

The Business Case for Equal Opportunities

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Abstract

It has long been argued that equality of opportunity brings business benefits and that it is in employers' interest to implement policy to promote equality of opportunity. We present new evidence on this issue from the Workplace Employment Relations Survey 2004. There do not appear to be large and widespread business benefits associated with Equal Opportunities policies amongst the establishments that implement these; nor do there appear to be large and widespread costs to businesses of the same. Nevertheless, we suggest that the net benefits to society of Equal Opportunities policies are likely to differ substantially from the net benefits to businesses.

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1. Introduction

The early 1990s saw the beginning of a shift from moral and social justice arguments for Equal Opportunities to an emphasis on business self-interest (Dickens, 1994). The business case for Equal Opportunities is now a prominent feature of employer-focused advice and guidance, in which it is argued that greater equality of opportunity within a particular business can reduce labour shortages, improve employee commitment and morale, reduce staff turnover and increase sales (e.g. Age Positive, 2008; Women and Equality Unit, 2003).

Qualitative research shows that a range of benefits do occur (e.g. Task Force on Race Equality and Diversity in the Private Sector, 2004; Bevan *et al.*, 1999; Metcalf and Forth, 2000), but the evidence suggests that benefits to a specific organisation are contingent on that organisation's characteristics and circumstances (Dickens, 1994). At the same time, providing equality of opportunity incurs administrative, management and training costs, and may have other costs such as reduced morale and commitment in the previously advantaged group (Holtermann, 1995). It is therefore unclear, *a priori*, whether an individual organisation will benefit from providing equality of opportunity. In turn, it is unclear whether, on average, organisations benefit from their own steps to improve Equal Opportunities.

This article focuses on the net effect of Equal Opportunities policies on own-business performance. It contributes in three ways to the small body of quantitative research on this topic for Great Britain. First, using the Workplace Employment Relations Survey 2004 (WERS 2004) (Department of Trade and Industry, 2005) we provide more recent evidence than previously available on the relationship between Equal Opportunities policies and practices and business performance. Previous studies using WERS were based on earlier surveys. Second, previous research has had to rely

on subjective measures of productivity and profitability. We extend the analysis to objective (accounts-based) data on labour productivity and profitability, which is possible due to the introduction of a financial performance questionnaire in WERS 2004 and the linking with the Office for National Statistics' Annual Business Inquiry. Third, we explicitly address the issue of causality, aiming to distinguish statistical associations that robustly identify the impact of Equal Opportunities on business performance from statistical associations that may not be causal.

The remainder of this article is structured as follows. An initial section discusses the reasons as to why we may expect Equal Opportunities policies to impact on business performance. Quantitative evidence available on this matter is reviewed in Section 3. The data and methodology we adopt to measure the impacts of Equal Opportunities policies on business performance are discussed in Sections 4 and 5. Results are reported in Section 6. A final section discusses the implications of our empirical analysis and draws some conclusions.

2. Processes by which Equal Opportunities policies may affect business performance

Successful Equal Opportunities policies (i.e. those which increase equality of opportunity) may improve business productivity and/or profits through a range of processes: improved recruitment; improved staff utilisation; improved morale and employee commitment; greater employee diversity; and customer approval. Here we discuss each of these processes in turn and the conditions under which they may arise. We also discuss the range of costs to businesses (in addition to basic implementation and running costs) that may be associated with Equal Opportunities policies. To

summarise the discussion that follows, while there are many ways in which businesses might derive positive performance effects from their Equal Opportunities policies and practices, the effect for each organisation is likely to be conditional on its characteristics and its environment, such that a net benefit may not necessarily accrue.

Improved recruitment. Discrimination in recruitment will reduce the pool of workers from which an organisation draws and may mean that suitable candidates may either be rejected or do not apply. Depending on the tightness of the labour market, this will result in a poorer match between recruits' competence and job requirements, leading to recruitment difficulties and skill shortages. Non-discriminating organisations will be able to recruit higher quality workers from a larger pool (which includes those discriminated against), thereby reducing hiring costs. They may also benefit from lower labour costs; the wages of workers who are discriminated against are likely to be less than the value of their marginal product (Becker, 1971).

The recruitment benefit of equality of opportunity is based on the assumption that recruiters are good at recruiting 'the best for the job', that employee performance is closely aligned to the criteria used for their selection, and that the relevant labour pool contains workers from the discriminated-against group.

Enhanced staff utilisation. Lack of discrimination in the provision of training, development opportunities and promotion may result in better utilisation of staff resources (through better matching of skills and jobs). The actual benefit to an organisation will depend upon the extent to which there is discretion over work allocation and the extent (and importance) of development and promotion. As with recruitment, this relies on the assumption of appropriate selection criteria in the absence of discrimination.

Morale and employee commitment. Equal Opportunities policies and practices are associated with reduced stress, staff turnover, absenteeism and grievances; improved psychological well-being, job performance and work quality; and greater ‘organisational citizenship’; and so are assumed to improve employee morale and commitment (see Meyer *et al.*, 2002; Thorsteinson, 2003; Wright and Bonett, 2002; Ricketta, 2002; Rhoades and Eisenberger, 2002; Judge *et al.*, 2001).

It seems likely that equality of opportunity would enhance the morale and commitment of members of discriminated against groups (see Forth and Rincon-Aznar, 2008, for some supporting evidence). However, the morale effects on those who tend to benefit from discrimination is less clear and equality of opportunity could, in fact, have a negative effect. Therefore, the net effect on morale and commitment within a particular organisation may depend on workforce composition. The consequent impact on business performance will depend on other characteristics of the business. For example, reductions in staff turnover are beneficial when turnover is too high, but may have net costs if turnover is low.

Greater employee diversity. Equality of opportunity may increase the diversity of an organisation’s employees if the labour market includes groups previously discriminated against. Increased diversity is typically professed to bring three types of benefits: customer approval, better service to diverse customer groups and greater innovation.

Customer approval is assumed to enhance sales, and is assumed to be affected by diversity in two ways. Firstly, it is assumed that customers usually support equality and disapprove of discrimination and therefore tend to approve more of organisations with a diverse workforce. Barrington and Troske (2001) refer to a case in which a

business lost the majority of its largest vendors following a campaign about the founder's racist statements. However, it cannot be assumed that all customers support equality or that support influences custom. Secondly, it is assumed that customers wish to see or be served by people like themselves (Metcalf and Forth, 2000). However, there is no evidence to support this assumption and Equal Opportunities might result in staff who are dissimilar to their customer base. Moreover, this benefit can only be derived where diversity is visible (i.e. for certain groups and certain jobs).

Better understanding of a diverse customer/client base is assumed to stem from greater diversity and to enhance sales and service (Hon and Brunner, 2000). This may be manifest through more effective personal contact with customers/clients, product development and marketing appropriate to diverse groups (see, for example, Osborne, 2000), depending on the nature of the business and the composition of customers.

Diversity is also purported to increase innovation, although the evidence is mixed (Anderson and Metcalf, 2003). Different cultural backgrounds may produce different experiences, attitudes and approaches. It is therefore assumed that the range of ideas increases with diversity.

At the same time, greater employee diversity may have costs in respect of employee relations. It may reduce effective team working because of differences in how individuals interact, hostility from prejudiced employees and increased communication difficulties (Lang, 1986; Jehn *et al.*, 1999). At worst it may result in harassment, antagonism and resentment, with consequent management costs, cultural diversity training costs, costs associated with reductions in morale and, potentially, legal costs. Certainly, management demands may increase (Robinson and Dechant, 1997; Shapiro, 2000; Thomas, 1991).

Shareholder approval. Finally, just as diversity may meet with customer approval, knowledge of the existence of an Equal Opportunities policy or equality itself may result in share buyers' approval. Even without effective implementation, Equal Opportunities policies may have signalling effects. Companies recognised by the U.S. Department of Labor for having an exemplary affirmative action program experienced an increase in stock price immediately after the announcement, which may have arisen because of an increase in expected future sales or because of a publicity effect (Wright *et al.*, 1995).

Costs of implementing Equal Opportunities. The implementation of Equal Opportunities policies and practices entail costs, some of which are identified in the discussion above as potential dis-benefits. As for many employment policies, Equal Opportunities policies incur development costs and continuing costs of training and dissemination. Some have other types of costs, for example: increased job advertising costs and time to conduct selection fairly; collection and analysis of data to monitor Equal Opportunities; specialist provision to cater for a diverse workforce (e.g. workplace adjustments to accommodate employees with mobility impairments); reduced morale and increased grievances if employees are not confident that discrimination is being dealt with effectively.

Again the actual costs of Equal Opportunities policies will vary with the characteristics of the organisation and its circumstances. Costs associated with hiring and selection will be greater for organisations with high turnover, whilst workplace adjustment costs are likely to be greater for those occupying older buildings.

3. Evidence

The majority of evidence relating to the effects on business performance of Equal Opportunities policies is qualitative in nature, and, given the specificity of the likely effects, it is difficult to draw general conclusions from these studies about the average impacts of Equal Opportunities policies on the average business. A few studies provide quantitative evidence on the relationship between Equal Opportunities policies and business performance in Britain. In these studies business performance is measured as managers' subjective view of their establishment's productivity or profits compared with other establishments in the same industry. Pérotin and Robinson (2000) is perhaps the most oft-cited example. They found that managers' ratings of labour productivity at their workplace were higher in workplaces with a formal, written Equal Opportunities policy than in similar workplaces without a policy, after controlling for other factors. Elsewhere, for a range of specific Equal Opportunities practices, including composite indices, the relationship with productivity and performance using similar data has been variously identified as positive, negative or zero (Forth and Rincon-Aznar, 2008; Pérotin and Robinson, 2000; Dex *et al.*, 2001; Gray, 2002). There is also some quantitative evidence on the relationship between Equal Opportunities policies and factors that may affect business performance, such as employee commitment (Dex and Smith, 2001; Forth and Rincon-Aznar, 2008) and employees' perceptions of fairness of treatment (Forth and Rincon-Aznar, 2008; Bryson, 2000), but here the evidence is again mixed.

It is not only the variation in findings for different measures of Equal Opportunities and performance that prohibits firm conclusions from being made from this body of evidence. The reliance on subjective measures of performance which, as Forth and McNabb (2007) discuss, may be prone to error or bias, also reduces one's confidence

in the conclusions. Moreover, these studies identify association and not causality: they are consistent with Equal Opportunities practices being a consequence of good business performance rather than *vice versa* (for example, if good performance provides the resources to implement Equal Opportunities practices) and with other unobserved factors resulting in both implementation of Equal Opportunities practices and changes in business performance.

4. Data

We conduct our analysis using WERS 2004, a survey of employers and employees yielding detailed information on the nature of work in 2295 British workplaces. Besides earlier surveys in this series this is the only dataset, of which we are aware, that identifies both businesses' use of Equal Opportunities policies and measures of business performance for a representative sample of British workplaces that is suitable for quantitative analysis. Further, it contains detailed information on other management practices and business characteristics. Information on workplaces' local labour market can be linked to the survey using workplaces' postcodes.

Measuring Equal Opportunities policies. A range of Equal Opportunities indicators is available from WERS 2004. The *existence of a formal written policy on Equal Opportunities or managing diversity* is identified, providing a general indicator of policy presence, as used, for example, in Pérotin and Robinson (2000). However, there is evidence of the ineffectiveness of formal written Equal Opportunities policies *per se* (Noon and Hoque, 2004). Therefore, we develop additional measures intended to be indicative of stronger policy commitment. There are numerous ways this can be done and previous research into the effectiveness and business benefits of Equal

Opportunities policies provides little guidance as to a set of best measures. We focus on whether an establishment *reviews promotions or relative pay to identify indirect discrimination* and whether an establishment tries to *measure the effects of its Equal Opportunities policies*. We prefer an indicator that the workplace reviews pay or promotion procedures to an indicator that the workplace reviews recruitment procedures, since the former practice is less common and, arguably, is more likely to signify commitment to achieving equality of opportunity. We prefer an indicator of attempts to measure the effects of Equal Opportunities policies within the workplace to an indicator of simple monitoring since the former implies more than mere data collection and is a strong indicator of policy commitment, and hence of policy effectiveness and quality; indeed this practice is both difficult and rare.

Measuring business performance. Business performance is measured a) in terms of subjective assessments of the workplace's comparative productivity and financial performance (assessed by the WERS respondent, usually the human resource manager or the owner, and recorded on a 5 point scale) and b) by accounts-based measures of gross value added and profits. There are a number of issues relating to accuracy and consistency of the subjective performance measures (see Forth and McNabb, 2007). We are able to separate out those respondents who interpret the subjective measure of financial performance in terms of profitability (rather than turnover, costs, or something else), which reduces the sample of private sector workplaces by approximately a third. Whilst the accounts-based measures of gross value added and profits are to be preferred to the subjective performance measures all other things equal, they are only available for approximately 500 workplaces. Therefore, we evaluate the impacts of Equal Opportunities on business performance using both the subjective and accounts-based measures of productivity and profits. We focus on

workplaces in the private sector that trade externally, on the grounds that public sector workplaces and workplaces that provide goods or services solely to other establishments in the same organisation are less likely to measure performance accurately.¹

Table 1 illustrates the incidence of Equal Opportunities policies, as measured by the three indicators discussed above, for workplaces in the three different samples that are distinguished by availability of the particular performance measure. A little less than two thirds of workplaces have a formal written policy on Equal Opportunities. Far fewer implement general practices to promote equality of opportunity. Consistently across policy indicators and samples, the incidence of Equal Opportunities is higher in larger workplaces and organisations, workplaces with union presence, and workplaces with a relatively high representation of women or ethnic minority employees.

5. Methodology

We begin our exploration of the relationship between Equal Opportunities and business performance by augmenting empirical models of workplace productivity and profits with indicators of Equal Opportunities policies and practices. This is in line with the approach adopted in previous studies in which Equal Opportunities policies and practices are assumed exogenous. The subjective indicators of above average performance are modelled using a probit specification (models explaining variation in this dichotomous performance indicator performed better than models explaining variation in the 5-category indicator) and the accounts-based measures of performance are modelled using linear regression. We include controls for workplace

characteristics, employees' skills, market conditions and competitiveness, and industrial relations and human resource management; important here in so far as they correlate with both Equal Opportunities and business performance. Small sample sizes limit the number of significant covariates in the models of accounts-based measures of performance. We exclude from all models measures of employees' commitment and morale, and workforce composition (for example, by gender or ethnicity), which, as discussed above, may be influenced by Equal Opportunities policies. As such, their inclusion might mask any potential policy effect. Instead, we control for factors that are likely to influence employees' commitment and morale (industrial relations and human resource practices) and factors that are likely to influence the composition of employees in the workplace (measures of workforce composition in the industry and local labour market), but which are unlikely to be affected by the individual establishment's policy on Equal Opportunities.

Models of subjective and accounts-based productivity and profits (excluding Equal Opportunities indicators) are reported in Table 2; the observed relationships largely accord with expectations. We are better able to explain variation in the accounts-based, than the subjective, measures of business performance. This is not entirely due to differences in outcome measures, but is also explained by differences in the samples of workplaces. Thus, we are better able to explain variation in the subjective measures of performance in the sample for which we have accounts-based data than in the larger sample for which we have subjective measures of performance.

In a second step we compare business performance amongst those establishments that operate Equal Opportunities policies to business performance amongst a matched sample of establishments that do not. The matched sample for each performance comparison is selected on the basis of a propensity score (the propensity to operate

Equal Opportunities policies), predicted using the variables included in the model in Table 2. The advantage of this approach over the augmented business performance model is that it focuses only on those establishments which differ in their Equal Opportunities policies, but which can be regarded as similar in terms of the factors that determine business performance. Estimates obtained using this approach may therefore better approximate the causal effects of Equal Opportunities on business performance.

Many of the variables that explain business performance and used to compute the propensity score correlate with the presence of Equal Opportunities. The mean predicted propensity score amongst establishments that operate these policies is significantly higher than amongst establishments that do not (see Table A1). In estimating the propensity score we exclude variables that predict Equal Opportunities, but that do not predict business performance (Heckman and Navarro-Lozano, 2004; Bhattacharya and Vogt, 2007). We use nearest neighbour matching with replacement, excluding from the matched sample those establishments operating Equal Opportunities whose propensity score is greater (less) than the maximum (minimum) estimated propensity score observed for the controls and those for whom we cannot find a control with an estimated propensity score within a range of 0.002. This common support criteria results in the loss of between a third and half of establishments with formal written policies on Equal Opportunities, depending upon the performance measure; far less for other Equal Opportunities measures (see Table A1). Survey weights are used in estimating the propensity score; in comparing means in the matched sample we use survey weights for the treated, ignoring the weights on the matched controls. Comparing mean differences in the determinants of business performance between establishments with and without Equal Opportunities in the

matched sample, the matching exercise appears more successful on the sample for which we have objective measures of business performance and for the two measures of Equal Opportunities indicative of stronger policy commitment (see Table A1). We discuss the sensitivity of our results to alternative match methods in the next section.

The two approaches discussed so far are unlikely to yield estimates of the causal impacts of Equal Opportunities on business performance if either the relationship between these is truly circular, in the sense that business performance determines uptake of Equal Opportunities and Equal Opportunities affect business performance, or if we are unable to identify from theory and measure in the data all the factors that may coincide with Equal Opportunities and business performance. To deal with these possibilities we jointly model business performance and uptake of Equal Opportunities as a function of the covariates in Table 2. For this approach to be successful (in terms of yielding causal impact estimates), we need to identify factors which appear to influence whether or not establishments operate Equal Opportunities policies, but which are unrelated to business performance. WERS 2004 records the gender and the training of the human resource (HR) manager in the workplace. We consider these as potential instrumental variables. One might speculate that women HR managers (being from a traditionally discriminated against group) and highly trained HR managers (grasping the specifics of Equal Opportunities policies and practices) are more likely to implement effective Equal Opportunities policies. At the same time, it seems unlikely that these factors themselves should have any bearing on business performance. To test the validity of using the gender and occupational training of the HR manager as instrumental variables, we first test whether these are correctly excluded from the models of business performance in Table 2. We find neither attributes of the HR manager to be statistically significant in explaining

business performance (individually or jointly; see test for exogeneity in Table A2).² Next, we assess the relevance of the gender and occupational training of the HR manager in a probit model of Equal Opportunities uptake (including the covariates of business performance). Establishments with HR managers or owners that are qualified in personnel management are more likely to have implemented Equal Opportunities policies and practices on all three Equal Opportunities measures considered. These correlations are statistically highly significant (see test for weak instruments in Table A2). The gender of the HR manager or owner is typically a statistically significant predictor (on its own and jointly with the qualifications of the HR manager) of *whether establishments have a formal written policy on Equal Opportunities* or *whether establishments measure the impacts of their Equal Opportunities policies*; where it is not (i.e. where it appears to be a weak instrument) we do not use it as an instrument for the policy (see Table A2). The gender of the HR manager is not a statistically significant predictor of *reviewing practices to identify indirect discrimination*. Thus, we do not use the gender of the HR manager as an instrument for reviewing practices.

6. Results

Tables 3 and 4 report our estimates of the average effect on business performance of having in place a particular Equal Opportunities policy or practice amongst those who have these in place (the ‘average treatment effect on the treated’, ATT). Table 3 concerns workplace productivity and Table 4 workplace profitability. When the outcome measure refers to subjective performance the ATT measures the percentage point difference in the probability of reporting above average performance associated with operating Equal Opportunities. With the accounts-based performance measures

the ATT measures the per cent difference in outcomes (gross value added or profits per head) associated with operating Equal Opportunities. We report in brackets the probability that the ATT is zero, based on the estimated standard error and central estimate of the ATT.

For each business performance measure and each Equal Opportunities measure we report estimates of the ATT from four different models, distinguished by the identifying assumptions that these involve. The first of these is the simple difference in mean business performance between establishments with and without Equal Opportunities policies, essentially a cross tabulation of the data. The second of these is the estimated marginal effect of having an Equal Opportunities policy within a probit or linear regression model of business performance, equivalent to the models reported in Table 2 augmented with an indicator of Equal Opportunities. In these models the presence of Equal Opportunities policies is assumed exogenous, given the other influences on business performance included in the model. The third estimate of the ATT is the difference in mean business performance between establishments with and without Equal Opportunities policies, within a matched sample of establishments (discussed in the previous section). The fourth estimate of the ATT is the estimated marginal effect of having an Equal Opportunities policy within a probit or linear regression model of business performance, where the presence of Equal Opportunities is assumed to be endogenous. In this case the model of business performance in Table 2, including an indicator of Equal Opportunities, is estimated jointly with a probit model of Equal Opportunities uptake including the variables used to explain business performance and additional instruments (discussed in the previous section).

Equal Opportunities and workplace productivity

The first column in Table 3 reports estimates of the workplace productivity effects of having a *written policy on Equal Opportunities or managing diversity*. For those workplaces with formal policies, the percentage reporting above average productivity is 12.1 percentage points less than for those workplaces without formal written policies. This difference is statistically significant and is not obviously attributable to differences in observable influences on workplace productivity. Controlling for observable influences on workplace productivity in the simple probit model, the share of workplaces with formal policies reporting above average productivity is 16.5 percentage points less than for workplaces without. But, in the matched sample this difference falls to 4.9 percentage points and is no longer statistically significant. The estimated ATT in the propensity score model is sensitive to the choice of caliper used in the matching. Matching within a wider caliper (0.01) the difference is larger at 9.4 percentage points and is statistically significant (p-value 0.013); only 32 observations from the treatment group are lost in this case, but the sample is less balanced. Matching within a smaller caliper (0.001) the estimated ATT is qualitatively similar to the central case reported in Table 3; the ATT in this scenario is -0.006 (p-value 0.913), 522 observations are lost from the treatment group (compared to 319 in the central case) and only 5 covariates remain statistically different between the treatment and comparison groups (compared to 8 covariates in the central case). Treating the presence of a written policy on Equal Opportunities or managing diversity as endogenous, we find further support to suggest there is little if any difference in perceived productivity performance between workplaces that have formal policies and workplaces that do not. The correlation of the error terms in the two equations of the endogenous model is not statistically different from zero (see Table A2). However,

we note that the Wald test on which this conclusion is based is not a particularly strong test of treatment exogeneity (Monfardini and Radice, 2008) and we do not interpret this to mean that the probit model with the exogenous policy assumption provides the more robust estimate of the ATT.

None of the models of gross value added per employee suggest there is a statistically significant relationship between having a formal written Equal Opportunities policy and workplace productivity. Looking at gross value added per employee, this is on average 7.3 per cent higher amongst workplaces with formal Equal Opportunities policies in comparison to workplaces without formal written policies. Although this difference is nearly statistically significant at the ten per cent level, it - critically - turns negative and moves further from statistical significance in the models where we control for other influences on gross value added. The simple difference in mean log gross value added between workplaces with and without Equal Opportunities policies stands in complete contrast to the correlations in the data regarding firms' subjective evaluation of productivity performance. This contrast does not reflect differences in samples. The tendency for workplaces with formal written policies on Equal Opportunities to report relatively poor productivity performance, as measured by the subjective indicator, is also evident in the accounts-based sample (the difference is 18.6 percentage points (p-value 0.060)).

Estimates of the workplace productivity effects associated with *measuring the impacts of Equal Opportunities policies in the workplace* and with *reviewing promotion procedures or relative pay rates to identify indirect discrimination* are reported in the second and third columns of Table 3 respectively. Both are intended to be general indicators of Equal Opportunities policy and practice. We consistently find no evidence of a statistically significant relationship between either of these measures

of Equal Opportunities in the workplace and workplace productivity (columns two and 3). All models, using either measure of workplace productivity, produce ATT estimates that statistically are no different from zero. We emphasise that, in these samples, the numbers of workplaces with these practices are relatively small (see Table 1), which may reduce the likelihood of finding statistically significant policy impacts, even if these are genuinely different from zero.

In summary, we find little robust evidence that Equal Opportunities have a net impact (either positive or negative) on workplace productivity, once one has accounted for differences between establishments that do and do not operate Equal Opportunities Policies and once one considers accounts-based information on performance.

Equal Opportunities and workplace profitability

The first column in Table 4 reports estimates of the effects on workplace profits of having a *written policy on Equal Opportunities or managing diversity*. None of the models show a statistically significant relationship between Equal Opportunities policies and the subjective indicator of financial performance. The results are much the same for the relationship between Equal Opportunities policies and profits per employee, except in the model that treats having a formal written policy as endogenous. In this model we find that having such a policy appears to be associated with a statistically significant reduction in profits per employee of 16.7 per cent. However, we suggest this is interpreted with some caution, as this result stands in stark contrast to all the other estimates in column 1 of Table 4. Further, including additional instruments selected from the factors that do not correlate with profits per employee in this sample, but which do predict Equal Opportunities, we find no statistically significant association between formal written policies and profits per

employee.³ We note that the propensity score estimates are qualitatively similar when we use different caliper widths (0.01 and 0.001); i.e. there is, on average, no difference in profits per employee between workplaces with and without formal written policies in the matched sample.

We generally find no evidence of a statistically significant relationship between workplace profits and either *measuring the impacts of Equal Opportunities policies in the workplace* or *reviewing procedures to identify indirect discrimination*. This mimics the findings regarding the relationship between these practices and workplace productivity. The exception is the estimated effect of measuring the impacts of Equal Opportunities policies on the subjective indicator of financial performance in the model that treats Equal Opportunities as endogenous. In this model we find that establishments that measure the impacts of their Equal Opportunities policies are 47 percentage points more likely to report above average financial performance than establishments that do not make these measurements. The magnitude of this effect would seem difficult to attribute to policy alone and is inconsistent with all other evidence from our analysis.

7. Discussion and conclusions

The analysis presented in this paper has sought to provide quantitative evidence on the average relationship between Equal Opportunities policies and practices and business performance in the workplace. The assessment of two Equal Opportunities practices which might be expected to indicate a commitment to effective Equal Opportunities (measuring effectiveness and reviewing pay or promotion), as well as a broad policy (a written policy), and the use of several outcome measures using several

identification approaches, is intended to help us to draw robust conclusions about this relationship. The evidence we have presented suggests that it is difficult to argue that the net benefits to businesses associated with implementing Equal Opportunities policies and practices are large and widespread amongst the establishments which implement these. Similarly, the evidence does not support the notion that Equal Opportunities policies and practices place disproportionate net burdens on businesses. We find some strong and statistically significant relationships between subjective indicators of business performance and Equal Opportunities policies. But, as we have argued above, these are unlikely to reflect the causal impacts of policy.

Although we suggest there is little evidence that Equal Opportunities policies and practices result in a net cost or benefit to employers on average, this is not to say that no employers will derive net benefits from implementing Equal Opportunities policies and practices or that none will see a net cost. Indeed, as we have discussed, the relationship between Equal Opportunities and business performance is complex and the net benefits to an organisation of these practices may be positive or negative, depending on the organisation's characteristics and its circumstances. Also, we cannot rule out that specific Equal Opportunities practices other than those measured here may be associated, on average, with enhanced workplace performance or net costs. We have assessed three indicators of general practice, rather than assessing the impact of more specific Equal Opportunities practices, such as those targeted at particular groups.

While the WERS 2004 enables us to examine the performance effects of Equal Opportunities policies and practices in considerable depth, the analysis we have undertaken also has significant limitations and it is important to bear these in mind. These stem primarily from data limitations, in respect of variables and sample sizes,

exacerbated by the pattern of implementation of policies and practices. Productivity and profit measures based on accounts data are only available for a small subset of the WERS 2004 sample. This reduces the likelihood of identifying performance effects and limits the possibilities for looking at sub-sets of the data, which are preferred where Equal Opportunities policies and practices are highly coincident with other factors that correlate with business performance, such as workplace size. Subjective measures of performance are available for a larger sample of workplaces, but these may be prone to measurement error, thus reducing the reliability of the findings. Separately, it appears important to evaluate the relationship between Equal Opportunities and business performance using a range of models, in order to reach robust conclusions.

Our findings are somewhat in contrast to those of Pérotin and Robinson (2000), the study which is probably closest in method to that adopted here. Using WERS 1998 they find a positive and statistically significant relationship between having a formal written policy on Equal Opportunities and labour productivity. They use an ordered probit model of the subjective productivity ranking and treat the policy as exogenous. In a similar model we find a negative and statistically significant relationship between Equal Opportunities and labour productivity using WERS 2004, which we do not interpret as a causal impact. These differences in results appear to arise because of a different bivariate association between the Equal Opportunities policy and the subjective labour productivity ranking in the 1998 and 2004 WERS. The association in WERS 2004 is negative, but the association is positive in WERS 1998. This shows up irrespective of whether one uses the full 5-point scale as per Pérotin and Robinson (2000) or a binary variable as in this paper, or whether one controls for other influences on labour productivity, and is unrelated to the weighting scheme. This is

unlikely to suggest that anything has specifically changed in respect of Equal Opportunities though, since the same pattern of results occurs using, for example, 'union recognition' in place of Equal Opportunities. We are, of course, unable to evaluate whether the bivariate association with accounting measures of performance has also changed, but the change in the bivariate association with the subjective measure might lead to further suspicion over the validity of the perceptual data.

Equality of opportunity in the labour market may bring economic and social benefits. Notably, it may increase the supply of labour and improve the efficiency with which human resources are used, reducing labour costs and raising aggregate income. It may also help to reduce social inequalities. Individuals, society at large, and individual businesses may all share in these benefits. At the same time, the evidence presented in this paper suggests that, on average, individual employers do not necessarily gain (nor lose) from implementing policies and practices to promote equality of opportunity. The implication is that there is likely to be a difference between the private and public costs and benefits of Equal Opportunities policies and practices, suggestive of market failure and pointing to the need for policy intervention. An alternative interpretation of our results is that Equal Opportunities policies and practices are ineffectual, i.e. that they do not actually succeed in influencing intermediate outcomes such as morale, commitment and equality, and therefore that they don't influence business performance. In this case policy intervention is perhaps less justified.

An overriding concern in this paper has been the complexity of the linkages between Equal Opportunities policies and practices and business outcomes. Although not strictly essential to the derivation of business benefits, there is the expectation that policies and practices affect equality. However, this assumption has not yet been

proven. In Section 2, we identified a large number of routes by which Equal Opportunities policies and practices might affect profits and productivity. However, which of these routes are important is not known. Moreover, the likely range of linkages, combined with data limitations, will have reduced the potential for detecting effects. These difficulties suggest two important areas for further research. First, we need more evidence on the impact of Equal Opportunities policies and practices on equality in the workplace. This is likely to be difficult to find, because equality is difficult to measure. Second, further evidence on the extent and nature of business benefits could be gained through examining in more detail the effects of Equal Opportunities policies and practices on outcomes that are intermediate to business performance. It is important that such analysis considers the potential endogeneity of policy.

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¹ There are a small number of public sector workplaces that trade externally (e.g. those belonging to nationalised industries or trading public corporations). Where we have accounts-based measures of business performance for these workplaces we include them in our analysis.

² Throughout this paper we use the 5% threshold to denote statistical significance, unless specified otherwise.

³ Including 'Trading in the international market' and 'Independence in work' as instrumental variables (in addition to those in the central case) we find an ATT of -.119 (.121). Although on statistical grounds these factors may be regarded as instrumental variables, on theoretical grounds it is more difficult to justify these as exogenous to profits (and they do influence subjective measures of financial performance, see Table 2). Hence, we do not include these factors as instrumental variables in the central case reported in Table 4. Nevertheless, we believe this exercise illustrates the sensitivity of the results.

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TABLE 1
The incidence of Equal Opportunities in UK workplaces (*per cent*)

	Formal written policy on Equal Opportunities or managing diversity			Measurement of the impacts of Equal Opportunities policies			Reviewing of promotions or relative pay to identify indirect discrimination		
	<i>(sample)</i>			<i>(sample)</i>			<i>(sample)</i>		
	<i>(a)</i>	<i>(b)</i>	<i>(c)</i>	<i>(a)</i>	<i>(b)</i>	<i>(c)</i>	<i>(a)</i>	<i>(b)</i>	<i>(c)</i>
All workplaces	62	59	65	6	4	6	11	9	10
<i>In workplaces with:</i>									
Workplace size: 10-49	62	60	62	7	6	8	10	9	7
Workplace size: 50-499	89	88	86	11	9	8	19	15	18
Workplace size: ≥500	96	96	88	30	27	24	36	33	22
Part of a larger organisation	78	78	81	7	6	7	14	13	15
Organisation size: ≥100	88	87	94	9	7	8	17	17	20
Union presence	82	80	85	12	8	~	13	11	14
Female employees: ≥50%	68	65	68	7	6	9	14	13	15
Ethnic minority employees: ≥10%	81	79	67	12	4	16	16	9	19
Sample (number of workplaces)	1592	951	488	1592	951	488	1592	951	488

Source: Workplace Employment Relations Survey 2004 and Annual Business Inquiry

Notes: Figures are weighted; Sample (a) includes private sector establishments trading externally; Sample (b) includes private sector establishments trading externally who interpret financial performance as profits; Sample (c) includes establishments trading externally for which we have accounts-based information on financial performance, sample weights corrected for sample selection bias (see Forth and McNabb, 2007); ~ excluded for disclosure reasons (Micro-data Analysis User Support ONS regulations: published data items must refer to a minimum of 10 establishments).

TABLE 2
Models of business performance

<i>Independent variable:</i>	<i>Dependent variable</i>							
	Subjective indicator of above average productivity performance		Subjective indicator of above average financial performance (profits)		Log gross value added per employee		Log profits per employee	
	<i>Coeff.</i>	<i>p-val.</i>	<i>Coeff.</i>	<i>p-val.</i>	<i>Coeff.</i>	<i>p-val.</i>	<i>Coeff.</i>	<i>p-val.</i>
<i>Industrial Relations and HRM</i>								
Union presence	-.061	(.296)	-.059	(.440)	-.110	(.029)	-.073	(.055)
Participation in returns	.079	(.050)	.047	(.357)	.092	(.028)	.079	(.008)
Participation in control	.043	(.275)	-.048	(.359)			-.031	(.079)
Independence in work	.041	(.173)	.062	(.056)				
Culture of head office: USA			.305	(.051)	.367	(.021)	.262	(.017)
Culture of head office: other non-UK			.270	(.067)	.180	(.043)	.120	(.080)
<i>Influences on employee characteristics</i>								
TTWA population: % ethnic minority					-.003	(.096)	-.003	(.012)
Industry employment: % ethnic minority	-.055	(.011)	-.018	(.487)				
Industry employment: % female	.006	(.020)	.003	(.259)				
<i>Market conditions and competitiveness</i>								
Extent demand depends on quality: medium	.090	(.150)						
Extent demand depends on quality: high	.147	(.013)						
State of the market: mature	-.073	(.216)	-.054	(.463)				
State of the market: declining or turbulent	-.121	(.031)	-.136	(.049)	-.137	(.007)		
State of the market: mature, declining or turbulent							-.105	(.009)
Trading in the international market	.123	(.075)	-.100	(.233)				
<i>Skills</i>								
Managerial/professional occs (% of employees)	.004	(.002)						
Routine unskilled occupations (% of employees)					-.000	(.892)		
Age 16-21 (% of employees)	-.002	(.070)						
<i>Establishment characteristics</i>								
Ownership: partly foreign			-.101	(.371)				
Ownership: predominantly foreign			-.230	(.080)				
Establishment size: 50 employees or more	.043	(.399)	.075	(.254)				
Organisation size: 100 employees or more	-.108	(.060)	.202	(.007)	.017	(.670)	.016	(.585)
Part-time working (% of employees)			-.002	(.062)	-.003	(.000)	-.001	(.237)
Young establishment					-.055	(.323)	-.053	(.210)
R-squared (pseudo for probit models)		0.085		0.088		0.368		0.363
Sample (unweighted)		1327		827		444		448

Source: Workplace Employment Relations Survey 2004 and Annual Business Inquiry

Notes: Estimation takes into account survey weights; Subjective (accounts-based) performance modelled as a probit (linear regression); Probit coefficients shown as marginal effects; Independent variables include major SIC indicators and a constant term; Participation in returns variable constructed from factor analysis of indicators of performance related pay, profit related pay, employee share schemes; Participation in control variable constructed from factor analysis of indicators of briefing between managers and workers, joint consultative committees, and quality circles; Independence in work variable constructed from factor analysis of indicators of the extent of variety in work, discretion in work, control over pace of work, and design of work; Sample includes private sector establishments trading externally; Sample for subjective financial performance includes only those establishments who regard financial performance as profits; Sample for accounts-based business performance measures includes public and private sector establishments trading externally.

TABLE 3
Productivity and Equal Opportunities

<i>Outcome variable:</i>	Equal Opportunities measure					
	Formal written policy on Equal Opportunities or managing diversity		Measurement of the impacts of Equal Opportunities policies		Reviewing of promotions or relative pay to identify indirect discrimination	
	<i>Coeff.</i>	<i>p-val.</i>	<i>Coeff.</i>	<i>p-val.</i>	<i>Coeff.</i>	<i>p-val.</i>
<i>Subjective indicator of above average productivity performance</i>						
Difference in means	-.121	(.009)	-.018	(.813)	.003	(.965)
Probit model, exogenous EO	-.165	(.005)	-.034	(.652)	-.007	(.915)
Difference in means, propensity score estimates	-.049	(.290)	.005	(.967)	-.016	(.851)
Probit model, endogenous EO	-.216	(.295)	.104	(.836)	.257	(.329)
<i>Log gross value added per employee</i>						
Difference in means	.073	(.104)	.028	(.834)	-.083	(.114)
Linear regression, exogenous EO	-.029	(.513)	.036	(.693)	-.124	(.069)
Difference in means, propensity score estimates	-.017	(.627)	.076	(.626)	-.095	(.162)
Linear regression, endogenous EO	-.218	(.130)	.304	(.302)	-.088	(.597)

Source: Workplace Employment Relations Survey 2004 and Annual Business Inquiry

Notes: Estimation takes into account survey weights; Probit coefficients shown as marginal effects; Difference in means model gives the simple difference in business performance between establishments with and without Equal Opportunities (EO); Probit and linear regression models of business performance include the controls shown in the models in Table 2; Propensity score estimates take into account survey weights in estimating the propensity score and survey weights for the treated in estimating the difference in means; Prediction of the propensity score is based on the controls shown in Table 2; Propensity score estimates generated using nearest neighbour matching with replacement, caliper 0.002; EO selection equations in the endogenous EO models include the controls used to explain business performance in Table 2 and additional instruments: the gender and occupational qualification of the human resource manager/owner (equation for "Reviewing" excludes the gender of the human resource manager/owner, as does equation for "Measurement" in the subjective sample).

TABLE 4
Profits and Equal Opportunities

<i>Outcome variable:</i>	Equal Opportunities measure					
	Formal written policy on Equal Opportunities or managing diversity		Measurement of the impacts of Equal Opportunities policies		Reviewing of promotions or relative pay to identify indirect discrimination	
	<i>Coeff.</i>	<i>p-val.</i>	<i>Coeff.</i>	<i>p-val.</i>	<i>Coeff.</i>	<i>p-val.</i>
<i>Subjective indicator of above average financial performance (profits)</i>						
Difference in means	.042	(.452)	.064	(.547)	.055	(.525)
Probit model, exogenous EO	-.053	(.458)	.054	(.639)	-.026	(.792)
Difference in means, propensity score estimates	.008	(.900)	.178	(.253)	-.124	(.269)
Probit model, endogenous EO	.189	(.266)	.474	(.000)	.126	(.706)
<i>Log profits per employee</i>						
Difference in means	.041	(.249)	.005	(.959)	-.058	(.140)
Linear regression, exogenous EO	-.032	(.251)	.050	(.483)	-.093	(.135)
Difference in means, propensity score estimates	.028	(.331)	-.069	(.734)	-.058	(.568)
Linear regression, endogenous EO	-.167	(.027)	.176	(.781)	-.136	(.251)

Source: Workplace Employment Relations Survey 2004 and Annual Business Inquiry

Notes: see notes to Table 3; Equation for “Reviewing” excludes the gender of the human resource manager/owner, as does equation for “Formal written policy” in the accounts-based sample.

TABLE A1
Details of propensity score matching

<i>Outcome variable:</i>	Subjective indicator of above average productivity performance			Subjective indicator of above average financial performance (profits)			Log gross value added per employee			Log profits per employee		
<i>Equal Opportunities measure:</i>	Formal policy	Impact measurement	Reviewing	Formal policy	Impact measurement	Reviewing	Formal policy	Impact measurement	Reviewing	Formal policy	Impact measurement	Reviewing
<i>Mean propensity score in unmatched sample (standard error):</i>												
Treated	.763 (.012)	.135 (.014)	.194 (.013)	.734 (.017)	.105 (.014)	.210 (.022)	.789 (.026)	.216 (.077)	.386 (.076)	.827 (.030)	.233 (.085)	.540 (.086)
Controls	.357 (.017)	.051 (.002)	.094 (.003)	.342 (.018)	.036 (.002)	.076 (.004)	.341 (.029)	.060 (.006)	.076 (.012)	.341 (.038)	.046 (.006)	.070 (.010)
<i>Observations in unmatched sample:</i>												
Treated	1013	178	275	615	94	144	294	45	70	296	46	73
Controls	278	1149	1052	190	733	683	124	370	373	124	373	374
<i>Off support:</i>												
Treated	319	12	20	213	16	14	155	3	23	144	3	27
<i>Mean difference in matched sample (p-value):</i>												
<i>Industrial Relations and HRM</i>												
Union presence	.006 (.874)	-.100 (.363)	-.273 (.000)	-.026 (.551)	-.118 (.237)	-.030 (.659)	-.201 (.060)	-.112 (.540)	-.089 (.521)	.288 (.026)	-.391 (.084)	-.100 (.367)
Participation in returns	.181 (.001)	-.082 (.616)	-.145 (.235)	.221 (.007)	.109 (.600)	.001 (.991)	-.059 (.548)	.104 (.721)	.408 (.473)	-.316 (.280)	-.628 (.220)	-.053 (.858)
Participation in control	-.126 (.013)	-.337 (.012)	-.339 (.000)	-.178 (.011)	-.293 (.102)	-.145 (.401)				-.192 (.162)	-.603 (.108)	-.223 (.264)
Independence in work	.185 (.027)	.322 (.069)	.309 (.001)	.040 (.674)	-.159 (.344)	.309 (.140)						
Culture of head office: USA				-.102 (.016)	.011 (.617)	.012 (.566)	.018 (.028)	-.112 (.398)	-.152 (.241)	.002 (.091)	-.246 (.279)	.007 (.610)
Culture of head office: other non-UK				-.013 (.580)	-.093 (.396)	-.014 (.625)	.067 (.608)	.012 (.959)	.002 (.213)	.168 (.190)	.130 (.366)	-.014 (.336)
<i>Influences on employee characteristics</i>												
TTWA population: % ethnic minority							-2.47 (.256)	-1.01 (.720)	.021 (.995)	-6.92 (.002)	-.786 (.907)	-.053 (.990)
Industry employment: % ethnic minority	.169 (.404)	.393 (.410)	1.09 (.008)	.250 (.336)	-.530 (.408)	-.250 (.670)						

TABLE A1
Details of propensity score matching

<i>Outcome variable:</i>	Subjective indicator of above average productivity performance			Subjective indicator of above average financial performance (profits)			Log gross value added per employee			Log profits per employee		
<i>Equal Opportunities measure:</i>	Formal policy	Impact measurement	Reviewing	Formal policy	Impact measurement	Reviewing	Formal policy	Impact measurement	Reviewing	Formal policy	Impact measurement	Reviewing
Industry employment: % female	4.99 (.004)	5.00 (.272)	11.4 (.000)	6.67 (.003)	1.14 (.846)	.310 (.935)						
<i>Market conditions and competitiveness</i>												
Extent demand depends on quality: medium	-.039 (.374)	-.139 (.198)	-.080 (.429)									
Extent demand depends on quality: high	.071 (.144)	.067 (.580)	.033 (.742)									
State of the market: mature	.029 (.434)	-.169 (.025)	-.036 (.658)	-.016 (.784)	-.061 (.608)	.091 (.446)						
State of the market: declining or turbulent	-.027 (.488)	.132 (.106)	.025 (.786)	-.076 (.138)	-.036 (.784)	.025 (.753)	-.004 (.968)	-.094 (.694)	.029 (.935)			
State of the market: mature, declining or turbulent										-.106 (.582)	-.118 (.559)	.116 (.434)
Trading in the international market	-.102 (.004)	-.123 (.054)	-.168 (.025)	-.068 (.162)	-.223 (.043)	-.054 (.229)						
<i>Skills</i>												
Managerial/professional occs (% of employees)	2.38 (.194)	10.0 (.015)	6.08 (.023)									
Routine unskilled occupations (% of employees)							1.28 (.705)	3.81 (.582)	-17.1 (.011)			
Age 16-21 (% of employees)	.587 (.736)	-1.11 (.690)	-.890 (.794)									
<i>Establishment characteristics</i>												
Ownership: partly foreign				.070 (.011)	-.048 (.617)	.074 (.186)						
Ownership: predominantly foreign				-.129 (.025)	-.164 (.201)	.031 (.655)						
Establishment size: 50 employees or more	-.289 (.000)	-.454 (.000)	-.428 (.000)	-.185 (.000)	-.263 (.036)	-.346 (.000)						
Organisation size: 100 employees or more	-.002 (.939)	-.110 (.300)	-.093 (.051)	.058 (.168)	.022 (.869)	-.054 (.481)	-.027 (.343)	-.041 (.879)	-.013 (.886)	.180 (.150)	-.316 (.072)	.030 (.779)
Part-time working (% of employees)				8.40	9.20	7.55	4.31	15.1	21.6	5.42	.038	5.45

TABLE A1
Details of propensity score matching

<i>Outcome variable:</i>	Subjective indicator of above average productivity performance			Subjective indicator of above average financial performance (profits)			Log gross value added per employee			Log profits per employee		
<i>Equal Opportunities measure:</i>	Formal policy	Impact measurement	Reviewing	Formal policy	Impact measurement	Reviewing	Formal policy	Impact measurement	Reviewing	Formal policy	Impact measurement	Reviewing
Young establishment				(.010)	(.106)	(.358)	(.329)	(.021)	(.087)	(.334)	(.997)	(.389)
							-.038	.004	.003	-.006	.003	.001
							(.182)	(.350)	(.358)	(.328)	(.359)	(.778)
<i>Industry</i>												
SIC 2		-.034	-.012		-.005	-.011		.002	.002		-.006	.001
		(.154)	(.237)		(.352)	(.393)		(.351)	(.303)		(.563)	(.252)
SIC 3	.010	.032	.002	.007	.127	.012	-.019	-.006	.002	-.035	-.461	-.000
	(.552)	(.438)	(.910)	(.753)	(.098)	(.255)	(.369)	(.349)	(.236)	(.273)	(.024)	(.961)
SIC 4	-.042	-.086	.109	.026	.118	.110	.155	.254	.135	.155	.081	.255
	(.372)	(.221)	(.198)	(.646)	(.379)	(.315)	(.080)	(.133)	(.270)	(.040)	(.437)	(.067)
SIC 5	.043	-.012	.037	.057	.017	-.024	.026		-.004	.006		.051
	(.029)	(.565)	(.375)	(.009)	(.612)	(.752)	(.146)		(.325)	(.788)		(.329)
SIC 6	-.011	.033	-.063	-.027	-.050	-.031	.135	-.118	-.001	.108	.155	-.003
	(.705)	(.503)	(.049)	(.436)	(.665)	(.358)	(.247)	(.333)	(.792)	(.397)	(.275)	(.211)
SIC 7	.062	.070	.047	.052	.011	-.025	-.003	.006	.249	-.021	.004	-.160
	(.010)	(.281)	(.338)	(.010)	(.600)	(.541)	(.102)	(.208)	(.290)	(.537)	(.223)	(.176)
SIC 8	-.017	.035	.000	-.041	-.033	.078	-.120	-.167	.010	-.364	.089	.002
	(.625)	(.664)	(.996)	(.485)	(.678)	(.530)	(.159)	(.285)	(.950)	(.003)	(.147)	(.928)
SIC 9		.001										
		(.178)										
SIC 10	.012	.013	.011		.006	.016		.002	-.290		-.072	.007
	(.327)	(.498)	(.420)		(.316)	(.323)		(.109)	(.190)		(.207)	(.358)
SIC 11	.029	.064	.133	-.009	-.052	-.076	.109	.050	-.016	.106	.290	-.202
	(.235)	(.478)	(.018)	(.808)	(.461)	(.476)	(.089)	(.573)	(.853)	(.120)	(.186)	(.061)
SIC 12	-.017	.015	-.032	.056	-.053	-.040	.033	.065	.085	.086	-.051	.070
	(.396)	(.717)	(.498)	(.003)	(.506)	(.621)	(.467)	(.188)	(.232)	(.028)	(.608)	(.481)

Source: Workplace Employment Relations Survey 2004 and Annual Business Inquiry

Notes: Prediction of the propensity score is based on the controls shown in Table 2 and takes into account survey weights; One-to-one nearest neighbour matching with replacement imposing common support; Treated observations off support include those whose estimated propensity score is greater (less) than the maximum (minimum) estimated propensity score observed for the controls and those for whom we cannot find a control with an estimated propensity score within a range of 0.002; Mean differences between the treated and controls in the matched sample are calculated using survey weights for the treated.

TABLE A2
Details of instrumental variables analysis

<i>Outcome variable:</i>	Subjective indicator of above average productivity performance			Subjective indicator of above average financial performance (profits)			Log gross value added per employee			Log profits per employee		
<i>Equal Opportunities measure:</i>	Formal policy	Impact measurement	Reviewing	Formal policy	Impact measurement	Reviewing	Formal policy	Impact measurement	Reviewing	Formal policy	Impact measurement	Reviewing
<i>Test for exogeneity of the IVs:</i>												
HR manager/owner female	$\chi^2(1)=0.42 (.518)$			$\chi^2(1)=0.21 (.646)$			F(1,421)=2.09 (.149)			F(1,425)=2.61 (.107)		
HR manager/owner qualified	$\chi^2(1)=0.24 (.624)$			$\chi^2(1)=0.65 (.419)$			F(1,421)=1.27 (.261)			F(1,425)=2.30 (.130)		
HR manager/owner female & qualified	$\chi^2(2)=0.53 (.767)$			$\chi^2(2)=0.70 (.703)$			F(2,420)=1.69 (.185)			F(2,424)=2.37 (.095)		
<i>Test for weak IVs:</i>												
HR manager/owner female, $\chi^2(1)$	9.71 (.002)	2.91 (.088)	0.03 (.865)	7.88 (.005)	5.90 (.015)	0.50 (.478)	3.95 (.047)	15.6 (.000)	0.84 (.358)	2.15 (.142)	19.1 (.000)	0.89 (.345)
HR manager/owner qualified, $\chi^2(1)$	14.4 (.000)	10.5 (.001)	15.6 (.000)	20.3 (.000)	8.33 (.004)	6.06 (.014)	16.8 (.000)	13.0 (.000)	7.63 (.006)	15.8 (.000)	10.9 (.001)	7.98 (.005)
HR manager/owner female & qualified, $\chi^2(2)$	20.4 (.000)	11.5 (.003)	16.6 (.000)	28.0 (.000)	13.9 (.001)	7.59 (.023)	17.7 (.000)	26.8 (.000)	8.41 (.015)	16.4 (.000)	27.6 (.000)	8.84 (.012)
<i>Test for EO exogeneity:</i>												
Correlation of error terms	.084 (.794)	-.188 (.784)	-.427 (.407)	-.396 (.152)	-.977 (.000)	-.220 (.619)	.527 (.167)	-.724 (.363)	-.104 (.761)	.665 (.066)	-.563 (.848)	.214 (.541)

Source: Workplace Employment Relations Survey 2004 and Annual Business Inquiry

Notes: P-values in brackets; Test for exogeneity of the IVs is a Wald test of the hypothesis that the marginal effect of the IV is zero (as opposed to non-zero) in the model specified in Table 2; Test for weak IVs is a Wald test of the hypothesis that the marginal effect of the IV is zero in a probit model of Equal Opportunities selection that includes the covariates used in the outcome model specified in Table 2; The term ρ denotes the correlation between the error term in the equation for Equal Opportunities selection and the error term in the equation for business performance. The test of the $\rho=0$ is a test of whether the Equal Opportunities measure is exogenous to the business performance measure.