Pay Equity After the Equality Act 2010:

Does Sexual Orientation Still Matter?

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Abstract

Analyses of linked employer-employee data for Britain indicate bisexual men earn 20% less per hour than heterosexual men, *ceteris paribus*. There is no wage differential between gay and heterosexual men. Among women there is no wage gap between bisexuals and heterosexuals. However, lesbians are paid nearly 30% less than heterosexual women, unless they are employed in a workplace with an equal opportunities policy which explicitly refers to sexual orientation, whereupon there is no wage gap. Workplace sorting by sexual orientation does not affect the size of the sexual orientation wage gaps.

Key Words: sexual orientation; wages; discrimination; equal opportunities

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I. Introduction

A large literature identifies a wage gap between men and women. Accounting for differences in men's and women's observable attributes narrows the gap but it persists and remains statistically significant. This unexplained part of the wage gap is often interpreted as evidence of gender discrimination in the labour market. Wage penalties are also apparent among groups defined in terms of race, religion and age.[i] Recently analysts have examined wage gaps according to employees' sexual preferences.[ii] The research is motivated by the possibility that lesbians, gays, bisexuals and transgender (LGBT) employees may be subject to labour market discrimination. However, unlike sex or colour, one's sexual orientation may not be immediately apparent to employers or to colleagues. Thus discrimination is only likely to occur when an employee "outs" him or herself, or is "outed".

Correspondence test studies use a simple experimental technique to identify whether there is hiring discrimination based on applicants' sexual orientation. The studies send job applications to real employers that are identical in all respects, apart from the fact that they signal differences in sexual orientation. These studies reveal discrimination in hiring lesbians compared with otherwise identical heterosexual women (eg. Weichselbaumer, 2003). However, using wage decomposition techniques that are standard in the gender pay gap literature it appears lesbian women earn more than observationally equivalent heterosexual women. This positive wage return to being lesbian may arise for a number of reasons. For instance, it may be that lesbians are not subject to the traditional heterosexual division of household labour and, as such, may invest more in market-

specific human capital. Alternatively, if lesbians face greater hiring discrimination than heterosexual women they may require higher earnings to make employment worthwhile, whereupon only those with particularly high earnings potential will be observed in employment.

There is also evidence that gay men face hiring discrimination compared with observationally equivalent heterosexual men. However, although there is a positive raw wage differential associated with being gay, gay men tend to earn less than observationally equivalent heterosexual men. Identifying gay and lesbian employees through their same-sex partnerships using British *Labour Force Survey* data for the period 1996-2002 Wadsworth et al. (2005) also find a wage premium for lesbians relative to observationally equivalent women, but a wage penalty for gays relative to observationally equivalent heterosexual men. The authors suggest that gay men may benefit from the passage of anti-discrimination legislation in Britain. That legislation, which has now been in place in Britain for over a decade, was recently harmonised and replaced by the Equality Act 2010. Perhaps because of this increasing legislative focus on equal opportunities, the percentage of workplaces with written equal opportunities policies explicitly mentioning sexual orientation had risen from 69% in 2004 to 75% in 2011 (van Wanrooy et al., 2013: 116).

This article examines wage gaps by sexual orientation contributing to the literature in four ways. First, it estimates the sexual orientation wage gap using linked employer-employee data helping to identify the role of workplace sorting. The literature on

segregation by sexual orientation has been confined to occupational segregation (Plug et al., 2014; Antecol et al., 2008).[iii] Second, it controls for features of the workplace employing workers including equality practices. Third, the article is one of the first to distinguish between bisexuals and gays/lesbians.[iv] Finally, it is the first article to examine whether a wage gap persists in Britain following the passage of the new legislation intended to eliminate wage discrimination according to sexual orientation.

Analyses reveal bisexual men earn 31% less per hour than heterosexual employees, a differential that falls to 20% having controlled for demographic, job and workplace characteristics. The gap is apparent within workplaces and within detailed occupational classifications. There is no wage differential between gay and heterosexual men. Among women there is no wage gap between bisexuals and heterosexuals. However, lesbians are paid nearly 30% less than heterosexual women, unless they are employed in a workplace with an equal opportunities policy which explicitly refers to sexual orientation, whereupon there is no wage gap. Although there is evidence consistent with workplace sorting by sexual orientation it does not affect the size of the sexual orientation wage gaps.

Section II discusses the literature on wage differentials according to sexual orientation. Section III introduces the data. Section IV outlines the estimation strategy. Section V presents results and Section VI discusses the implications and concludes.

II. Wage Differentials and Sexual Orientation

In Becker's (1957) model of taste-based discrimination equally productive workers are treated differently due to the discriminatory tastes of employers, employees and customers. In the short-run these tastes can result in labour market segregation where employers pay to avoid hiring those against whom they are prejudiced, or where those fearing discrimination sort into jobs offered by more tolerant employers. This, in turn, may result in earnings discrimination if the number of job seekers in the discriminated group exceeds the number of jobs offered by tolerant employers. If, in the long-run, competition drives out discriminating employers, discrimination may disappear (Arrow, 1973). However, discrimination will persist where market competition does not drive out the prejudiced employers, where bankrupt discriminators return to the market as discriminating employees (Charles and Guryan, 2008), or where any wage penalty reflects a compensating wage differential taken by those in the discriminated group in return for employer tolerance (Martell, 2012).

Wage penalties may be suffered by socially disadvantaged groups even in the absence of explicit discrimination. For instance, some social psychologists focus on unconscious prejudice exercised by socially advantaged groups who exhibit implicit preferences for their in-group and bias against out-groups based on stereotypes (Dasgupta, 2004). Some studies find strong implicit negativity against sexual orientation minorities relative to heterosexuals which predict a number of behaviours, such as social distancing, which in a workplace setting can affect employees' ability to obtain a wage hike or promotion (Dasgupta, 2002; Dasgupta and Rivera, 2004).

Reviewing the empirical literature which tests for prejudice by comparing the earnings and occupational choices of gay, lesbian and heterosexual workers Plug et al. (2014: 125) conclude "evidence of this kind appears ambiguous (at best)". Most studies find gay men earn less than observationally equivalent heterosexual men, as Becker's taste-based discrimination model would predict. However, contrary to Becker's model, studies tend to find lesbians suffer no wage penalty relative to heterosexual women and, in many instances, receive a wage premium. Plug et al. (2014: 126) point to one exception, namely the study by Carpenter (2008) which found an income penalty for young lesbians in Australia.[v]

Although there is no comprehensive support for the taste-based model of discrimination from the studies examining links between sexual orientation and earnings, there is compelling evidence from related studies. First, most of the evidence from correspondence test studies finds a lower call back rate for gays and lesbians relative to observationally identical heterosexuals.[vi] There are some exceptions, such as Weichselbaumer's (2015) evidence that lesbians are discriminated against in Munich but not Berlin, a difference the author attributes to differences in values in the two cities. Second, there is evidence that such attitudes mediate the relationship between sexual orientation and employment and earnings outcomes (Ahmed et al., 2013), a finding which is in keeping with taste-based discrimination. Third, Plug et al. (2014) show that gays and lesbians behave in response to their perceptions regarding the incidence of prejudice by sorting themselves into occupations with more tolerant employers and co-workers -

the sort of behaviour one might anticipate if taste-based discrimination was a reality in the labour market.

The "ambiguity" in the literature on wage gaps may reflect difficulties robustly isolating that part of the wage determination process that might be attributable to employees' sexual orientation. First, whereas gender and race are easily observed by employers and co-workers sexual orientation is not. Labour market actors may only be aware of others' sexual orientation if an individual is "out" or "outed". Those who choose to "out" themselves in the labour market - or indeed to a survey agency - may be unrepresentative of all gays and lesbians, leading to biased estimates of the underlying relationship between sexual orientation and earnings (Badgett, 1995: 731-732).[vii] Second, whereas classifying employees by gender is relatively straightforward defining sexual orientation can be difficult for the analyst, and even for the employee or respondent. The literature uses an array of definitions including self-reported identity, same sex partnership, or sexual behaviours. Some may be classified as gay, lesbian or bisexual under one measure, but not others, making it harder to generalise about results. It is also rare for analysts to be able to distinguish between gay and bisexual employees. This is problematic because, as this article shows, there are substantial earnings differences between gays and bisexuals.

Third, studies identifying the effects of sexual orientation on earnings rely on comparisons between observationally equivalent homosexual and heterosexual individuals. Omitted variables bias arises in cases where the analyst lacks information

which is correlated with sexual orientation and earnings. This might be the case, for example, with respect to individual labour productivity: usually studies condition on labour market experience and qualifications, but they lack detailed information about on-the-job productivity. The absence of employer covariates in many studies also means that wage differences attributed to sexual orientation may, in fact, be due to differences in the wages offered to employees by different types of employer. This article overcomes this problem by using linked employer-employee data and by comparing wages of employees *within* the same workplace. The most comprehensive models presented condition on job quality and supportive management to account for the possibility that homosexuals and bisexuals may pay a wage penalty for working in an environment which is more tolerant of their sexuality. However, when controlling for employer and job features one needs to be cautious about conditioning on variables which are, themselves, the result of discrimination based on sexual orientation, a very real possibility in the light of the labour market segregation identified by Plug et al. (2014).

III. Data

This article analysed linked employer-employee data from the Workplace Employment Relations Survey 2011 (WERS). Appropriately weighted, it is a nationally representative survey of workplaces with 5 or more employees covering all sectors of the economy except agriculture and mining (van Wanrooy et al., 2013). The analysis exploited two survey elements. The first was the management interview, conducted face-to-face with the most senior workplace manager responsible for employee relations. Interviews were conducted in 2,680 workplaces between March 2011 and June 2012 with a response rate

of 46%. The second element was the survey of employees. Self-completion questionnaires were distributed to a simple random sample of 25 employees (or all employees in workplaces with 5-24 employees) in the 2,170 workplaces where management permitted it. Of the 40,513 questionnaires distributed, 21,981 (54%) usable ones were returned.[viii]

Employees' probability of selection for the survey was a product of the probability of their workplace being selected and the probability of the employee's own selection. To extrapolate from the analyses to the population from which the employees were drawn (namely employees in Britain in workplaces with 5 or more employees) analyses were weighted using the employee weights. The weighting scheme compensates for sample non-response bias which was detected in the employee survey as well as stratification of the workplace sample (van Wanrooy et al., 2013: 212-213).

The dependent variable was log gross hourly wages. The wage was based on employee responses to the question: "How much do you get paid for your job here, before tax and other deductions are taken out? *If your pay before tax changes from week to week because of overtime, or because you work different hours each week, think about what you earn on average.*" There were 14 earnings bands, ranging from 'less than £60 per week/£3,120 per year' through to "£1,051 or more per week/£54,601 per year". To obtain a continuous measure of hourly earnings the normal procedure was adopted, taking the mid-point of the respondent's earnings band and dividing this by continuous hours worked. The hours denominator used includes overtime hours.[ix] The earnings band for

the top-coded highest earners was closed by introducing an upper ceiling that is 1.5 times the lower band.

Sexual orientation: The employee self-completion questionnaire asked employees: "Which of the following options best describes how you think of yourself?...Heterosexual or straight; gay or lesbian; bisexual; other; prefer not to say". Of the 21,981 employees surveyed, 19, 741 identified themselves as "heterosexual or straight", 331 said they were "gay or lesbian"; 123 said they were "bisexual"; 80 said "other"; 803 ticked "prefer not to say"; and 903 did not respond. Based on these figures, 90% of employees in workplaces with at least 5 employees were heterosexual in 2011; 1.5% were gay or lesbian; 0.6% were bisexual; 0.4% declared their sexuality as 'other'; 3.7% said "prefer not to say"; and 4.1% did not answer the question. So around 2% of the employee population in workplaces with 5 or more employees identified themselves as gay, lesbian or bisexual. This is similar to the proportion identified in the studies to which Wadsworth et al. (2005: 334) refer although, as they noted, estimates differ according to the way sexual orientation is defined and the population in question.

The final estimation sample contained 18,635 heterosexuals, 312 gay/lesbians, 118 bisexuals, with the remaining 986 grouped as "other" (Appendix Table 1 gives the breakdown by gender).

IV. Estimation strategy

OLS models isolated the independent association between sexual orientation and log hourly wages. Raw correlations were estimated, then analyses established how these correlations varied with the stepwise introduction of control variables, first demographic variables, then job and workplace characteristics, and finally a "full" model which incorporated detailed information on the nature of payment methods and job quality. These models were supplemented by workplace fixed effects models where workplace dummies replaced the observable workplace characteristics to identify the association between sexual orientation and log hourly pay within the same workplace having accounted for unobservable fixed characteristics of the workplace.[x]

The estimating sub-sample was all employees with non-missing hourly wages having dropped 167 cases whose hourly wage was below £2 per hour or above £199 per hour. Dummy variables were incorporated to identify cases with missing information on particular independent variables, thus retaining the sample size. The estimation sample for men and women combined was 20,051 employees located in 1,913 workplaces. Separate estimates were run for women (N=11,157) and men (N=8807) respectively.[xi]

Initially models are presented which incorporated employees of all sexual orientations, namely heterosexuals, gays and lesbians, bisexuals and a group designated "Other" which included those who stated "other" in response to the survey question, those who ticked "prefer not to say" and those who did not answer the question. These are followed by models which compared gays/lesbians with heterosexuals having dropped bisexuals and

"others", followed by models comparing bisexuals with heterosexuals having dropped gays/lesbians and "others".

Oaxaca-Blinder decompositions were run to check for differences in returns to observable and unobserved characteristics by sexual orientation. In this exercise, the wage gap between gays/lesbians (or bisexuals) and heterosexuals was divided into a part that was explained by wage determinants (employee Xs) and a part that cannot be explained by these differences. Following Jann (2008) these decompositions are based on coefficients from a pooled model over both heterosexual and gay/lesbian (or bisexual) employees incorporating a dummy variable identifying sexual orientation.[xii]

To account for the survey's complex sample design estimates were weighted to deal with employees' probability of selection into the survey (and survey non-response), and standard errors were clustered to account for the clustering of employees into workplaces.[xiii]

V. Results

Table 1 presents log hourly earnings by sexual orientation and gender. The raw gap in log hourly earnings between men and women was larger than the wage gaps associated with sexual orientation. Among women log hourly earnings were quite similar by sexual orientation, so the figures do not confirm the frequent finding in the literature that lesbians earn more than heterosexual women. Wage variance was much greater among men with gays receiving the highest hourly wage, followed by heterosexuals. There was a

big gap between these groups and bisexuals. The "Other" grouping contained employees who said their sexual orientation was "other", those who ticked "prefer not to say" and those who did not answer the question. Among men this group earned a little more than bisexuals, while among women they earned a little less.

[INSERT TABLE 1]

Table 2 presents the models discussed in Section IV. The top panel summarises the results for the pooled sample of male and female employees. The most striking result is that bisexuals earned around 15% per hour less than heterosexuals, a differential that fell to around 11% with controls. This differential was robust to the inclusion of demographic, job and workplace controls. The within-workplace differentials in Models (5) to (8) are of a similar magnitude. However, the middle and lower panels of Table 2 reveal the bisexual wage penalty was confined to men. Among men, the raw hourly wage differential between bisexuals and heterosexuals was 31% (Model (1)). It remained at a similar level controlling for demographic characteristics (Model (2)) but fell to 20% with the introduction of job and workplace controls (Model (3)), while the addition of further controls to capture job quality and methods of payment made little further difference (Model (4)). The pattern of results was very similar in the fixed effects models, though the magnitude of the effects was a little smaller. Among women there was no wage penalty attached to bisexuality.

[INSERT TABLE 2]

There was no clear indication of a significant wage gap between gays and heterosexuals. In the pooled models in the top panel, gays were paid around 8% more than heterosexuals, a differential that was statistically significant at a 10% confidence level (Model (1)). But this differential became negative with the introduction of controls and, in the fullest model, the 5% wage penalty was statistically significant at a 5% confidence level. However, the effect was not apparent within workplaces. Furthermore, the gay/heterosexual wage gap never reached statistical significance in the separate models for men and women.

Employees in the "Other" category earned significantly less than heterosexuals, an effect that was largely driven by differentials among female employees. The wage penalty was about 5%, but it was not statistically significant in all models.

[INSERT TABLE 3]

Table 3 decomposes the wage gap between bisexual and heterosexual male employees into a part which can be “explained” by observable characteristics and a part that remains “unexplained” by these differences, as is standard in the gender wage gap literature. (The decomposition was run on models confined to heterosexuals and bisexuals having removed gay men and those in the "Other" category). An OLS log hourly earnings equation with only a dummy variable identifying bisexual employees revealed a wage penalty of 0.27 log points (31%) which was statistically significant at a 1% confidence level. Model 1, which controlled for personal characteristics such as qualifications,

accounted for none of the gap. Model 2 incorporated job and workplace characteristics. These accounted for .08 of the .27 log point differential, that is, around 32% of it. The detailed decomposition revealed that it was the job characteristics that soaked up this part of the differential: the job traits were jointly statistically significant (t=2.07) whereas the workplace characteristics were not (t=0.51). Model 3 also conditioned on job quality measures and methods of payment. This model accounted for .09 of the .27 log point differential (36%), still leaving the bulk of the differential unexplained.[xiv] It was the addition of the performance pay variables that marginally increased the explanatory power of this model, as opposed to the job quality measures.

One must be cautious in attributing any remaining wage penalty to discrimination on grounds of sexual orientation. If one conditions on facets of the job or workplace that are themselves a product of discrimination on the grounds of sexual orientation, this will lead to an underestimate of the contribution of discrimination to the gap. For example, as noted earlier, the literature indicates gays and lesbians may sort into occupations and across employers according to their perceptions of how tolerant employers and their employees may be of diversity (Plug et al., 2014). Linear probability models estimating the probability of being gay versus heterosexual, and bisexual versus heterosexual, indicated that the introduction of workplace fixed effects increased the percentage of the variance explained between five and ten-fold relative to models that incorporated demographic and job traits only.[xv] Yet similarities between the size of the male bisexual wage penalty in the fixed effects models when compared to the OLS models suggests segregation by workplace was not an important factor: the penalty was just as apparent

within workplaces. To explore the issue of occupational segregation further all models were rerun replacing single-digit occupation with a three-digit occupational control. Results throughout were very similar: the wage penalty attached to bisexuality among men was equally apparent *within* detailed occupational categories.

Another part of the literature explores whether gays, lesbians and bisexuals migrate to large urban centres which are more diverse, have vibrant homosexual communities and may thus be more tolerant of homosexual and bisexual employees (Black et al., 2002). In the British context one might expect different outcomes for gay, lesbian and bisexual employees in London compared to elsewhere given its reputation as a diverse city which harbours relatively large gay, lesbian and bisexual communities. However, interactions between London and sexual orientation were not statistically significant in any of the models.

For many years equal rights at work have been enshrined in legislation. The legislation has been extended in the last decade introducing protection against discrimination on grounds of sexual orientation and religion since 2003, and age since 2006. The Equality Act 2010 harmonised and replaced previous legislation "extending some rights and ensuring consistency in what employers need to do to make their workplaces a fair environment for all employees" (van Wanrooy et al., 2013: 116). As noted in the introduction, this may help explain the increasing proportion of workplaces in Britain with written equal opportunities policies which explicitly mention sexual orientation.

By 2011, four-fifths (81%) of employees in British workplaces with at least 5 employees were covered by an equal opportunities policy which explicitly mentioned sexual orientation (Table 4). Procedures to encourage LGBT applicants to apply for posts were much less common: they existed in workplaces accounting for one-fifth (21%) of all employees, nearly all of whom worked in workplaces with a written equal opportunities policy mentioning sexual orientation.

[INSERT TABLE 4]

To see whether these employer policies were related to the size of wage gaps between employees an interaction term was added to the models capturing employees' sexual orientation and whether the workplace had a written equal opportunities policy mentioning sexual orientation, an application procedure mentioning sexual orientation, both or neither. One-fifth (21%) of employees were in workplaces with both; one-fifth (19%) were in workplaces with neither; the remaining three-fifths (61%) had an equal opportunities policy mentioning sexual orientation but no application procedure doing so.

The interactions between sexual orientation and equal opportunities policies relating specifically to sexual orientation were not significant among men. Nor were they significant in estimates comparing the earnings of heterosexual women and bisexuals. However, they were large and robustly estimated in models comparing the earnings of lesbians and heterosexual women. The estimates presented in Table 5 are based on the sample of women who were either heterosexual or lesbian having excluded bisexuals and

those in the "Other" category. As in the estimates for all women (Table 2, middle panel) there was no statistically significant average difference in the log hourly pay of lesbian and heterosexual women.[xvi] However, this average effect hides a large difference in the size of the wage gap between lesbians and heterosexual women depending upon the employer's equal opportunities policy.

[INSERT TABLE 5]

The interaction between being lesbian and having an equal opportunities policy mentioning sexual orientation was positive and statistically significant. So too was the interaction of being lesbian with having both an equal opportunities policy and recruitment procedure mentioning sexual orientation.[xvii] The latter was a little larger than the former, consistent with the proposition that the more rigorous application of equal opportunities with respect to sexual orientation has a larger impact in countering wage discrimination against lesbians. The size of the interaction effect was such that it wiped out the underlying effect of being lesbian, so that in these workplaces there was no statistically significant difference between the log hourly earnings of lesbian and heterosexual women. These results were robust to model specification, as indicated by their size and statistical significance across all four models. The wage gap between lesbians and heterosexual women in the absence of such policies is apparent from the main effect in the first row of the table. The raw wage gap was -.27 log points (31%), falling only a little to -.24 log points (27%) in the full model specification.

These conditional associations do not imply a causal linkage between the presence of equal opportunities policies and the absence of wage discrimination. The presence of such policies may be correlated with unobservable features of the workplace (eg. good management) or the employees who sort into (out of) those workplaces, potentially confounding the effects presented. In an effort to distinguish between the effects of legislative requirements, on the one hand, and the effects of being a "good" or "tolerant" employer additional control variables were added. These included having a strategic plan in place that mentioned employee diversity, training employees in diversity and equal opportunities issues, and having a female HR manager.[xviii] These had no effect on the size of the interactions between being lesbian and having an equal opportunities policy and a recruitment procedure mentioning sexual orientation. The fact that the association was robust to conditioning on a large number of observable features of the employees, their jobs, their workplaces, and other aspects of HR policy, suggests such policies may well have had an impact on discrimination on grounds of sexual orientation, at least among women.

If co-worker discrimination plays a part in explaining sexual orientation wage gaps one might anticipate that employer training in "equal opportunities and diversity" might educate employees and increase their awareness of the potential for discrimination against gay and bisexual colleagues. However, incorporating a dummy variable capturing such training made no difference to the estimated wage gaps while interactions between being in a workplace with this training and employees' sexual orientation were not statistically significant.

The estimated wage gap between heterosexuals and their gay, lesbian and bisexual employee colleagues may be an underestimate of the likely wage gap attributable to sexual orientation for two reasons. First, there is likely measurement error in identifying employees' sexual orientation based on self-reports from self-completion questionnaires. A fairly substantial proportion of employees said they would prefer not to say, quite a few also ticked "Other" and a further group simply did not answer the question. Classical measurement error in the sexual orientation measure would induce a downward bias in the estimates.[xix]

Second, the mechanisms by which a wage gap is likely to emerge between heterosexuals and gay, lesbian or bisexual individuals include discrimination on the part of employers and/or other employees resulting in lower earnings than the employee might otherwise receive. This may be due to direct taste-based preferences for heterosexual employees, for example. These mechanisms assume that employees' sexual orientation is apparent to other parties. While group identity is usually straightforward in the case of gender or race, this is not the case with respect to sexual orientation. The assumption in the literature is that discrimination against homosexual or bisexual employees can only occur where the employee's sexual orientation is known to others, either because the employee has "come out" or "been outed" by others. If a survey respondent reports being homosexual or bisexual, but this is unknown to the employer, and the mechanism by which wage penalties emerge is employer discrimination, the wage gap will partly reflect

employers' inability to discriminate against sexual orientation minorities they are unaware of. There is no information on this issue in our data.

VI. Conclusions

Using linked employer-employee data for Britain this article finds bisexual men earn 31% less per hour than heterosexual employees, a differential that falls to 20% having controlled for demographic, job and workplace characteristics. The gap is apparent within workplaces and within detailed occupational classifications. There is no wage differential between gay and heterosexual men. Among women there is no wage gap between bisexuals and heterosexuals. However, lesbians are paid nearly 30% less than heterosexual women, unless they are employed in a workplace with an equal opportunities policy which explicitly refers to sexual orientation, whereupon there is no wage gap. Although there appears to be workplace sorting by sexual orientation this does not affect the size of the sexual orientation wage gaps.

These findings differ in a number of respects from those in the literature. First, this is one of the few studies to identify a wage penalty for lesbians compared to heterosexual women, albeit confined to workplaces lacking equal opportunities policies. The finding is consistent with Becker's framework (1957) in the sense that the presence of an equal opportunities policy increases the cost of workplace managers engaging in taste-based discrimination. It is also consistent with sociological perspectives that point to the importance of forces capable of disrupting the organisational inertia that can perpetuate cognitive bias, stereotyping and other processes generating inequality.[xx] An alternative

interpretation is that the presence of these policies captures the otherwise unobservable tolerance of employers towards homosexual employees. However, the introduction of a dummy variable capturing the presence of a strategic plan which covers equal opportunities and diversity - something that is not required under the law and may therefore be correlated with being a more enlightened employer - had no effect on the size of the wage gap, suggesting the absence of a gap in the presence of legislated equal opportunities policies may well be attributable to the law's ability to increase the costs of discrimination.

Second, this is one of only a small number of articles which distinguishes between gay and bisexual employees when investigating the link between sexual orientation and earnings. In keeping with the three studies for the United States (Carpenter, 2005; Cushing-Daniels and Yeung, 2009; Sabia, 2015) and unlike the study by Plug and Berkhout (2004) for the Netherlands there is a wage penalty for bisexuals compared with heterosexuals. Furthermore, it persists even in the presence of employer equal opportunities policies explicitly mentioning sexual orientation. There is qualitative research indicating that the attitudes of both employers and employees towards bisexual employees lags behind the positive developments there have been with respect to perceptions of homosexual employees (Chamberlain and Valentine, 2009; Barker et al., 2012). Such attitudes may lie behind the wage gap identified here. However, it is difficult to see why such attitudes result in a penalty among men, but not women. It is possible that the wage penalty for bisexual men may be related to a factor strongly correlated with bisexuality which we do not observe.

Third, in contrast to much of the literature, there is no evidence of a wage penalty for gay men relative to heterosexual men. Perhaps gay men are a group who have benefited from what appear to be changing attitudes towards homosexuality, both in the workplace and more broadly in society.[xxi] Certainly, Clark and Sevak (2013) give changing attitudes to homosexuality in the United States as a possible explanation for the disappearance of a wage penalty for gay men in the United States over the period 1988-2007. Theirs is one of the few studies that runs identical analyses for various survey years, thus permitting the authors to say something about trends over time with confidence. In contrast, this is a single cross-sectional study. However, one should not assume that prejudice against gays and bisexuals is a thing of the past. Recent methodological research indicates that the propensity for survey respondents to provide socially acceptable answers means the magnitude of anti-gay sentiment is substantially underestimated in the United States (Coffman et al., 2013), suggesting wage differentials based on sexual orientation may persist for many years to come in the United States and, perhaps, elsewhere.

Fourth, this article conditions on variables that do not normally appear in empirical investigations of wage differentials by sexual orientation. In particular, the linked employer-employee data provide richer information on the nature of the employer. However, in general, the wage penalty attached to bisexuality among men is not sensitive to the inclusion of these additional workplace variables, and is found within as well as across workplaces. Neither indicators of employer "tolerance" nor efforts to educate co-workers in diversity and equal opportunities appear to have any bearing on the gap, so it

remains unclear what role - if any - employer taste-based discrimination and co-worker discrimination have in explaining the gap.

The same is true for the wage penalty for lesbians - with the exception of equal opportunities policies, of course. The implication is that wage penalties for homosexuals found in previous studies are unlikely to be driven by unobserved features of the workplace. It also seems that, at least in the case of Britain, workplace segregation is not related to the size of the sexual orientation wage gaps.

Finally, models are presented which condition on job quality (job demands, job control and supportive management) in a way that is not normally done in the literature, but this has little effect on the size of the estimated wage penalties, suggesting that those penalties do not arise as compensating wage differentials.

There are limitations to this study, notably its reliance on cross-sectional data and the small number of employees it identifies as lesbian, gay or bisexual. Nevertheless there are some tentative conclusions one might draw that are relevant in formulating government policy. The first is that equal opportunities policies can reduce wage penalties suffered by sexual orientation minorities. The second is that this is not always so: there is no evidence that having a written equal opportunities policy mentioning sexual orientation reduced the wage penalty faced by bisexual men. Perhaps, in some cases, the policy is no more than a "hollow shell", a conclusion Hoque and Noon (2004) came to when examining the effectiveness of such policies using the 1998 Workplace

Employment Relations Survey. The third conclusion is that, even though there appears to have been a reduction in the wage penalty faced by gays and lesbians over time (Klawitter, 2015: Figure 1), wage penalties do persist and are sizeable. Further studies examining wage differences by sexual orientation are needed to clarify what lies behind them. Nevertheless, since only three-quarters of workplaces in Britain had written equal opportunities policies mentioning sexual orientation in 2011 (van Wanrooy et al., 2013) there is an argument for strengthening existing legislative requirements regarding equal treatment of sexual orientation minorities in the workplace.

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Table 1: Mean Log Hourly Earnings, by Sexual Orientation and Gender

Sexual Orientation	All	Men	Women
Heterosexual	2.40 (.02)	2.51 (.02)	2.30 (.02)
Gay/Lesbian	2.48 (.05)	2.59 (.07)	2.29 (.06)
Bisexual	2.26 (.07)	2.24 (.11)	2.26 (.09)
Other	2.27 (.03)	2.35 (.05)	2.21 (.04)
All	2.40 (.02)	2.50 (.02)	2.29 (.02)
N	20,051	8,807	11,157

Notes:

1. Estimation sample which excludes those with hourly wages of £2 or less and £200 or more.

2. Standard errors in parentheses

Table 2: Log Hourly Wage Gaps Relative to Heterosexuals

	M (1)		M (2)		M (3)		M (4)		M (5)		M (6)		M (7)		M (8)	
Men and women pooled																
Gay	0.08	*	0		-0.04		-0.05	**	0.06		0.02		-0.02		-0.03	
	(1.65)		(0.02)		(-1.45)		(-1.97)		(1.45)		(0.51)		(-0.67)		(-1.09)	
Bisexual	-0.14	**	-0.11	*	-0.1	*	-0.1	**	-0.18	***	-0.13	**	-0.1	**	-0.11	**
	(-2.19)		(-1.85)		(-1.79)		(-1.97)		(-3.60)		(-2.37)		(-2.18)		(-2.39)	
Other	-0.13	***	-0.06	**	-0.04	*	-0.04	*	-0.02		0		0		0	
	(-4.13)		(-2.10)		(-1.75)		(-1.71)		(-0.78)		(0.18)		(0.04)		(0.05)	
r2	0		0.26		0.54		0.55		0.44		0.51		0.67		0.68	
Women																
Lesbian	-0.01		-0.02		-0.03		-0.04		0		0.01		-0.03		-0.05	
	(-0.15)		(-0.39)		(-0.78)		(-1.08)		(0.03)		(0.23)		(-0.72)		(-1.16)	
Bisexual	-0.04		0.02		-0.05		-0.06		-0.13		-0.08		-0.07		-0.08	
	(-0.42)		(0.33)		(-0.68)		(-0.86)		(-1.63)		(-0.99)		(-1.01)		(-1.19)	
Other	-0.09	**	-0.04		-0.05	*	-0.05	*	-0.07	**	-0.04		-0.04		-0.05	*
	(-2.16)		(-0.98)		(-1.73)		(-1.78)		(-2.16)		(-1.28)		(-1.60)		(-1.72)	
r2	0		0.23		0.5		0.51		0.48		0.53		0.66		0.67	
Men																
Gay	0.08		0.02		-0.03		-0.04		0.03		0.04		0		-0.01	
	(1.21)		(0.39)		(-0.81)		(-1.19)		(0.44)		(0.71)		(-0.10)		(-0.34)	
Bisexual	-0.27	**	-0.28	***	-0.18	***	-0.17	***	-0.22	***	-0.2	**	-0.15	**	-0.14	**
	(-2.55)		(-4.26)		(-2.89)		(-2.84)		(-2.66)		(-2.41)		(-2.25)		(-2.20)	
Other	-0.16	***	-0.07		-0.02		-0.02		0.02		0.06		0.04		0.04	
	(-3.35)		(-1.53)		(-0.55)		(-0.59)		(0.62)		(1.45)		(1.29)		(1.30)	
r2	0		0.26		0.6		0.62		0.52		0.58		0.77		0.78	

Notes:

(1) Reference category: heterosexuals

(2) Model (1): raw differentials. Model (2): demographic controls (female; religion (4 dummies); age (7 dummies); white; married or living as married; any dependent children; disability; academic qualifications (9 dummies); union member. Model (3): as Model (2) plus job and workplace controls: occupation (10 dummies); usual hours worked (6 dummies); workplace tenure (6 dummies); contract type (4 dummies); public sector; industry (13 dummies); number of employees; single establishment organisation; region (11 dummies). Model (4) as Model (3) plus job quality and pay method: additive scale for job control; additive scale for job demands; additive scale for supportive management; individual performance pay; group or team performance pay; workplace or organizational performance pay. Models (5)-(8) are the workplace fixed effects equivalents of Models (1)-(4). The workplace dummies replace workplace-level covariates.

(3) The job control scale is an additive scale ranging from zero (lowest control) to 15 (highest control). The scale is composed of responses to 5 questions asking employees how much influence they had over the tasks they do in their job, the pace at which they work, the order in which they carry out their tasks, and the time they start or finish their working day. The four-point response scale runs from "none" (zero) to "a great deal" (three). The job demands scale is an additive scale ranging from zero (lowest demands) to eight (highest demands). The scale is composed or responses to two questions asking employees how much they agreed with the statements "My job requires that I work very hard" and "I never seem to have enough time to get my work done". The five-point scale runs from "strongly disagree" (zero) to "strongly agree" (four). The additive scale for supportive management ranges from zero (lowest support) to twenty-four (highest support). The scale is composed of responses to 6 questions asking employees "Now thinking about the managers at this workplace, to what extent do you agree or disagree with the following. Managers here...can be relied upon to keep their promises; are sincere in attempting to understand employees' views; deal with employees honestly; understand about employees having to meet responsibilities outside work; encourage people to develop their skills; treat employees fairly". The five-point scale runs from "strongly disagree" (zero) to "strongly agree" (four).

(4) t-statistics in parentheses. *=significant at a 10% confidence interval; **=significant at a 5% confidence interval; ***=significant at a 1% confidence interval.

(5) Unweighted sample sizes are: Whole economy: 20,051; men: 8,807; women: 11,157.

Table 3: Oaxaca-Blinder Decomposition of the Bisexual-Heterosexual Log Hourly Wage Gap Among Men

Model	Explained	Unexplained	% unexplained
(1) Demographics	-.02 (0.19)	.28 (4.45)	106
(2) As (1) + job and workplace	.08 (0.74)	.18 (2.84)	68
(3) As (2) + job quality and pay methods	.09 (0.87)	.17 (2.80)	64

Notes:

(1) See Table 2 for sample and control variables

(2) t-statistics in parentheses

Table 4: Employee Coverage by Sexual Orientation Equal Opportunities Policies

	Monitors recruitment and selection by sexual orientation:		
Equal Opportunities Policy Mentioning Sex Orientation:	No	Yes	Total
No	19	<1	19
Yes	60	21	81
Total	79	21	100

Notes:

(1) Unweighted N=20,218 employees

(2) Cell percentages

(3) The workplace is deemed to have an equal opportunities policy mentioning sexual orientation where the manager responsible for human resources answers "yes" to the question "Does this workplace [or the organisation to which it belongs] have a formal written policy on equal opportunities or managing diversity?" *and* in response to the question "Does the policy explicitly mention equality of treatment or discrimination on any of the grounds listed on this card?" mentions "sexual orientation". The workplace is deemed to have a procedures for encouraging job applications from people of different sexual orientations if in response to the question "do you monitor recruitment and selection by any of the characteristics on this card?" answers "sexual orientation".

Table 5: Equal Opportunities Policies and The Lesbian Log Hourly Wage Gap

	M (1)		M (2)		M (3)		M (4)	
Lesbian	-0.27	**	-0.24	***	-0.20	***	-0.24	***
	(2.17)		(3.44)		(3.75)		(4.13)	
Sexual Orientation Policies (Ref.: None)								
Equal Ops Policy	0.15	***	0.1	***	0.05	**	0.04	**
	(4.34)		(3.60)		(2.31)		(2.15)	
Equal Ops and Application Procedure	0.32	***	0.19	***	0.08	***	0.08	***
	(7.68)		(5.40)		(3.10)		(3.26)	
LesbianXequal ops policy	0.28	*	0.25	***	0.18	**	0.22	***
	(1.91)		(2.63)		(2.35)		(2.89)	
LesbianXequal ops and application procedure	0.34	**	0.26	***	0.23	***	0.27	***
	(2.36)		(3.18)		(2.99)		(3.35)	
r2	0.03		0.24		0.5		0.51	

Notes:

(1) Unweighted sample N=10,525

(2) The controls are as per Models (1)-(4) for women in Table 2.

(3) t-statistics are in parentheses. *=significant at a 10% confidence interval; **=significant at a 5% confidence interval; ***=significant at a 1% confidence interval.

Appendix Table 1: Sexual Orientation, unweighted number of observations

	Male	Female	Gender missing	Total
Heterosexual	8,156	10,405	74	18,635
Gay/lesbian	190	120	2	312
Bisexual	51	65	2	118
Other	410	567	9	986
Total	8,807	11,157	87	20,051

Note: the "Other" grouping pools together those who, when asked "which of the following options best describes how you think of yourself?" answered "Prefer not to say", "Other" and those who did not answer.

[i] Guryan and Charles (2013) review the literature.

[ii] Whereas the literature identifying the existence of sexual prejudice goes back to the 1980s (eg. Bhurga, 1987), the literature linking sexual orientation to wages begins with Badgett (1995).

[iii] Klawitter (2015: 14) shows the literature is dominated by household social surveys and census data. Her meta-analysis makes no mention of linked employer-employee data.

[iv] Plug and Berkhout (2004) were the first to do so. They find no significant difference between the earnings of bisexuals and heterosexuals in the Netherlands, either among women or men. The only other papers separately identifying bisexual workers are for the United States. Using behavioural measures of sexual orientation Cushing-Daniels and Yeung (2009) find large wage penalties for bisexual men compared to their heterosexual counterparts, but no significant effects among women. Using self-reported sexual orientation Carpenter (2005) finds a wage penalty of 10 per cent for bisexuals compared to heterosexuals among men and women. Sabia (2015) also finds wage penalties for bisexuals but the size and significance of these effects differ across men and women, with the measure used (self-identification versus romantic attraction), model specification and with whether individuals are consistently bisexual over time.

[v] The study uses gross personal income because data on earnings were not explicitly identified.

[vi] Weichselbaumer (2013) reviews the literature on correspondence tests in relation to sexual orientation.

[vii] One Canadian study finds bisexuals are less likely than lesbians and gay men to be "out" about their sexuality in the workplace (Angus Reid, 2011).

[viii] 3,858 questionnaires were distributed at 247 workplaces where there were no employee questionnaires returned. It is likely that these questionnaires were never distributed by the employer (van Wanrooy et al., 2013: 210) so they are not included in the figures in the text.
[ix] The question asked: 'How many hours do you usually work each week, including any overtime or extra hours?'
[x] 279 of the 1,923 (14.5%) workplaces in the estimation sample contained at least one gay employee respondent; 117 (6.1%) contained at least one bisexual employee.
[xi] The sex of the respondent was missing in 87 cases who were retained in the pooled model using a sex missing dummy variable.
[xii] See Fortin et al. (2010) on wage decompositions.
[xiii] Workplaces were the primary sampling unit. The probability of a workplace being sampled was based on stratifying variables relating to establishment size and industry. For details see van Wanrooy et al. (2013).
[xiv] Replacing the workplace characteristics with workplace fixed effects increased the percentage of the gap explained from 36% to 39%.
[xv] For instance, the r-squared for models estimating being lesbian were around 0.05 with demographic and job controls but rose to 0.25 with the workplace fixed effects estimator. The equivalent happened when estimating the probability that a women declared herself bisexual (the r-squared rose from 0.03 to 0.33). Among men the gay model without workplace fixed effects accounted for 0.06 percent of the variance, rising to 0.34 with workplace fixed effects, while the r-squared for the model estimating the probability of being bisexual rose from 0.03 to 0.33. These models are available on request.
[xvi] These results are available on request.
[xvii] One needs to be cautious when interpreting these results because the interaction cells contain fairly small numbers of observations. Of the 121 gay women in these models, 14 were in workplaces with no equal opportunities policy mentioning sexual orientation, 74 were in workplaces with such a policy but no recruitment procedure mentioning sexual orientation, while the remaining 33 were in workplaces with a policy and recruitment procedures mentioning sexual orientation.
[xviii] In theory one might anticipate that differences in management style might lead to differences in the treatment of sexual orientation minorities. There is a literature indicating that female HR managers manage in a different way to male HR managers, one that is more inclusive and consultative. For instance, they are more likely to agree that they will introduce changes only after discussing them with employees (van Wanrooy et al., 2013: 56).
[xix] If preparedness to identify one's homosexual or bisexual orientation is either positively or negatively associated with earnings the bias may go in either direction. Weichselbaumer (2013: 5) suggests those who are confident in their interaction with an interviewer are more likely to out themselves to an interviewer leading to a downward bias in the lesbian/gay wage gap with heterosexuals.
[xx] For a review of this literature see Stainback et al. (2010).
[xxi] The British Social Attitudes Survey tracked profound change in attitudes towards homosexuality over the last three decades in Britain. See http://www.bsa-30.natcen.ac.uk/read-the-report/personal-relationships/homosexuality.aspx