,216	\$24,618

Source: Author's calculations from General Social Survey data, 1989-96.

Notes: Income quintile distribution patterns for paid full-time workers by gender and orientation, referenced to pool of paid full-time workers by gender and to paid full-time workers of both sexes. Figures are denominated in constant 1992 dollars.

TABLE 4
PRIMARY OLS REGRESSION RESULTS ON LOGGED REAL ANNUAL INCOME
FULL-TIME MALE AND FEMALE WORKERS

<i>Variable</i>	<i>Column 1</i> <i>Male Workers</i> <i>One-Digit Occup</i>		<i>Column 2</i> <i>Male Workers</i> <i>Two-Digit Occup</i>		<i>Column 3</i> <i>Female Workers</i> <i>One-Digit Occup</i>		<i>Column 4</i> <i>Female Workers</i> <i>Two-Digit Occup</i>	
	Coefficient Estimate	t-value	Coefficient Estimate	t-value	Coefficient Estimate	t-value	Coefficient Estimate	t-value
Intercept	8.39 ***	(92.1)	8.25 ***	(85.9)	7.56 ***	(72.7)	7.54 ***	(70.8)
Orientation:								
Unmarried Heterosexual	-0.15 ***	(6.1)	-0.15 ***	(6.0)	0.02	(0.9)	0.02	(0.7)
Masked Gay/Bisexual	-0.20	(1.5)	-0.19	(1.5)	-0.01	(0.0)	0.01	(0.1)
Open Gay/Bisexual	-0.38 ***	(5.1)	-0.36 ***	(4.9)	0.21 **	(2.4)	0.16 *	(1.9)
Human Capital:								
Education (years)	0.08 ***	(14.4)	0.07 ***	(14.0)	0.09 ***	(14.0)	0.09 ***	(13.8)
Potential Experience	0.05 ***	(13.5)	0.05 ***	(13.2)	0.04 **	(9.8)	0.04 ***	(9.8)
Squared Potential Experience	0.00 ***	(9.4)	0.00 ***	(9.2)	0.00 ***	(7.0)	0.00 ***	(7.0)
Race:								
Black Race	-0.06	(1.5)	-0.06	(1.5)	0.01	(0.2)	0.01	(0.3)
Other Race	-0.04	-(0.8)	-0.02	(0.4)	-0.11 *	(1.8)	-0.11 *	(1.8)
Resides in Large Metropolitan Area	0.19 ***	(6.2)	0.18 ***	(5.9)	0.15 ***	(4.6)	0.15 ***	(4.6)
Geographic Region:								
Northeast	0.12 ***	(3.7)	0.12 ***	(3.9)	0.17 ***	(4.6)	0.18 ***	(4.7)
Midwest	0.10 ***	(3.3)	0.09 ***	(3.2)	0.06 *	(1.8)	0.06 *	(1.8)
West	0.04	(1.3)	0.04	(1.4)	0.10 ***	(2.8)	0.10 ***	(2.9)
Occupation:								
Managerial & Professional Specialty	0.27 ***	(6.2)			0.50 ***	(10.9)		
<i>Exec., Admin., Managerial</i>			0.47 ***	(7.9)			0.55 ***	(10.3)
<i>Professional Specialty</i>			0.40 ***	(6.5)			0.46 ***	(8.8)
Technical, Sales, & Admin. Support	0.13 ***	(2.8)			0.36 ***	(9.0)		
<i>Technician & Related Sppt.</i>			0.41 ***	(5.4)			0.50 ***	(7.0)
<i>Sales Occupations</i>			0.31 ***	(4.9)			0.30 ***	(5.5)
<i>Administrative Support (inc. Clerical)</i>			0.19 ***	(2.8)			0.37 ***	(8.3)
Service	†				†			
<i>Private Household</i>			0.26	(0.5)			-0.34 **	(2.0)
<i>Protective Service</i>			0.37 ***	(4.7)			0.22 *	(1.7)
<i>Armed Forces</i>			0.23 **	(2.1)			0.37	(1.1)
<i>Service, except Prot. & Hshd.</i>			†				†	
Farming, Fishing, & Forestry	-0.10	(1.2)	0.06	(0.7)	0.09	(0.4)	0.10	(0.4)
Precision Prod., Craft, & Repair	0.18 ***	(4.1)			0.42 ***	(4.8)		
<i>Mechanics and Repairers</i>			0.39 ***	(6.0)			0.71 ***	(4.3)
<i>Construction Trades</i>			0.26 ***	(4.0)			0.06	(0.3)
<i>Extractive Occupations</i>			0.73 ***	(3.1)			††	
<i>Precision Production</i>			0.41 ***	(5.6)			0.39 ***	(3.5)
Operators, Fabricators, & Laborers	0.06	(1.3)			0.29 ***	(5.3)		
<i>Machine Optrs., Assemblers</i>			0.26 ***	(4.0)			0.32 ***	(5.2)
<i>Transport., Material Moving</i>			0.30 ***	(4.5)			-0.01	(0.1)
<i>Haulers, Helpers, Laborers</i>			0.05	(0.7)			0.38 ***	(3.4)
Trend Variable	-0.01 **	(2.1)	-0.01 **	(2.1)	0.01 *	(1.8)	0.01 *	(1.8)
Adjusted R-squared	0.31		0.33		0.29		0.29	
N	2566		2566		2064		2064	

*** significant at the 1% level

** significant at the 5% level

* significant at the 10% level

† default occupational dummy for OLS regressor

†† No relevant observations applicable to occupational category

TABLE 5
SECONDARY OLS REGRESSION RESULTS ON LOGGED REAL ANNUAL INCOME
FULL-TIME FEMALE WORKERS WITHOUT OWN CHILDREN

Variable	Column 1 Heckman-Corrected Two-Digit Occup		Column 2 FT w/o Children One-Digit Occup		Column 3 FT w/o Children Two-Digit Occup	
	Coefficient Estimate	t-value	Coefficient Estimate	t-value	Coefficient Estimate	t-value
Intercept	6.75 ***	(8.0)	7.75 ***	(39.5)	7.79 ***	(39.2)
Orientation:						
Unmarried Heterosexual	0.13	(1.1)	-0.03	(0.6)	-0.04	(0.9)
Masked Gay/Bisexual	-0.15	(0.6)	-0.04	(0.1)	-0.03	(0.1)
Open Gay/Bisexual	0.32 *	(1.7)	0.23 **	(2.2)	0.21 **	(2.0)
Human Capital:						
Education (years)	0.11 ***	(5.5)	0.07 ***	(5.7)	0.07 ***	(6.0)
Potential Experience	0.07 ***	(2.9)	0.07 ***	(8.0)	0.07 ***	(7.6)
Squared Potential Experience	0.00 **	(2.6)	0.00 ***	(5.2)	0.00 ***	(4.7)
Race:						
Black Race	0.04	(0.8)	0.14	(1.5)	0.11	(1.3)
Other Race	-0.08	(1.1)	-0.10	(0.8)	-0.09	(0.8)
Resides in Large SMSA	0.13 ***	(3.5)	0.18 ***	(3.1)	0.17 ***	(3.0)
Geographic Region:						
Northeast	0.04	(0.3)	0.11 *	(1.7)	0.11 *	(1.7)
Midwest	-0.07	(0.5)	0.06	(0.9)	0.03	(0.5)
West	0.00	(0.0)	-0.01	(0.2)	-0.01	(0.1)
Occupation:						
Managerial & Professional Specialty			0.61 ***	(6.9)		
Exec., Admin., Managerial	0.54 ***	(10.3)			0.56 ***	(5.5)
Professional Specialty	0.46 ***	(8.8)			0.49 ***	(4.9)
Technical, Sales, & Admin. Support			0.48 ***	(5.7)		
Technician & Related Sppt.	0.50 ***	(7.0)			0.47 ***	(3.7)
Sales Occupations	0.30 ***	(5.5)			0.44 ***	(4.2)
Administrative Support (inc. Clerical)	0.37 ***	(8.3)			0.36 ***	(4.0)
Service			†			
Private Household	-0.34 **	(2.0)			-1.30 ***	(3.9)
Protective Service	0.22 *	(1.7)			-0.12	(0.5)
Armed Forces	0.38	(1.1)			††	
Service, except Prot. & Hshd.	†				†	
Farming, Fishing, & Forestry	0.10	(0.5)	††		††	
Precision Prod., Craft, & Repair			0.27	(1.6)		
Mechanics and Repairers	0.72 ***	(4.3)			0.54 **	(2.0)
Construction Trades	0.06	(0.3)			-0.01	(0.0)
Extractive Occupations	††				††	
Precision Production	0.39 ***	(3.6)			-0.01	(0.0)
Operators, Fabricators, & Laborers			0.10	(0.8)		
Machine Optrs., Assemblers	0.32 ***	(5.2)			0.26 *	(1.8)
Transport., Material Moving	-0.01	(0.1)			-0.56 *	(1.9)
Haulers, Helpers, Laborers	0.38 ***	(3.4)			-0.29	(1.4)
Part-Time						
Trend Variable	0.01 *	(1.8)	0.00	(0.2)	0.01	(0.5)
Lambda	0.92	(0.9)				
Adjusted R-squared	0.29		0.33		0.35	
N	2064		584		584	

*** significant at the 1% level

† default occupational dummy for OLS regression

** significant at the 5% level

†† No relevant observations applicable to occupational category

* significant at the 10% level

METHODOLOGICAL APPENDIX: THE CONSTRUCTION AND JUSTIFICATION OF A PROXY FOR SEXUAL ORIENTATION

As in Badgett (1995), the present study relies on a proxy in the place of actual information on a respondent's orientation. The present study's approach to this issue differs from that of Badgett in two essential aspects. First, the proxy's generation relies a different set of sexual behavior questions, questions that privilege the most recent sexual behavior of a respondent. Second, the information on sexual behavior is taken together with information on a respondent's marital status to construct the orientation proxy. The effectiveness and reliability of the proxy is tested using the National Health and Social Life Survey (Laumann, et al. 1994), relative to the Badgett proxy.

Badgett's methodology relies on the relative numbers of sexual partners of each sex in determining sexual orientation—with those having at least as many same-sex as opposite-sex partners since the age of eighteen being classified as gay, lesbian, or bisexual for the purposes of econometric analysis. This approach appears however to be theoretically and empirically sub-optimal, especially with respect to the group of female respondents. Studies of sexual behavior provide substantial evidence that sexual preference and activity are not static across a life-time, and homosexual and bisexual activity is not uncommon in early adulthood (Kinsey, Pomeroy and Martin 1948; Kinsey et al. 1953; Laumann et al. 1994). Using the Badgett methodology, persons who have experimented sexually in early adulthood before settling into a monogamous heterosexual union may be counted among the lesbian, gay and bisexual group. Further, and more troublesome, much of the lesbian, gay and bisexual group is comprised of persons who are currently in a heterosexual marriage. In one of Badgett's less-restrictive definitions of the lesbian, gay and bisexual group, 23.5% of the women and 40.4% of the men are currently married. Badgett does introduce a variable into the wage determination model in an attempt to control for

the effects of marital status, but the methodology remains problematic: there is minimal justification for concluding that the wage effects of marriage are consistent across sexual orientations. Indeed, there is little reason to believe that married persons, even if behaviorally gay or bisexual, would typically experience workplace discrimination as would somebody without the cover of heterosexual marriage.

The present study forgoes Badgett's method of assigning a respondent's sexual orientation based strictly on the relative numbers of same- and opposite-sex partners in adulthood. In contrast, the proxy for sexual orientation utilized in this study focuses on sexual behavior in the more recent past and additionally takes into consideration the respondent's marital status. Specifically, a set of questions in the General Social Survey asks respondents to indicate whether their sexual partners have been exclusively male, exclusively female, or both male and female during two time frames, the previous twelve months and previous five years. In the proposed study, if a respondent's sexual partners during the previous twelve months or previous five years have been exclusively same-sex or opposite-sex, she or he is coded as behaviorally homosexual or heterosexual, respectively. Failing these criteria, a respondent whose partners have been both male and female is coded as behaviorally bisexual.¹ The use of both periods, rather than one alone, is merited for two reasons. First, the methodology is intended to privilege the most recent past. For example, a person whose sexual partners during the previous twelve months have been exclusively of the opposite sex, but whose partners during the five-year period have been both male and female, is considered behaviorally heterosexual for the purposes of the study. Second, an exclusive focus on the most recent past is less than optimal because of the significant number of

¹ Responses are also checked for internal consistency and possible coding errors. Those that are inherently contradictory result in the orientation proxy's being assigned a missing value. For example, several of the men in the NHLS sample reported having had only same-sex sexual partners in the previous twelve-month or five-year period, yet also report that they had had sex only with women since the age of eighteen.

persons who have not engaged in partnered sexual contact during the preceding twelve month period, and who would therefore be coded as missing for the purposes of econometric analysis.

Classifying a respondent as behaviorally heterosexual, homosexual, or bisexual is necessary, but not sufficient in itself, for creating a theoretically justifiable and empirically accurate proxy variable for sexual orientation. The proposed study therefore distinguishes respondents based on current marital status, as well as sexual behavior. The lesbian, gay and bisexual group of primary interest is comprised of those who are both behaviorally homosexual/bisexual and who are not currently married. This more restrictive specification focuses attention on those most likely to be self-identified as gay, lesbian, or bisexual, and who would most properly be expected to experience any effects of sexual orientation in the workplace. Additional proxies are generated for behaviorally homosexual or bisexual but currently married respondents, currently married heterosexuals, and unmarried heterosexuals. A primary advantage of this methodology is that it distinguishes more clearly the wage effects of marriage from those of sexual orientation.

Testing the Robustness of the Sexual Orientation Proxy

While the methodology to construct the sexual orientation proxy utilized for this project offers clear theoretical advantages over that utilized in previous wage studies by Badgett, there exists as well a unique opportunity to econometrically test the efficiency and robustness of the alternative orientation proxies. As discussed above, the National Health and Social Life survey, because of the relatively small subpopulation of lesbian, gay, and bisexual workers and the more limited income data, proves a sub-optimal database for an econometric study of the income effects of orientation. The NHSLS sample is, however, sufficiently large and well-suited to contribute to the justification of a proxy variable for sexual orientation.

The ability to test and justify the proxies stems from the close coordination of the National Health and Social Life Survey and the General Social Survey. The primary advantage of the NHSLS is that respondents were explicitly asked to identify their sexual orientation. The NHSLS, like the General Social Survey, is a product of the National Opinion Research Center at the University of Chicago. One of the benefits of the relationship is that the sexual behavior questions introduced into the GSS in 1989 were incorporated *verbatim* into the NHSLS survey instrument. This correspondence presents a unique opportunity to use the NHSLS for testing the validity of a sexual orientation proxy for use with the GSS.

Thus, the proxy variable for sexual orientation utilized by Badgett and that used for the present study are tested for their respective effectiveness as predictors of self-reported lesbian, gay, or bisexual orientation. For each subset of male and female respondents, two independent regressions are performed using a logit model to test the discrete variables for predictive capability. The results of the tests of the performance of the respective orientation proxies reveal the proxy used in this study to perform only marginally better than the does the Badgett proxy in predicting the self-reported orientation of men. The alternative proxy proves substantially better than the Badgett proxy, however, in correctly predicting the sexual orientation of female respondents.

For male respondents in the NHSLS survey, the Badgett proxy correctly predicts 87.5% of the self-identified gay or bisexual respondents. The alternative proxy used in this study performs marginally better, predicting 91.9% of the gay and bisexual respondents. More importantly, the rate of false positives—respondents predicted as gay or bisexual who self-report their orientation as heterosexual—is significantly lower for the alternative proxy at 5.6% than for the Badgett proxy (12.5%). Another important advantage is the alternative proxy's economy in the use of already scarce data on non-heterosexual persons. The sexual behavior questions relied

in construction of the Badgett proxy have high rates of incomplete responses resulting in the loss of significant chunks of data. Among the 37 self-identified gay or bisexual men in the NHSLs sample, five of the cases (13.5%) are eliminated because of missing data on the sexual behavior questions. None of the self-identified gay or bisexual men are eliminated with the alternative proxy specification.

[INSERT TABLE A-1]

For the group of female respondents, the advantages of the alternative proxy are even more marked. Of the 26 lesbian or bisexual women in the NHSLs sample, the Badgett proxy eliminates three because of missing sexual behavior data. Of the remaining twenty-three, the Badgett proxy accurately predicts thirteen, or 56.5%, of the lesbian and bisexual respondents. In contrast, the alternative proxy keeps all relevant cases and correctly identifies twenty, or 76.9%, of the lesbian and bisexual women. The rate of false positives for the Badgett proxy was 18.8% for the Badgett proxy, and 13.0% for the alternative formulation. It must be said, however, that based on the logit tests of both proxy specifications, prediction of a lesbian or bisexual orientation among women based on sexual behavior appears to be less reliable than was the case for gay and bisexual men. Nonetheless, the alternative proxy emerges as a generally strong predictor of an individual's self-identified sexual orientation, and its use in studies focusing on sexual orientation is well-justified in absence of actual data on respondent's self-reported sexual identity. In the attribution of sexual orientation to both male and female respondents, the alternative proxy demonstrates clear strengths in its predictive accuracy, its efficient use of scarce data, and its theoretical basis.

[INSERT TABLE A-2]

Table A-1
Relative Performance of Sexual Orientation Proxies
MALE NHLS RESPONDENTS

Measures of Proxy Performance	<i>Badgett Proxy</i>	<i>Alternative Proxy</i>
Overall accuracy	99.4%	99.6%
Self-identified Gay/Bisexual correctly predicted (sensitivity)		
<i>Number</i>	28	34
<i>Percent</i>	87.5%	91.9%
Self-identified heterosexual correctly predicted (specificity)		
<i>Number</i>	1198	1294
<i>Percent</i>	99.7%	99.8%
Self-identified heterosexual mispredicted as Gay/Bisexual (false positive)		
<i>Number</i>	4	2
<i>Percent</i>	12.5%	5.6%
Self-identified Gay/Bisexual mispredicted as heterosexual (false negative)		
<i>Number</i>	4	3
<i>Percent</i>	0.3%	0.2%

Source: National Health and Social Life Survey

Notes: Measures of performance based on logit estimates of behavioral proxies' capacity to predict self-identified sexual orientation

Table A-2
Relative Performance of Sexual Orientation Proxies
FEMALE NHLS RESPONDENTS

Measures of Proxy Performance	<i>Badgett Proxy</i>	<i>Alternative Proxy</i>
Overall accuracy	99.2%	99.5%
Self-identified Lesbian/Bisexual correctly predicted (sensitivity)		
<i>Number</i>	13	20
<i>Percent</i>	56.5%	76.9%
Self-Identified heterosexual correctly predicted (specificity)		
<i>Number</i>	1539	1661
<i>Percent</i>	99.8%	99.8%
Self-identified heterosexual mispredicted as Lesbian/Bisexual (false positive)		
<i>Number</i>	3	3
<i>Percent</i>	18.8%	13.0%
Self-Identified Lesbian/Bisexual mispredicted as heterosexual (false negative)		
<i>Number</i>	10	6
<i>Percent</i>	0.6%	0.4%

Source: National Health and Social Life Survey

Notes: Measures of performance based on logit estimates of behavioral proxies' capacity to predict self-identified sexual orientation