



THE UNIVERSITY *of York*

Discussion Papers in Economics

No. 09/28

The Gender Pay Gap for Private Sector Employees in Canada and Britain

By

**Marie Drolet, Statistics Canada
and
Karen Mumford, University of York**

**Department of Economics and Related Studies
University of York
Heslington
York, YO10 5DD**

The Gender Pay Gap for Private Sector Employees in Canada and Britain.

Marie Drolet¹ and Karen Mumford^{2,3}

¹Statistics Canada

² Department of Economics
University of York

³IZA, Institute for the Study of Labour.

Abstract

This paper uses British and Canadian linked employer-employee data to investigate the importance of the workplace for the gender wage gap. Implementing a novel decomposition approach, we find substantial unexplained wage gaps in the private sector of both countries. Whilst this wage differential is partially offset by women, on average, receiving a workplace specific return which is relatively higher than that paid to men, a substantial and significant unexplained within workplace wage gap remains which is considerably higher in Britain than in Canada. The results are consistent with a prima facie argument that country-specific factors, such as the wage setting environment, are important determinants in explaining the relative size of the gender wage gap.

Marie Drolet is a Senior Research Economist with the Business and Labour Market Analysis Division at Statistics Canada (email: marie.drolet@statcan.ca). Karen Mumford is Professor of Economics in the Department of Economic and Related Studies, University of York (email: kam9@york.ac.uk). We are especially grateful to Z. Patak, K. Marchand, L. Marchand and Peter N. Smith for their insights and support. The authors also wish to thank the anonymous referees and the participants at the BJIR Conference on Workplace Issues at the London School of Economics, March 14-15, 2008.

Corresponding author is Karen Mumford, kam9@york.ac.uk

1. Introduction

Gender wage gaps have been declining in most industrialized countries in the last three decades coinciding with the introduction of anti-discrimination legislation; higher levels of educational attainment among women; increases of women in non-traditional professional occupations; and more choices being made available to men and women both inside and outside the labour market (Blau and Kahn, 2007). Despite these gains, substantial earnings gaps have remained in Britain and Canada (Blau and Kahn, 2003) and initiatives aimed at promoting gender equality in the labour market remain high on the policy agenda in both countries.

The literature on gender wage inequality is well established (Altonji and Blank, 1999; Blau and Kahn, 2001). While there is some variation in the findings of these studies, (related to time periods, country-specific effects, measurement of earnings, and analytical populations to name a few), it is generally concluded that human capital differences alone do not explain the gender wage gap. The recent availability of employee-employer linked data has resulted in several studies which find that firms play an important role in explaining variations in individual earnings (Groshen, 1991; Bronars and Famulari, 1997; Abowd et al., 2004; Bayard et al., 2003). These studies confirm that after accounting for workers' human capital, job characteristics and workplace segregation, men typically earn more than women (Carrington and Troske, 1998; Drolet, 2002; Mumford and Smith, 2007).

International comparisons of gender pay differentials are rare, partly because institutional factors differ greatly across nations yet there exists an opportunity to improve our understanding of the how the labour market functions (Blau and Kahn, 2003). A great strength in the use of linked employee-employer data for international comparisons is that many of the unobservable institutional factors expected to impact upon wages may operate through the potentially very important workplace (Blanchflower, 1998).

While these factors may not be able to be measured directly, they can be captured by including workplace specific fixed effects in the analysis (Davies and Welpton, 2008). The growth in the number of highly detailed, linked employee and workplace data sets for different countries over the last two decades is now allowing these types of comparisons to take place (early examples include studies for Australia, Britain, Japan and France (Daly et al, 2006); for Australia and France (Meng and Meurs, 2004); and for Australia and Britain (Mumford and Smith, 2003). All of whom found substantial and significant effects associated with the workplace for men and women.

The objective of this paper to provide a comprehensive picture, circa 2003/4, of the role of the workplace in gender pay differentials in Britain and Canada. To meet our objective we show that pay differences between men and women are substantial and significant in both countries; explore multiple and complementary strategies to address the role of workplaces on the gender wage gap; and use decomposition techniques to apportion the gender wage differential to differences in workplace-specific fixed effects and in personal attributes. The paper is organized as follows. The next section briefly describes the institutional settings of wage determination in Britain and Canada. The data are described in Section 3. Section 4 outlines the determinants of earnings and our estimation techniques. The empirical results are presented in Section 5 and concluding remarks follow in Section 6.

2. Labour market institutions of wage determination

Britain and, its former colony, Canada share many common legal and cultural roots. Both countries are categorized by the OECD as having highly decentralized firm-by firm wage bargaining practices (Card et al., 2003, pages 247-251). Changes in the British system of wage determination since the 1970s have moved the countries closer in terms of regulatory processes. Canada experienced virtually no change in trade union membership while Britain

witnessed a decline in both trade union density (from 50% in 1980 to 34% in 1994) and in the percentage of the workforce covered by a collective agreement (from 70% in 1980 to 47% in 1994) (Card et al., 2003, Table 1). In consequence, the two countries now have similar trade union membership and collective agreement rates, relative to paid employees. Another important similarity between Britain and Canada is that low wage workers in both countries are protected by minimum wage legislation.² Minimum wage legislation is more likely to impact on women if they are disproportionately employed in low paying jobs (Blau and Kahn, 2003).

Britain and Canada have both enacted a combination of employment equality legislation which would be expected to improve the relative wages of women. The Equal Pay Act was passed in Britain in 1970 in recognition of women receiving lower pay than men. Whilst this Act included a broad concept of equity allowing for comparisons between jobs typically performed by women and jobs typically performed by men, the emphasis was on equal pay for equal work (Dickens, 2007). The Act was extended in 1983 to encompass work of equal value in response to a European Commission ruling (Dickens, 2007; page 464). This ruling was reiterated with the Treaty of Amsterdam (1999: Article 141) which clearly requires Member States ensure that equal pay for work of equal value is paid to men and women from April 1999. More recently, the Women and Work Commission found that, whilst the causes of the current gender earnings gap in Britain were complex and interrelated, intrinsic amongst them was occupational segregation, lack of vocational qualifications, discrimination, and fewer job opportunities for women wanting to combine market employment with non-market family responsibilities (Women and Work Commission, 2006 pages x-xvi) . In 2007, the British Government launched the Commission for Equality and Human Rights and a range of policies predominantly targeted at increasing the occupation choices of women (via skill acquisition and broadening attitudes) and increasing their ability to cope with family and

work commitments simultaneously (Department for Communities and Local Government, 2007).

In Canada, the Act to Promote Equal Pay for Female Employees was passed in 1956 and prohibited employers from paying women less than men for doing the same work. The emphasis in this early legislation was also on equal pay for equal work. More recent initiatives aimed at promoting gender equality in the labour market are generally categorized in three main areas: pay equity, employment equity and family friendly policies. Pay equity legislation is directed at wage disparities arising from the lower pay of women's jobs with respect to comparably valued men's jobs within a specific workplace. In particular, Pay Equity laws apply to the federal jurisdiction and the public sector of the Provinces of Manitoba, New Brunswick, Nova Scotia, and Prince Edward Island. In the largest two of Canada's ten Provinces, Ontario and Quebec, the legislation covers both the private and public sectors. The Employment Equity Act (1995) aims to remove barriers that limit women's representation in male-dominated occupations for reasons unrelated to qualifications and/or ability. Finally, the introduction of family-friendly policies (such as job-protected maternity leave, flexible work hours, and/or subsidized day-care) aimed at balancing work-family commitments and encourages the labour market participation of women with young children.

The existence, and persistence, of a sizeable gender wage gap is often viewed as the driving force behind gender equality policies such as those introduced in Britain and Canada. These policies attempt to reduce gender pay differentials by promoting equal opportunity and outcomes, reducing segregation and by re-assessing the comparable value of women's work. But the efficacy of these policy prescriptions are often passionately debated in policy circles, among academics and in the media.

3. Data.

Comparable empirical evidence is a necessity when considering an international study of gender pay gaps. The Canadian and British data used in this study are drawn from ‘sister surveys’ that include many overlapping questions and feature a similar surveying approach. They are, however, not identical surveys and important differences exist.

Workplace and Employee Survey

The Canadian data are drawn from the 2003 Workplace and Employee Survey (WES)³. The target population of employers is all business locations operating in Canada that have paid employees in March with the exception of those employers operating in (i) Yukon, Nunavut and the Northwest Territories; and (ii) crop and animal production; hunting, fishing and trapping; private household; religious organizations; and public administration. The target population of employees is all employees working or on paid leave in March and who receive a Customs Canada and Revenue Agency T4 tax slip. In other words, the WES is representative of employers and their workers in the private, non-agricultural sector of the Canadian economy. The lack of data on public sector workplaces and employees is an unfortunate limitation of the WES data set.⁴

The WES has a stratified two-stage sample design: first, workplaces are selected from a frame provided by the Business Register and then stratified by industry, region and size (Phillips, 2004). In the second stage, the employee component, respondents are randomly selected based on lists of employees made available to interviewers by the selected workplaces. The response rates were 83.1% for the workplace survey and 82.7% for the employee survey (Phillips, 2004). The 2003 WES collected data from a total of 6,565 workplaces and 20,834 workers.

Workplace Employee Relations Survey 2004

The Workplace Employee Relations Survey 2004 (WERS) is a nationally representative survey of workplaces in Britain with 5 or more employees⁵. WERS also has a stratified two-stage sample design. Face-to-face interviews were conducted with a senior manager (with day-to-day responsibility for employee relations) in selected workplaces. At those workplaces responding to the manager survey, a questionnaire was presented to 25 randomly selected employees (in workplaces with more than 5 employees) or to all employees (in workplaces with fewer than 26 employees). The response rates were 64.6% for the management interview and 60.7% for the survey of employees (Chaplin et al., 2005, pages 57 to 67). In total, the 2004 WERS collected information from 22,451 workers in 1,733 of workplaces.

Analytical sample

The data sets are not identical in population coverage. Excluding public sector workplaces in WERS to match the Canadian WES sample, excluding workplaces with fewer than 5 employees in WES to match the British WERS sample, and retaining workers with complete information leaves an analytical sample for Britain of 14,272 employees and 18,837 workers for Canada.

Every attempt was made to harmonize variable concepts between the WERS and the WES. Table A1 in the Statistical Appendix provides the variable definitions used in the paper. Sampling weights are used to calculate the empirical results that follow. For WERS, weights allowing for stratification and workplace clustering in the private sector are provided by the data suppliers (Chaplin et al., 2005). The WES portion of the analysis uses bootstrap techniques in the calculation of its standard errors thus accounting for the non-independence of worker observations (i.e. workers in the same location) and the complex survey design (Phillips, 2004).⁶

Macroeconomic conditions in the countries during the period of study (2003-4) were also comparable. Business cycle indicators suggest that in 2003-4 both economies were growing strongly (GDP growth per capita was 2.3% in Britain and 3.3% in Canada), and that unemployment rates were relatively low (at 5% the UK rate was below the OECD average of 6.9%, whilst the Canadian unemployment rate was closer to 7.5%) (OECD, 2005).

Measuring earnings

For British workers, hourly earnings are calculated for each employee by dividing their usual gross (before tax and other deductions) weekly wages (including overtime payments) by the hours they usually work each week (including any overtime and extra hours). The WERS data do not give the actual value of gross weekly wages but rather the interval to which the wage belongs for each sampled worker, there are 14 bands. In the regression analysis below, the mid-point of the interval is used as the measure of usual weekly wages (some possible implications of this banding are discussed further with estimation results in Section 6 below). Usual hours worked is a continuous measure. The subsequent hourly wage measure is the ratio of weekly wages to usual hours and is therefore continuous. Any employees showing an hourly rate of pay below £1 or above £100 are excluded from the British dataset.

For Canadian workers, total compensation is based on usual wages and salaries before taxes including any other earnings (i.e. tips, overtime). WES respondents were allowed to report different bases of pay (i.e. hourly, weekly, yearly etc.) which (if necessary) were subsequently converted to an hourly wage rate based on their reported weekly hours worked.

Characteristics of the British and Canadian workforces

Table 1 provides selected summary statistics for private sector workers in Canada and Britain (additional descriptive statistics are provided in Tables A1 and A2 of the Appendix). To begin with, gender differences in earnings are remarkably similar in the private sector for both

Britain and Canada. Men typically earn over 20% more than the average hourly wage rate of women (24.7 log points in Britain and 23.3 log points in Canada, see the first panel of Table 1).

Working part-time is more common amongst female employees in Britain than in Canada. Of the OECD member countries, in 2004 the United Kingdom had one of the highest proportion of part-time working amongst women (OECD, 2005; page 253), whereas the proportion of women working part-time in Canada is close to the OECD average (of 25.4%). The proportion of working women who are married is very similar across the two countries. The average age of male employees is the same in the two countries; the women tend to be a little younger, especially in Britain. Measures of age are usually assumed to be positively related to wages for several reasons, not least of which is the ability to acquire skills over the time period the employee has spent working (Becker, 1962). Since the WERS survey does not gather information on actual work experience for the employee, age (and age-squared) is partly used as a proxy for work experience in the analysis below. It is common to find that earnings increase with age at a decreasing rate (Becker, 1962; Altonji and Blank, 1999). The results need to be interpreted with caution if women are more likely than men to have taken time out of the labour market, their age may not accurately reflect the relationship between their actual work experience and earnings. In which case, including such a proxy of actual work experience may underestimate the extent of the explained component of the gender wage gap (Regan and Oaxaca, 2009).

Table 1. Selected summary statistics for private sector employees in Britain and Canada.

	Britain			Canada		
	Men (1)	Women (2)	Gap (3)	Men (1)	Women (2)	Gap (3)
log of average hourly earnings for: all private sector workers	2.199	1.952	0.247	3.030	2.797	0.233
Percent of private sector workers who are:						
Part-time	8.9	38.6	-29.7	6.9	21.6	-14.7
Married	66.5	63.4	3.1	72.0	64.5	7.5
Average age (years)	40.4	38.8	1.6	40.4	40.0	0.4
log of average hourly earnings for:						
young workers (less than 40 years old)	2.117	1.949	0.168	2.887	2.696	0.191
prime age workers (aged 40-49 years)	2.342	2.005	0.337	3.146	2.871	0.275
mature workers (aged 50 plus years)	2.227	1.907	0.320	3.173	2.901	0.272
% of all private sector workers who are university graduates	26.3	19.5	6.8	22.7	23.6	-0.9
% of young workers (less than 40 years old) who are graduates	31.1	25.3	5.8	23.1	26.6	-3.5
% of prime age workers (aged 40-49 years) who are graduates	25.7	16.5	9.2	22.2	20.9	1.3
% of mature workers (aged 50 plus years) who are graduates	17.5	9.2	8.3	22.4	21.4	1.0
Percent of private sector workers employed in:						
Management	16.9	10.1	6.8	16.5	8.7	7.8
Clerical	7.7	27.1	-19.4	7.2	21.8	-14.6
Sales and services	6.0	18.7	-12.7	3.3	11.7	-8.4
No. observations	7464	6790				

Sources: British Workplace Employee Relations Survey 2004 and the Canadian Workplace and Employee Survey 2003.

Gender differences in earnings can also be seen to vary in magnitude for different age groups in Table 1: the gender wage gap is smallest among young workers (those aged below 40 years) and largest among mature workers (those aged 50 years and above). The smaller gender wage gap among young workers may be partially attributable to young men and women having more similar skills and accumulated work experience. The fact that the pay gap is larger among older workers may also reflect larger gender differences in educational attainment, in career opportunities and upward mobility, and the greater possibility of these women having experienced career interruptions, with long withdrawals from the labour force

and shorter current job tenure (Regan and Oaxaca, 2009). This observation may have interesting implications for the longer term earnings profiles of young workers and the overall gender wage gap. As older workers retire and younger cohorts enter the labour force, the long-run implication may be a reduction in the overall gender wage gap, *ceteris paribus*.

Blau and Kahn (2001) further argue that the lower gender gap found for younger employees reflects better working conditions now relative to the past. Implying that older women are facing an enduring wage penalty associated with their working conditions in the past. With a single cross section of data, it is not possible to track cohorts over time. It is, however, possible to more fully address different earnings gaps between younger and older employees by dividing the data into sub-samples according to the age of the worker (Blau and Kahn, 2001); this is explored further in the empirical analysis below.

About one in four private sector workers have a university degree or post-graduate qualification in both Britain and Canada (column one of Table 1). Considering education within age groups reveals substantially higher rates of tertiary educational attainment amongst young employees in Britain, this is especially true for women. In Canada, there is also evidence of young women being more likely to be a graduate; however, there is little gender difference in the likelihood of being a graduate amongst the older age groups (comparing columns 3 and 6 of Table 1). This finding contrasts strongly with the gender differences in higher levels of educational attainment amongst mature employees in Britain (columns 1 and 2).⁷

The gender differences in occupational distributions were relatively consistent between the two countries and conformed to *a priori* expectations (Bergmann, 1971; Baker and Fortin, 2001). In both countries, men were more likely to be in managerial, craft or operative positions, while women were more likely to be employed as clerks or in sales positions.

4. Earnings and its determinants

The well-established human capital model is adopted here as the theoretical basis for the earnings function (Becker, 1962). At the employee level, the human capital model predicts that wages increase with measures of accumulated skills such as formal education and training. The earnings function is augmented with the inclusion of other explanatory variables capturing individual employee characteristics such as demographic variables (including age, age squared, the presence of dependent children, marital status, ethnic identification, and physical disability); the nature of the employment contract (being a permanent employee, trade union membership, working part-time and current job tenure); and the worker's occupation.

Using semi-logarithmic wage equations, the earnings equation is estimated via ordinary least squares (OLS) as:

$$W_i = \alpha + X_i\beta + F_i\gamma + \varepsilon_i \quad (1)$$

where W_i is the natural log of the wage for worker i ; α is an intercept term; X_i is a vector of individual-specific regressors capturing the characteristics of worker i expected to impact on wages; β is a vector of estimated slope coefficients for the individual-specific characteristics; the variable F_i indicates whether the worker is female and its corresponding coefficient γ captures the impact of being a woman relative to being a man; ε_i is a residual term. The coefficient estimates, β and γ , whilst strictly measured in log points can be interpreted as the approximate percentage change in wages for a one unit change in the explanatory variable. In this model, the slope coefficients, the β s, are constrained to be the same for men and women, analogous to the fully pooled model used by Bayard et al., (2003).⁸

Estimation strategy with workplace specific fixed effects

Multiple workers are observed for each workplace in the WES and WERS samples used here. Estimation by OLS ignores the hierarchical nature of the data and may violate the assumption of independence since the disturbances are likely to be correlated for workers in the same workplace (Deaton, 1998). The more appropriate error structure includes a portion varying across workplaces but constant for workers in the same workplace. This portion captures unobserved characteristics at the workplace-level associated with the wages of all workers in the workplace, such as managerial quality or structure (Wooldridge, 2002; page 248). A useful technique to explore the extent of the workplace having a common impact on the earnings of all of those who are employed there is to use a workplace specific fixed effect (or within estimator) model.⁹ Workplace-specific fixed effects are allowed for here by re-estimating equation (1) using a fixed effects (FE) model:

$$W_{ij} = \alpha + K_j\delta + X_{ij}\beta + F_i\gamma + \varepsilon_{ij} \quad (2)$$

where K is an indicator variable for each workplace j and δ captures the workplace specific fixed effect.

5. Estimation results

Pooled earnings functions

Results from the OLS estimation of the pooled earnings functions are presented in Table 2; columns 1 and 2 for Britain, and 5 and 6 for Canada. Analogous results for the fixed effects estimation are provided in columns 3 and 4 for Britain, and 7 and 8 for Canada. Total raw wage gaps are also provided for each of the samples in the final row; these are simply the unadjusted differences in the log average hourly wages of men and women observed in the data. Of particular importance to this study, after allowing for the inclusion of a broad range of explanatory variables in the earnings functions¹⁰, a significant and substantial unexplained

gender pay gap remains in both countries as measured by the coefficient on the female dummy variable (15.5 log points in Britain and 18.3 log points in Canada). These unexplained gender wage gaps constitute 62.8% of the total raw wage gap in Britain and 78.5% of the total raw wage gap in Canada, respectively.

Including workplace fixed effects in the analysis is associated with a considerable reduction in these unexplained gender pay gaps (from 15.5 to 10.6 log points in Britain and from 18.3 to 11.0 log points in Canada). The unexplained pay gap is now 42.9% of the total raw pay gap in Britain and 47.2% of the total raw gap in Canada. In other words, the workplace fixed effects are associated with about a third of the unexplained gender wage gap in both countries (a little more in Canada than in Britain). This finding implies that women are more commonly employed in low paying workplaces than are men and that this is true in both countries.

Comparing the estimated parameters for the individual employee's characteristics from the earnings functions with workplace fixed effects (columns 3 and 7) and those without workplace fixed effects (columns 1 and 5), reveals further implications of the workplace in the wage determination process. Including the workplace fixed effects in the analysis is associated with lower returns to most human capital variables within workplaces in both countries. For example, Canadian workers with a university degree earn 37.4 log points more

Table 2. Earnings functions for private sector employees in Britain and Canada, pooled analysis.

	Britain				log hourly pay	Canada			
	OLS		with workplace effects			OLS		with workplace effects	
	Coef.	Std Err	Coef.	Std Err		Coef.	Std Err	Coef.	Std Err
	(1)	(2)	(3)	(4)		(5)	(6)	(7)	(8)
female	-0.155	0.012	-0.106	0.010	female	-0.183	0.025	-0.110	0.011
age	0.042	0.003	0.031	0.003	age	0.034	0.007	0.024	0.003
age squared	-0.448	0.037	-0.317	0.031	age squared	-0.353	0.083	-0.237	0.036
training	0.006	0.002	0.004	0.001	training	0.0007	0.001	0.000	0.0003
education (primary omitted category)					education (primary omitted category)				
intermediate secondary (lower)	0.075	0.015	0.067	0.013	high school	0.105	0.043	0.031	0.019
intermediate secondary (upper)	0.127	0.013	0.084	0.011	trade	0.175	0.048	0.065	0.021
higher secondary (lower)	0.142	0.022	0.101	0.018	some post secondary	0.196	0.050	0.051	0.020
higher secondary (upper)	0.240	0.021	0.185	0.016	college	0.264	0.048	0.086	0.019
degree	0.312	0.018	0.205	0.014	university degree	0.374	0.053	0.162	0.021
postgraduate	0.397	0.024	0.252	0.019	post graduate	0.501	0.076	0.289	0.026
					unknown	0.108	0.084	0.033	0.034
youngest dep. child 0-4	0.037	0.013	0.016	0.011	youngest dep. child 0-4	0.041	0.036	0.023	0.015
youngest dep. child 5-11	0.001	0.015	0.013	0.012	youngest dep. child 5-11	0.021	0.032	0.001	0.014
youngest dep. child 12-18	-0.030	0.013	-0.010	0.012	youngest dep. child 12-18	0.016	0.035	0.007	0.014
married	0.053	0.010	0.046	0.008	married	0.071	0.028	0.048	0.011
disabled	-0.019	0.014	-0.003	0.012	disability	-0.042	0.043	-0.004	0.015
visible minority	-0.055	0.021	-0.075	0.017	visible minority	-0.114	0.050	-0.107	0.018
permanent contract	0.038	0.022	0.030	0.020	permanent contract	0.041	0.090	0.051	0.027
part-time	-0.068	0.018	0.057	0.016	part-time	-0.101	0.040	-0.041	0.015
trade union member	0.075	0.013	0.014	0.011	trade union member	0.072	0.028	-0.065	0.016
tenure	0.015	0.005	0.006	0.004	tenure	0.015	0.030	0.002	0.010
tenure squared	0.0004	0.001	0.001	0.000	tenure squared	0.886	2.267	1.085	0.796
occupation (clerical omitted category)					occupation (clerical omitted category)				
managerial	0.255	0.020	0.326	0.015	managers	0.423	0.051	0.469	0.019
professional	0.278	0.023	0.262	0.020	professionals	0.348	0.044	0.337	0.018
technical	0.143	0.017	0.148	0.014	technical trade	0.082	0.030	0.141	0.015
craft	-0.076	0.021	0.039	0.019	market sales	-0.176	0.053	0.062	0.025
personal	-0.277	0.024	-0.094	0.024	production	-0.077	0.058	0.006	0.024
sales	-0.269	0.021	-0.071	0.019					
operative	-0.210	0.021	-0.100	0.016					
unskilled	-0.364	0.020	-0.176	0.017					
constant	1.022	0.059	1.189	0.053	constant	1.633	0.157	2.036	0.067
R-squared	0.478		0.670		R-squared	0.523		0.800	
No. observations	14272		14272		No. observations	18837		18573	
Raw (unadjusted) wage gap	0.247					0.233			

Sources: British Workplace Employee Relations Survey 2004 and the Canadian Workplace and Employee Survey 2003.

Note: variable definitions are not identical across the countries; see Table A1 in the appendix for fuller definitions.

than workers with primary education (column 5). After controlling for the workplace fixed effects, Canadian workers with a university degree are found to earn 16.2 log points more than workers with primary education (column 7). The comparable figures for Britain are 20.5 log points allowing for workplace effects and 31.2 log points without.

These results provide evidence that part of the variation in individual earnings attributable to, for example, differing levels of education may arise because high-wage workplaces disproportionately employ high skilled workers (in both countries).¹¹ In the extreme case of part-time employees in Britain the estimated coefficient on the part-time dummy indicates a change from a negative to a positive association with average hourly wages after the introduction of workplace fixed effects in the model. A similar result was found for Australia by Meng and Meurs (2004) and is consistent with part-time employees being strongly segregated into low paying workplaces within which they are relatively highly paid (Connolly and Gregory, 2008; Manning and Petrongolo, 2008).

Similar analysis can be carried out for different age groups by dividing the sample accordingly; the estimated gender wage gaps are provided in Table 3, standard errors are reported immediately below the coefficient estimates (full results are available in Appendix Tables A4 and A5). Reading down the columns of Table 3, the raw (unadjusted) gender pay gaps are found to be considerably lower amongst the young than the older (prime or mature age) workers in Britain; indeed they are almost half the size. These relative differences are not as sizable in Canada but they are still substantial. The unexplained female wage gap in the OLS results (as measured by the female coefficient reported in columns 1 and 3) is also considerably lower amongst younger employees (in both Britain and Canada).

Table 3. Estimated gender coefficients.

	Britain		Canada	
	Without Workplace effects (OLS)	With Workplace effects	Without Workplace effects (OLS)	With Workplace effects
	(1)	(2)	(3)	(4)
Young workers (aged < 40 years)				
Raw wage gap		0.168		0.206
Female Coefficient	-0.094	-0.077	-0.139	-0.088
Std error	0.014	0.012	0.034	0.018
Prime aged workers (aged 40-49 years)				
Raw wage gap		0.336		0.275
Female Coefficient	-0.217	-0.128	-0.206	-0.136
Std error	0.022	0.020	0.041	0.022
Mature workers (aged 50 years and over)				
Raw wage gap		0.320		0.271
Female Coefficient	-0.218	-0.151	-0.207	-0.090
Std error	0.026	0.024	0.055	0.031

Sources: British Workplace Employee Relations Survey 2004 and the Canadian Workplace and Employee Survey 2003. Dependent variable is log hourly wages. Independent variables (and full results) are listed in Tables A4 and A5 of the Appendix, they include age, age squared, training, education controls, marital status, age of youngest dependent child, visible minority status, disability, permanent contract, trade union membership, tenure, tenure squared, part-time and occupation controls. Note: variable definitions are not identical across the countries; see Table A1 in the Appendix for fuller definitions.

Including workplace fixed effects in the analysis (columns 2 and 4) is associated with a substantial reduction in the unexplained gender pay gap in both countries for all three age groups being considered. Implying that for all the three age groups, and in both countries, women are more likely to be employed in low paying workplaces than are men. The impact of this workplace effect is particularly notable amongst more mature employees in Canada where it is associated with more than half of the unexplained gender gap.

Within each age band, women face a more equal pay structure within their workplace than they do across workplaces (comparing the female coefficients reported in columns 1 and 2, and 3 and 4); this is particularly true of more mature women relative to more mature men in

Canada. Indeed, the within workplace unexplained gender pay gap for mature women is substantially higher in Britain than in Canada (15.1 log points compared to 9 log points). Given the size of the standard errors, there is little significant remaining difference within the workplace in the estimated female pay penalty for the various age groups after accounting for the impact of the workplace in Canada (reading down column 4). The British results show a rising negative coefficient with age, although these differences are only weakly significant for workers aged over 40 (column 2).

To summarise; the OLS decomposition results (without the workplace effects) show that for private sector employees in both Britain and Canada (and within the age groups), the portion of the gender wage gap attributable to differences in the returns that men and women receive for the same characteristic (the unexplained component) far outweigh the portion of the gender wage gap attributable to differences in the characteristics men and women bring to the labour market (the explained component). The unexplained component of the gender wage gap declines substantially with the introduction of workplace fixed effects implying that women are more commonly employed in low paying workplaces than are men. This is true in both Britain and Canada and this effect is stronger amongst older workers. Nevertheless, a substantial portion of the gender wage gap in both countries (and within all three age groups) remains unexplained by either individual characteristics or workplace effects.

Gender specific earnings functions.

Estimating a pooled earnings function assumes the returns to individual characteristics are equal for men and women and that the relationship between the workplace and earnings is the same for both the men and the women who work there. Estimating separate earnings functions for men and women allows for examination of gender specific within workplace inequality and the relative contribution of the workplace to the gender pay gap in more detail.

Gender specific workplace fixed effects are allowed for by re-estimating equation (2) using a fixed effects (FE) model for males (m) and for females (f):

$$W_{ij}^m = \alpha^m + X_{ij}^m \beta^m + \delta_j^m + \varepsilon_{ij}^m \quad (3)$$

$$W_{ij}^f = \alpha^f + X_{ij}^f \beta^f + \delta_j^f + \varepsilon_{ij}^f \quad (4)$$

In particular, estimating separate earnings functions for men and women allows for the estimated returns to characteristics ($\hat{\beta}$) and the workplace specific premium ($\hat{\delta}$) to differ across the genders. Selected results are provided in Table 4 (full results are provided in Tables A6 and A7 of the Appendix).

The results in Table 4 confirm the major findings of the pooled analysis, for example, earnings are positively related to age, to higher education levels, and to more skilled occupations in both countries. Similarly, introducing workplace fixed effects into the analysis is again associated with lower rates of return to education (especially for higher levels of education) implying more productive workers are concentrated in higher paying workplaces; and the part-time coefficients again change from negative to positive in Britain (implying these part-time employees are concentrated into low pay workplaces within which they receive relatively higher pay). This is true also for women in Canada. The pay penalty associated with part-time employment decreases for men within workplaces in Canada but does not actually become a pay premium.

Estimating gender specific earning functions also provides new information. Comparing columns (1) and (5) and columns (3) and (7) of Table 4 reveals substantial differences between the rates of return paid to men and women in both countries. It is almost uniformly the case that men receive higher payments associated with any particular characteristic than do women. It is also the case that the extent of these differences is generally smaller across genders in Canada than in Britain. This is especially true within workplaces (comparing column (4) for Britain with column (8) for Canada).

Table 4. Selected regression results; gender specific earnings functions.

log hourly pay	Men				Women			
	OLS		With workplace effects		OLS		With workplace effects	
	Coef. (1)	S. Err (2)	Coef. (3)	S. Err (4)	Coef. (5)	S. Err (6)	Coef. (7)	S. Err (8)
Britain								
education (primary omitted category)								
intermediate secondary (lower)	0.093	0.020	0.075	0.016	0.053	0.022	0.052	0.019
intermediate secondary (upper)	0.138	0.018	0.088	0.015	0.110	0.018	0.075	0.016
higher secondary (lower)	0.143	0.030	0.139	0.023	0.130	0.031	0.069	0.026
higher secondary (upper)	0.253	0.028	0.207	0.022	0.210	0.032	0.149	0.027
degree	0.316	0.023	0.202	0.018	0.295	0.025	0.196	0.025
postgraduate	0.413	0.030	0.266	0.025	0.362	0.036	0.212	0.031
age	0.048	0.004	0.037	0.004	0.045	0.004	0.029	0.004
youngest dep. child 5-11	0.035	0.017	0.028	0.014	-0.074	0.025	-0.023	0.022
youngest dep. child 12-18	0.022	0.019	0.016	0.014	-0.102	0.019	-0.037	0.018
married	0.070	0.014	0.061	0.011	0.021	0.013	0.026	0.011
part-time	-0.039	0.042	0.154	0.033	-0.048	0.018	0.037	0.018
No. observations	7464		7464		6790		6790	
Canada								
education (primary omitted category)								
high school	0.063	0.019	0.020	0.007	0.134	0.017	0.052	0.008
trade	0.163	0.019	0.074	0.008	0.197	0.024	0.106	0.010
some post secondary	0.185	0.022	0.069	0.008	0.205	0.019	0.081	0.008
college	0.227	0.019	0.090	0.008	0.259	0.018	0.119	0.008
university degree	0.375	0.022	0.178	0.008	0.395	0.020	0.224	0.009
post graduate	0.464	0.025	0.256	0.010	0.522	0.025	0.333	0.011
unknown	0.049	0.038	0.032	0.014	0.164	0.040	0.098	0.013
age	0.037	0.004	0.026	0.001	0.031	0.003	0.017	0.001
youngest dep. child 5-11	0.051	0.015	0.023	0.006	0.007	0.015	0.022	0.006
youngest dep. child 12-18	0.052	0.014	0.020	0.006	-0.018	0.013	0.016	0.006
married	0.105	0.013	0.049	0.005	0.035	0.011	0.035	0.004
part-time	-0.187	0.024	-0.027	0.008	-0.040	0.015	0.014	0.005
No. observations	33,358		33,358		28,554		28,554	

Sources: British Workplace Employee Relations Survey 2004 and the Canadian Workplace and Employee Survey aggregated analytical file (1999, 2001, 2003, 2005). Dependent variable is log hourly wages. Independent variables (and full results) are listed in Tables A6 and A7 of the Appendix, they include age, age squared, training, education controls, marital status, age of youngest dependent child, visible minority status, disability, permanent contract, trade union membership, tenure, tenure squared, part-time and occupation controls. Note: variable definitions are not identical across the countries; see Table A1 in the Appendix for fuller definitions.

In Britain, the differences in the rates of return within workplaces are particularly striking for parents with school age children (where women receive a payment penalty), for married men compared to married women, and for part-time employees (within workplaces male part-time employees receive four times the return that female part-time employees receive). In Canada, within workplaces, the returns to education are higher for women than men. The relatively large returns associated with being a father (of school age children) or a husband found in the OLS results (column 1 of Table 4) decrease substantially within workplaces where there are not significant gender differences in these rates of return.

Decomposing the gender pay gap in Britain and Canada.

The traditional Oaxaca-Blinder approach decomposes the mean gender wage gap into two components: the explained portion attributable to differences in the observable characteristics men and women bring to the labour market (such as education or training) and the portion that cannot be explained by such differences (Oaxaca 1973; Blinder 1973). Meng and Meurs (2004) extend the decomposition to apportion the earnings gap into three components: differences in characteristics or the ‘explained’ effect, $(\bar{X}_m - \bar{X}_f)\hat{\beta}_m$; differences in the returns to these characteristics or the ‘unexplained’ effect, $(\hat{\beta}_m - \hat{\beta}_f)\bar{X}_f$; and the workplace effect, $\bar{\delta}_m - \bar{\delta}_f$. It is this apportioning of the third component, the workplace effects, of the earnings gap that is of particular interest here.¹² The workplace effects are a combination of characteristics of the workplace common to each gender group and of the gender specific rates of return to those workplace common characteristics. The term $\bar{\delta}_m - \bar{\delta}_f$ can be interpreted as a combined workplace effect associated with men and women receiving differing wage premiums at the workplace level.

Decomposition results for the fixed effects estimation of the gender-specific earnings functions are presented in Table 5. On average, the total raw gender wage gap is 24.7 and 21.2 log points for Britain and Canada, respectively.¹³ Beginning with the gender-specific workplace component of the decomposition, the impact of the workplace is associated with a narrowing of the gender wage gap by 34.1% in Britain and 14.6% in Canada. After allowing for those individual characteristics expected to be associated with pay, women receive a common payment at the workplace level which is higher than that paid to men. Similar results for analysis using gender specific earnings functions and comparable data sets have been found for France and Australia where the gaps narrowed by 15.9% and 48.8%, respectively (Meng and Meurs, 2004; page 197). The across workplace finding that the workplace is associated with a narrowing of the gender wage gap is consistent with the more effective enactment of equal pay legislation across workplaces (Carrington and Troske, 1998; page 460) in Britain than in Canada.

It should be noted that across workplace effects in the pooled analysis above are associated with an increased average gender wage gap. This can be interpreted as women being more likely to be employed in low paying workplaces than men. In contrast, after estimating gender specific earnings functions, the across workplace effects are associated with a decreased average gender wage gap. By modelling wages for men and women separately at all workplaces (including the low paying workplaces), the differences in the gender specific within workplace returns (the coefficients on the individual characteristics) may be capturing the impact on pay of this concentration. This leaves an average across workplace gender wage differential which is greater for women than men.

There is considerable unexplained gender wage inequality within workplaces for both countries. Britain has a larger portion of the total wage gap attributable to differences in returns (unexplained) within workplaces than does Canada (130.7% compared to 80.6%),

Table 5. Decomposition results, separating out the workplace effect.

	Britain	Canada
	Gap in log wage points (1)	Gap in log wage points (3)
Total raw (unadjusted) wage gap	0.247	0.212
Workplace effects	-0.084	-0.031
% workplace effect	-34.1%	-14.6%
differences in characteristics (explained)	0.008	0.073
% explained	3.4%	34.4%
differences in returns (unexplained)	0.323	0.171
% unexplained	130.7%	80.6%

Sources: British Workplace Employee Relations Survey 2004 and the Canadian Workplace and Employee Survey 2003.
Note: To provide a reliable estimate of the workplace effect in the WES data, waves of independent worker data (1999, 2001, 2003 and 2005) were combined with workplace data in order to maximize the number of responding workers per workplace. The resulting gender wage gap is slightly lower (21.2 log points versus 23.3 log points in the 2003 data) although not statistically significantly so

placing Canada above France (at 58.2%) but below Australia (at 108.5%) (Meng and Meurs, 2004 page 197), with Britain measuring the highest. In aggregate, men receive returns to their observable characteristics which are substantially higher than the payments women receive within the workplace. This is particularly true in Britain where this component of the gender pay gap is almost twice as large as it is for Canada (32.3 log points relative to 17.1 log points). Finding that within workplace gender wage inequality is substantially lower for private sector employees in Canada than in Britain is consistent with a prima facie argument that comparable worth pay legislation across genders, may be having a greater impact in Canada (Carrington and Troske, 1998; 460).

Finally, differences in observable characteristics (the explained) component account for 3.4% and 34.2% of the total gender wage gap in Britain and Canada respectively. This explained component for Britain is low, however it is consistent with that found for the earlier (1998) wave of the WERS data (Mumford and Smith, 2007).

6. Concluding remarks

Using linked employee-employer data, this paper considers the role of workplaces in a study of gender pay differentials for private sector employees in Britain and Canada. The raw earnings differential between men and women in the private sector economy is found to be similar, substantial and significant in both countries (at 24.7 log points in Britain and 23.3 log points in Canada).

High levels of unexplained gender wage inequality are found in both countries, which are related to women receiving relatively lower wages within workplaces than do men. Whilst this inequality is partially offset by women, on average, receiving a workplace specific return which is relatively higher than that paid to men, a substantial and significant unexplained within workplace wage gap remains which is considerably higher in Britain than in Canada.

The results are consistent with a *prima facie* argument that country-specific factors, such as the wage setting environment, are important determinants in explaining the relative size of the gender wage gap. The finding that within workplace gender pay inequality is substantially lower for private sector employees in Canada than in Britain may be because Pay Equity legislation, with its criteria of within workplace comparable worth across genders, is having a greater impact on gender wage differentials in Canada than Britain. Analogously, the across workplace finding that the workplace is associated with a narrowing of the gender wage gap is consistent with the more effective enactment of equal pay legislation in Britain than in Canada.

Nevertheless, equal pay legislation is far from fully effective in either country, as indicated by both countries exhibiting high levels of unexplained gender wage inequality, suggesting a need to further concentrate enforcement of this legislation on within and across workplace gender pay inequality.

References

- Abowd, J. Haltiwanger, J. and Lane, J. (2004). Integrated longitudinal employee-employer data for the United States. *American Economic Review, Papers and Proceedings* 94(2): 224 – 229.
- Altonji, J.G. and Blank, R. (1999). Race and gender in the labor market in Ashenfelter, O. and Card, D. (eds.) *Handbook of Labor Economics*. Elsevier Science B.V, Amsterdam.
- Baker, M. and Fortin, N.M. (2001). Occupational gender composition and wages in Canada, 1987-1988. *Canadian Journal of Economics* 34(2): 345-376.
- Bayard, K., Hellerstein, J., Neumark, D. and Troske, K. (2003). New evidence of sex segregation and sex differences in wages from matched employee-employer data. *Journal of Labor Economics*. 21: 887-922.
- Becker, G.S. (1962). Investment in human capital: A theoretical analysis. *The Journal of Political Economy* 70(5), 9-49.
- Bergmann, B.R. 1971. Occupational segregation, wages and profits when employers discriminate by race or sex. *Eastern Economic Journal*. 1:103-110.
- Blanchflower, D. (1998). International comparisons, Rapporteur report to an international symposium on linked employer-employee data. *Monthly Labor Review* 121(7): 59-60.
- Blau, F.D. and Kahn, L.M. (2001). Gender differences in pay. *Journal of Economic Perspectives* 14(4): 75-99.
- Blau, F.D. and Kahn, L.M. (2003). Understanding international differences in the gender pay gap. *Journal of Labor Economics* 21: 106-144.
- Blau, F. and Kahn, L. (2007). The gender pay gap. *The Economist Voice* 4(4) Article 5. <http://www/bepress.com/ev/vol14/iss4/art5>.
- Blinder, A. (1973). Wage discrimination: Reduced form and structural estimates. *Journal of Human Resources* 8; 436-55.
- Bronars, S.G. and Famulari, M. (1997). Wage, tenure, and wage growth variation within and across establishments. *Journal of Labor Economics* 15(2): 285-317.
- Carrington, W.J. and Troske, K. (1998). Sex segregation in U.S. manufacturing. *Industrial and Labor Relations Review* 51(3):445-64.

- Card, D. Lemieux, T., and Riddell, C. (2003). Unions and the wage structure in John T. Addison and Claus Schnabel (eds.) *The International Handbook of Trade Unions*, Cheltenham: Edward Elgar, pp. 246-92.
- Chaplin, J. Mangla, J. Purdon, S. and Airey, C. (2005). *The Workplace Employment Relations Survey (WERS) 2004 technical report. (Cross-section and panel surveys)*. Department of Trade and Industry (November) P2336/P2400.
- Connolly, S. and Gregory, M. (2008.) Moving down? Women's part-time work and occupational change in Britain 1991-2001. *The Economic Journal* 118, F52-76.
- Daly, A. Kawaguchi, A. Meng, X. and Mumford, K. (2006). The gender wage gap in four countries: A rehearsal of the Gregory contribution. *Economic Record* 82(257): 165-176.
- Davidson, R. and MacKinnon, J. (1993). *Estimation and inference in econometrics*. New York: Oxford University Press.
- Davies, R. and Welpton, D. (2008). How does workplace monitoring affect the gender wage differential? Analysis of the Annual Survey of Hours and Earning and the 2004 Workplace Employment Relations Survey. A research note. *British Journal of Industrial Relations* 46(4): 732-749.
- Dickens, L. (2007). The road is long: Thirty years of equality legislation in Britain. *British Journal of Industrial Relations* 45(3): 463-494.
- Deaton, A. (1998). *The Analysis of Household Surveys. A Microeconomic Approach to Development Policy*. World Bank. John Hopkins University Press, Baltimore.
- Disney, R. and Gosling, A. (2007). Changing public sector wage differentials in the UK. Mimeo, University of Nottingham.
- Drolet, M. (2002). Can the workplace explain Canadian gender pay differentials? *Canadian Public Policy* 28: S41-S63.
- Department for Communities and Local Government. (2007). *Towards a fairer future, Implementing the Women and Work Commission Recommendations*. Department for Communities and Local Government Publications, UK.
- Groshen, E.L. (1991). The structure of male/female wage differential: Is it who you are, what you do, or where you work? *Journal of Human Resources* 26:457-72.
- Low Pay Commission. (1998), *The National Minimum Wage. First report of the Low Pay Commission*. (London).
- Manning, A. and Petrongolo, B. (2008.) The part-time pay penalty for women in Britain. *Economic Journal* 118, F28-51.

- Meng, X. and Meurs, D. (2004). The gender earnings gap: Effects of institutions and firms – A comparative study of French and Australian private firms, *Oxford Economic Papers* 56: 189-208.
- Mueller, R.E. (1998). Public–private sector wage differentials in Canada: evidence from quantile regressions. *Economics Letters* 60(2); 229-235.
- Mumford, K., and Smith, P.N. (2003). Determinants of current job tenure: A cross country comparison. *The Australian Journal of Labour Economics* 6(4): 597-608.
- Mumford, K., and Smith, P.N. (2007). The gender earnings gap in Britain. *Manchester School* 75(6); 653-672.
- Oaxaca, R.L. (1973). Male Female Wage Differentials in Urban Labor Markets. *International Economic Review* 14(3); 693-709.
- Oaxaca, R. and Ransom, M. (1999). Identification in detailed wage decompositions. *Review of Economics and Statistics* 81(1): 154-157.
- OECD (2005) *Employment Outlook*, OECD, Paris.
- Office for National Statistics (2008). Public sector employment: Nugget. Retrieved from <http://www.statistics.gov.uk/cci/nugget.asp?id=1292>
- Phillips, O. (2004). Using bootstrap weights with Wes Var and SUDAAN. *Statistics Canada. The Research Data Centres Information and Technical Bulletin* 1(2): 6-25.
- Regan, T. and Oaxaca, R. (2009). Work experience as a source of specification error in earnings models: Implications for gender wage decompositions. *Journal of Population Economics*, 22(2): 463-499.
- Statistics Canada. (2004). Public sector statistics. Retrieved from <http://www.statcan.gc.ca/pub/68-213-x/68-213-x2004000-eng.pdf>
- Stewart, M. 1983. On least square estimation when the dependent variable is grouped. *Review of Economic Studies* 50(4): 737-753.
- Women and Work Commission. (2006). *Shaping a Fairer Future*. Available from <http://www.equalities.gov.uk/pdf/Shaping%20a%20Fairer%20Future%20report.pdf>
- Wooldridge, J. (2002). *Econometric analysis of cross section and panel data*. (MIT Press, Cambridge Massachusetts).
- Yun. M. (2005). A simple solution to the identification problem in wage decompositions. *Economic Inquiry* 43(4): 766-772.

Endnotes.

¹ Removed from this anonymous version of the paper.

²A National Minimum Wage was introduced in Britain in April, 1999, however, minimum wages had operated in many industries on a less than fully consistent basis for close to a century prior to this (Low Pay Commission, 1998; Appendix 5).

³ Data from the 2003 employee portion of the WES was used in this analysis. The WES follows workers for 2 years and workplaces for six years. As such, the WES 2003 is an independent sample and is representative of the survey population of workers while the workers used in the WES 2004 represent those workers who were selected in 2003 and remained with the workplace in 2004.

⁴The public sector employs a large proportion of the total workforce in both Canada (19% in 2003; Statistics Canada (2004)) and Britain (20% in 2004; Office for National Statistics (2008)). Gender pay gaps in the public sector could be expected to be lower in both countries (see Mueller, 1998 for Canada; Disney and Gosling, 2007 for Britain). According to the OECD (2005; pages 239-240), the labour force participation rates for men are very similar in the two countries (82.1% for Canada in 2003 and 83.1% for Britain in 2004); and Canadian women are more likely to be participating in the labour force than British women (73.7% and 69.6%, respectively); however, employment rates are very similar for these women (67.9% for Canada and 66.6% for Britain). There are a range of selection issues that it might be desirable to address, such as selection into the private sector or simply into the labour market itself. Finding a suitable instrument to use in a cross-country analysis is a constraint, particularly for the single wave of data available with the WERS. Not being able to control for selection limits the comparative statements we can make about our estimated returns when compared to other groups not included in the analysis. The results are not, however, biased for the specified samples under consideration. Our analysis is therefore restricted to the samples of private sector employees we are investigating.

⁵ Department of Trade and Industry (2005) Workplace Employment Relations Survey: Cross-Section, 2004 [computer file]. 1st ed. Colchester: The Data Archive [distributor], 21 December 2005. SN: 5294. NB: wave 2 data released in 2007 are used throughout for Britain. The authors acknowledge the Department of Trade and Industry, the Economic and Social Research Council, the Advisory, Conciliation and Arbitration Service and the Policy Studies Institute as the originators of the 2004 Workplace Employment Relations Survey data, and the Data Archive at the University of Essex as the distributor of the data. The National Centre for Social Research was commissioned to conduct the survey fieldwork on behalf of the sponsors. None of these organisations bears any responsibility for the author's analysis and interpretations of the data.

⁶The WES contains 500 bootstrap weights for workplaces and employees (Phillips, 2004). In a WES type survey, the bootstrap weights would account for most of the variability incurred at the second-stage. As such, standard errors were computed using the bootstrap weights.

⁷ It should be noted that wages may also differ by fields of study and that many fields of study continue to be dominated by either men or women. One significant caveat is that, whilst there has been notable changes in some discipline areas (such as biology, medicine, management and law), men and women tend to choose traditional disciplines; a factor that is not accounted

for in this study and this choice may also explain part of the gender differences in earnings (Drolet, 2002).

⁸Robustness of the estimation results is of clear concern. The banded nature of the earnings data in the WERS (discussed in Section 3 above) presents an issue for the construction of the earnings series in the analyses presented here. As Stewart (1983) discusses, it is possible, in principle, that this banding may affect the properties of the ordinary least squares estimates of the earnings function that we estimate. Comparison of the estimates presented here with interval estimates confirms they are very similar. We therefore confine our analysis to the more generic estimates presented here.

⁹Chaplin et al., (2005, pages 88 to 102) discuss the need to weight data collected with varying sampling probabilities (such as WES and WERS) in order to avoid biased estimation. Both data sets have been weighted accordingly in this paper (to allow for selection stratification and for workplace clustering).

¹⁰The discussion concerning the limits of not having actual work experience for British employees (see Section 3 above) is very pertinent here. It is possible that wage returns to education and age, even for those females who are currently employed full-time, are affected because the employee has had time out of the labour market (or worked less time as a part-time employee) during some part of their career. The results need to be interpreted with this caveat in mind.

¹¹It should also be noted that these workplace specific effects may partially capture unobserved worker heterogeneity and this heterogeneity may vary systematically across workplaces.

¹²Davidson and MacKinnon (1993) show that the fixed effect estimator can also be obtained by a regression including a dummy variable for each of the workplaces, in which case a set of coefficient (parameter) estimates are generated accordingly. Wooldridge (2002; page 274) points out that this finding is interesting but coincidental. In our example, using a set of workplace dummy variables would be expected to lead to an omitted category problem and limit decomposition analysis (see Oaxaca and Ransom (1999) and Yun (2005)). Implementing a full fixed effects estimator (Wooldridge, 2002; pages 265 to 269) avoids the omitted category problem and enables the decomposition to include all of the estimated workplace fixed effects.

¹³To provide a reliable estimate of the workplace effect in the WES data, waves of independent worker data (1999, 2001, 2003 and 2005) were combined with workplace data in order to maximize the number of responding workers per workplace. Fixed firm effects for men and women were estimated from 61,912 observations in 3,935 workplaces. The average number of responding workers was 15.7 with 7.3 female and 8.4 male respondents. The resulting gender wage gap is slightly lower (21.2 log points versus 23.3 log points in the 2003 data) although not statistically significantly so. As such, the qualitative conclusions remain.

Appendix.

Table A1. Variable definitions

Britain		Canada	
Variable Name	Definition	Variable name	Definition
Average hourly pay	Ratio of (the midpoints of the banded measure, there are 14 bands, of) weekly average gross usual earnings (including overtime) and usual hours worked (including overtime and extra hours) per week.	Average hourly pay	Series of questions allowing respondents to report different bases of pay (i.e. hourly, daily, weekly etc). Workers reporting a unit of wages other than hourly are converted to an hourly rate based on reported earnings and hours.
log average hourly pay	The natural log of average hourly pay	log average hourly pay	The natural log of average hourly pay
Training	Days of training in last 12 months (apart from health and safety) paid for or organised by the employer. The responses are recorded as a banded variable in WERS, there are 6 bands, and the midpoint of each band is taken (setting 0 for the lowest band and 10 for the highest band).	Training	Days of classroom training in last 12 months (includes two most recent courses only). If length of course is reported in hours, conversion of hours to days by /8.
Age	How old the employee is in years. Age is a banded variable in WERS, there are 9 bands, and the midpoint of each band is taken (setting 16 for the lowest band and 65 for the highest band).	Age	How old the employee is in years Age is captured as the difference between the survey reference year and respondent's year of birth.
Education		Education	
Primary	Does not have a recognised academic qualification.	Primary	Below high school Respondent did not graduate from high school and has no other education
Intermediate secondary (lower)	cse25: Has general certificate of secondary education (GCSE) grades D-G; certificate of education (CSE) grades 2-5 Scottish certificate of education (SCE); ordinary (O) level grades D-; Scottish certificate of education (SCE) Standard grades 4-7	High school graduate	High (secondary) school graduate Respondent graduated from high (secondary) school and did not receive any other education
Intermediate secondary (upper)	cse1: Has general certificate of secondary education (GCSE) grades A-C; general certificate of education (GCE) ordinary (O) level passes; certificate of education (CSE) grade 1 Scottish certificate of education (SCE); ordinary (O) level grades A-C; or Scottish certificate of education (SCE) Standard 1-3	Trade or technical school	Highest level of education: trade or vocational diploma or certificate
Higher secondary (lower)	gceae : Has general certificate of education (GCE) advanced (A-level) grades A-E; 1-2 Scottish certificate of education (SCE); Higher grades A-C, As levels	Some post secondary	Highest level of education: Some post-secondary (college or university but did not receive diploma or certificate)
Higher secondary (upper)	gce2ae : Has 2 or more general certificate of education (GCE) advanced (A-level) grades A-E; 3 or more Scottish certificate of education (SCE); or Higher grades A-C	College diploma	Highest level of education: Received college diploma

Britain		Canada	
Variable Name	Definition	Variable name	Definition
Degree	Has a first degree, eg BSc, BA, HND, HNC Ma at first degree level	University degree	Highest level of education: University degree
Post graduate	Has a higher degree, eg MSc, MA, PGCE, PhD	Post graduate degree	Highest level of education: Post graduate degree (eg. M.A., M.Sc., M.Ed., MBA, M.D., dentistry, PhD)
Female	Female	Female	Female
child 0-18	Dependent child aged below 18	Dependent children	Dependent child aged below 18
child 0-4	Youngest dependent child aged 0-4	child 0-4	Youngest dependent child aged 0-4
child 5-11	Youngest dependent child aged 5-11	child 5-11	Youngest dependent child aged 5-11
child 12-18	Youngest dependent child aged 12-18	child 12-18	Youngest dependent child aged 12-18
Married	Married or living with a partner	Married	Married or living with a partner
Disabled	Has a long term (expected to last more than 1 year) illness or disability.	Disabled	Has difficulty hearing, seeing, communicating, walking, climbing stairs, bending, learning or doing any similar activities
Visible minority	Employee considers they are white and black Caribbean; white and black African; white and Asian; any other mixed background; Indian; Pakistani; Bangladeshi; any other Asian background; Caribbean; African; any other black background; Chinese; or any other ethnic group.	Visible minority	Canadians come from many ethnic, cultural and racial backgrounds. From which groups did your parents or grandparents descend? If Arab, Black, Chinese, East Indian, Inuit, Japanese, Korean, Latin America, Metis, North American Indian, North African, South east Asia, West Asian, or Other
permanent contract	Employed on a permanent contract.	permanent contract	Regular employee with no contractual or anticipated
part time	Working part time, if usual working hours is less than 30 per week	part time	Working part time if usual work hours are less than or equal to 30 per week
Trade union	Worker is a member of trade union or staff association	Union	Worker is unionized or covered by a CBA
Tenure	Years working at this workplace. Tenure is a banded variable in WERS, there are 5 bands, and the midpoint of each band is taken (setting 0.5 for the lowest band and 10 for the highest band).	Tenure	Years working at this workplace. WES captures start date with employer. Tenure is measured as difference between survey year and start date. Convert monthly tenure by /12.
Occupation		Occupation	
managerial	Managerial	Managers	
Professional	Professional	Professionals	
Technical	Technical	Technical / trade	
Clerical	Clerical	Clerical and administrative	
sales	Sales and customer services	Marketing and Sales	
craft	Craft service		
personal	Personal service	Production	
operative	Operative and assembly workers		
unskilled	Unskilled		

Sources: British Workplace Employee Relations Survey 2004 and the Canadian Workplace and Employee Survey 2003.

Table A2. Mean characteristics of the British Workforce, WERS 2004.

	Total			Women			Men		
	all	women	men	<40	40-49	>50	<40	40-49	>50
log hourly wage	2.088	1.952	2.199	1.949	2.005	1.907	2.117	2.342	2.227
age	39.684	38.773	40.418	28.664	45.000	56.139	29.783	45.000	56.776
training	2.311	2.184	2.417	2.408	2.150	1.693	2.758	2.278	1.884
primary education	0.247	0.226	0.264	0.086	0.245	0.532	0.120	0.256	0.549
intermediate secondary (lower)	0.105	0.102	0.107	0.118	0.118	0.050	0.140	0.121	0.031
intermediate secondary (upper)	0.257	0.301	0.220	0.332	0.313	0.217	0.259	0.238	0.128
higher secondary (lower)	0.052	0.060	0.046	0.067	0.056	0.046	0.054	0.043	0.035
higher secondary (upper)	0.092	0.099	0.085	0.131	0.085	0.037	0.106	0.075	0.056
degree	0.180	0.155	0.201	0.211	0.114	0.065	0.242	0.199	0.123
postgraduate	0.052	0.040	0.062	0.042	0.051	0.026	0.069	0.058	0.052
youngest dep. child 0-4	0.124	0.096	0.148	0.163	0.031	0.003	0.235	0.117	0.009
youngest dep. child 5-11	0.128	0.120	0.134	0.141	0.187	0.004	0.115	0.284	0.036
youngest dep. child 12-18	0.109	0.114	0.104	0.039	0.318	0.088	0.028	0.249	0.121
married	0.651	0.634	0.665	0.543	0.734	0.748	0.532	0.766	0.829
disabled	0.112	0.098	0.123	0.070	0.104	0.156	0.066	0.139	0.218
visible minority	0.064	0.059	0.068	0.068	0.059	0.036	0.098	0.042	0.032
permanent	0.928	0.925	0.930	0.901	0.956	0.950	0.911	0.962	0.937
union member	0.207	0.177	0.231	0.133	0.236	0.221	0.165	0.295	0.300
tenure	4.827	4.515	5.084	3.363	5.309	6.409	3.924	5.981	6.505
female	0.450	1.000	0.000	1.000	1.000	1.000	0.000	0.000	0.000
part time	0.223	0.386	0.089	0.345	0.394	0.471	0.100	0.046	0.106
managerial	0.139	0.101	0.169	0.098	0.128	0.083	0.137	0.223	0.184
professional	0.081	0.050	0.106	0.058	0.044	0.038	0.110	0.105	0.100
technical	0.125	0.137	0.116	0.154	0.143	0.094	0.131	0.119	0.084
clerk	0.165	0.271	0.077	0.251	0.262	0.328	0.084	0.062	0.079
craft	0.090	0.016	0.150	0.014	0.022	0.016	0.145	0.163	0.149
personal	0.048	0.086	0.018	0.087	0.081	0.087	0.019	0.016	0.017
sales	0.118	0.187	0.061	0.208	0.159	0.164	0.092	0.028	0.033
operative	0.108	0.039	0.165	0.030	0.052	0.046	0.135	0.188	0.201
unskilled	0.126	0.113	0.137	0.101	0.109	0.144	0.147	0.097	0.155
Sample size	14272	6790	7464	3613	1624	1553	3615	1887	1962

Source: British Workplace Employee Relations Survey 2004.

Table A3: Mean characteristics of the Canadian private sector workforce, WES 2003

Variable	Women					Men		
	Men	Women	< 40	40-49	50+	< 40	40-49	50+
log hourly wage	3.030	2.797	2.696	2.871	2.901	2.887	3.146	3.173
age	40.419	39.972	29.632	44.434	55.235	30.286	44.505	55.542
age_squared	1.767	1.727	0.916	1.982	3.069	0.955	1.989	3.107
Training time	2.150	2.296	2.710	1.803	2.170	2.400	2.347	1.420
Below high school (primary)	0.119	0.079	0.071	0.064	0.120	0.109	0.101	0.162
High School graduate	0.181	0.162	0.125	0.190	0.196	0.200	0.179	0.148
Trade school	0.141	0.068	0.044	0.086	0.092	0.102	0.169	0.183
Some post secondary	0.134	0.169	0.196	0.142	0.152	0.150	0.120	0.119
College	0.178	0.263	0.282	0.285	0.188	0.197	0.185	0.131
University	0.165	0.175	0.201	0.151	0.155	0.180	0.159	0.143
Post-graduate	0.061	0.061	0.065	0.057	0.059	0.051	0.063	0.081
unknown education	0.020	0.023	0.016	0.025	0.037	0.011	0.024	0.033
Has dependent children	0.440	0.396	0.406	0.575	0.098	0.420	0.656	0.219
Youngest dep. child 0-4	0.164	0.093	0.184	0.026	...	0.267	0.120	...
Youngest dep. child 5-11	0.148	0.151	0.173	0.210	...	0.128	0.269	...
Youngest dep. child 12-18	0.127	0.152	0.049	0.339	...	0.026	0.267	0.160
Married	0.720	0.645	0.561	0.733	0.689	0.583	0.835	0.852
Disability	0.105	0.080	0.046	0.092	0.133	0.085	0.105	0.144
Ethnic	0.089	0.090	0.094	0.091	0.079	0.101	0.075	0.082
Permanent	0.962	0.976	0.974	0.976	0.980	0.962	0.982	0.940
Part-time	0.069	0.216	0.246	0.181	0.207	0.092	0.035	0.065
Tenure-years	6.766	6.468	5.108	7.329	8.053	5.491	7.714	8.147
Unionized	0.275	0.279	0.193	0.331	0.385	0.213	0.327	0.333
Managers	0.165	0.087	0.070	0.106	0.092	0.125	0.166	0.242
Professionals	0.130	0.203	0.186	0.197	0.247	0.132	0.131	0.126
Technical Trade	0.522	0.313	0.319	0.309	0.309	0.510	0.560	0.502
Clerical Admin	0.072	0.218	0.209	0.240	0.201	0.084	0.065	0.057
Marketing Sales	0.033	0.117	0.150	0.102	0.070	0.049	0.018	0.019
Production	0.077	0.062	0.065	0.045	0.080	0.100	0.060	0.054
Observations	10,595	8,242	3,629	2,820	1,793	4,420	3,411	2,764

Notation: ... number too small to report .

Source: Canadian Workplace and Employee Survey 2003.

Table A4: Regression results for Canada; pooled analysis.

log average hourly wage	Without workplace specific effects								With workplace specific effects							
	All workers		Young		Prime-aged		Mature		All workers		Young		Prime-aged		Mature	
	Coeff	Std.err.	Coeff	Std.err.	Coeff	Std.err.	Coeff	Std.err.	Coeff	Std.err.	Coeff	Std.err.	Coeff	Std.err.	Coeff	Std.err.
age	0.0349	0.0071	0.0717	0.0256	-0.0993	0.2361	0.0594	0.0573	0.0240	0.0030	0.0339	0.0144	-0.0685	0.1118	0.1003	0.0372
age_squared	-0.3530	0.0830	-0.8924	0.4332	1.2189	2.6557	-0.5538	0.4819	-0.2367	0.0355	-0.3482	0.2402	0.7936	1.2535	-0.8699	0.3179
training	0.0007	0.0009	0.0004	0.0014	0.0015	0.0012	0.0000	0.0010	0.0000	0.0003	-0.0001	0.0006	-0.0005	0.0008	-0.0003	0.0009
education (primary omitted category)																
high school	0.1050	0.0431	0.1026	0.0577	0.1024	0.0781	0.1000	0.0804	0.0309	0.0188	0.0789	0.0335	0.0219	0.0418	0.0111	0.0494
trade	0.1754	0.0480	0.1800	0.0653	0.2060	0.0813	0.1151	0.0791	0.0646	0.0210	0.0870	0.0417	0.1197	0.0434	0.0315	0.0490
some_pse	0.1963	0.0500	0.1677	0.0637	0.2276	0.0808	0.1779	0.0954	0.0508	0.0199	0.0473	0.0357	0.0665	0.0432	0.0392	0.0528
college	0.2636	0.0477	0.2224	0.0603	0.2978	0.0820	0.2405	0.0952	0.0856	0.0193	0.0763	0.0350	0.1285	0.0413	0.0652	0.0508
university	0.3738	0.0530	0.3176	0.0679	0.4497	0.0969	0.3095	0.0949	0.1620	0.0212	0.1366	0.0373	0.2185	0.0459	0.1210	0.0542
post graduate	0.5011	0.0764	0.4830	0.0975	0.5118	0.1479	0.4141	0.1460	0.2889	0.0261	0.2816	0.0461	0.3083	0.0548	0.2083	0.0627
unknown	0.1077	0.0842	0.1355	0.1309	0.1577	0.1647	0.0074	0.1203	0.0327	0.0339	0.0784	0.0711	0.0277	0.0685	0.0359	0.0748
youngest dep. child 0-4	0.0412	0.0362	-0.0121	0.0440	0.1153	0.0899	0.1359	0.1554	0.0230	0.0150	0.0060	0.0219	0.0607	0.0382	0.0799	0.1263
youngest dep. child 5-11	0.0211	0.0324	-0.0253	0.0538	0.0660	0.0489	-0.0296	0.1040	0.0014	0.0137	-0.0276	0.0262	0.0419	0.0244	0.0525	0.0761
youngest dep. child 12-18	0.0160	0.0351	-0.0868	0.0709	0.0474	0.0477	0.0864	0.0686	0.0067	0.0140	-0.0953	0.0452	0.0486	0.0221	0.0089	0.0355
married	0.0710	0.0279	0.0813	0.0390	0.0398	0.0537	0.0705	0.0513	0.0477	0.0109	0.0701	0.0185	-0.0110	0.0226	0.0134	0.0300
disability	-0.0415	0.0431	0.0055	0.0679	-0.0881	0.0766	-0.0573	0.0514	-0.0043	0.0154	-0.0082	0.0331	-0.0452	0.0313	-0.0426	0.0325
ethnic	-0.1140	0.0497	-0.0913	0.0638	-0.1135	0.0753	-0.1641	0.1052	-0.1072	0.0183	-0.0813	0.0288	-0.1611	0.0416	-0.1141	0.0487
permanent	0.0405	0.0897	0.0285	0.1248	0.0751	0.1255	0.0709	0.1040	0.0514	0.0270	0.1106	0.0454	0.1093	0.0671	-0.0455	0.0672
part-time	-0.1009	0.0400	-0.0800	0.0503	-0.1216	0.0697	-0.0583	0.0651	-0.0409	0.0150	-0.0205	0.0260	-0.0574	0.0309	-0.0132	0.0432
trade union	0.0720	0.0276	0.0711	0.0368	0.0630	0.0415	0.0965	0.0442	-0.0647	0.0160	-0.0242	0.0299	-0.0987	0.0285	-0.0587	0.0367
tenure	0.0152	0.0301	0.0355	0.0343	0.0042	0.0576	-0.0795	0.0616	0.0024	0.0104	0.0370	0.0160	0.0068	0.0251	-0.1127	0.0364
tenure_squared	0.8857	2.2673	-0.7525	2.6931	1.7591	4.3069	7.7615	4.4131	1.0845	0.7962	-1.5224	1.2876	0.4934	1.8680	9.2583	2.6880

A4: Regression results for Canada; pooled analysis. continued.

	Without workplace specific effects								With workplace specific effects							
	All workers		Young		Prime-aged		Mature		All workers		Young		Prime-aged		Mature	
	Coeff	Std.err.	Coeff	Std.err.	Coeff	Std.err.	Coeff	Std.err.	Coeff	Std.err.	Coeff	Std.err.	Coeff	Std.err.	Coeff	Std.err.
female occupations (clerk omitted category)	-0.1826	0.0247	-0.1385	0.0336	-0.2062	0.0413	-0.2039	0.0547	-0.1099	0.0105	-0.0877	0.0175	-0.1357	0.0221	-0.0895	0.0302
managers	0.4229	0.0510	0.4301	0.0727	0.3892	0.0830	0.4432	0.0976	0.4692	0.0189	0.4326	0.0348	0.4366	0.0369	0.4493	0.0524
professionals	0.3471	0.0439	0.3667	0.0575	0.2971	0.0780	0.3563	0.0773	0.3373	0.0176	0.2888	0.0305	0.3117	0.0335	0.3847	0.0497
technical_trade	0.0813	0.0296	0.1108	0.0464	0.0531	0.0526	0.0653	0.0626	0.1414	0.0148	0.1374	0.0261	0.0893	0.0298	0.1589	0.0431
market_sales	-0.1759	0.0532	-0.1259	0.0693	-0.2314	0.0954	-0.2079	0.1429	0.0623	0.0246	0.1139	0.0382	0.0343	0.0548	0.0422	0.0856
production	-0.0769	0.0578	-0.0092	0.0751	-0.1209	0.0919	-0.1491	0.0847	0.0058	0.0240	-0.0210	0.0409	-0.0077	0.0509	0.0243	0.0679
constant	1.6328	0.1574	0.9946	0.3817	4.4720	5.1934	1.1792	1.6923	2.0359	0.0669	1.6423	0.2092	4.1431	2.4856	0.2474	1.0933
R-square	0.5233		0.5563		0.4709		0.4666		0.8000		0.8670		0.8800		0.8904	
No. workers	18837		8049		6231		4557		18573		7919		6150		4504	

Source: Canadian Workplace and Employee Survey 2003.

Table A5. Regression results for Britain; pooled analysis.

	Without Workplace Specific Effects								With Workplace Specific Effects							
	All workers		Young workers		Prime aged		Mature workers		All workers		Young workers		Prime aged		Mature workers	
	Coef.	Std Err	Coef.	Std Err	Coef.	Std Err	Coef.	Std Err	Coef.	Std Err	Coef.	Std Err	Coef.	Std Err	Coef.	Std Err
log average hourly wage																
age	0.042	0.003	0.068	0.013	.....	.....	0.425	0.304	0.031	0.003	0.053	0.012	.....	.....	0.211	0.226
age squared	-0.448	0.037	-0.823	0.222	.....	.....	-3.654	2.596	-0.317	0.031	-0.662	0.200	.....	.....	-1.838	1.920
training	0.006	0.002	0.006	0.002	0.009	0.003	0.008	0.003	0.004	0.001	0.003	0.002	0.007	0.003	0.005	0.003
education (primary omitted category)																
intermediate secondary (lower)	0.075	0.015	0.038	0.021	0.080	0.025	0.094	0.039	0.067	0.013	0.044	0.019	0.029	0.028	0.040	0.032
intermediate secondary (upper)	0.127	0.013	0.090	0.021	0.150	0.023	0.124	0.023	0.084	0.011	0.057	0.019	0.068	0.021	0.119	0.020
higher secondary (lower)	0.142	0.022	0.133	0.029	0.136	0.038	0.063	0.051	0.101	0.018	0.094	0.025	0.022	0.038	0.133	0.050
higher secondary (upper)	0.240	0.021	0.187	0.028	0.275	0.041	0.238	0.048	0.185	0.016	0.144	0.025	0.202	0.034	0.221	0.035
degree	0.312	0.018	0.249	0.023	0.363	0.031	0.322	0.037	0.205	0.014	0.150	0.021	0.217	0.027	0.262	0.032
postgraduate	0.397	0.024	0.341	0.033	0.474	0.042	0.347	0.050	0.252	0.019	0.189	0.028	0.340	0.037	0.329	0.039
youngest dep. child 0-4	0.037	0.013	-0.013	0.016	0.041	0.027	0.127	0.078	0.016	0.011	-0.008	0.014	-0.010	0.028	-0.005	0.074
youngest dep. child 5-11	0.001	0.015	-0.073	0.020	0.025	0.022	0.004	0.069	0.013	0.012	-0.029	0.018	0.013	0.020	0.000	0.044
youngest dep. child 12-18	-0.030	0.013	-0.127	0.031	-0.003	0.019	0.015	0.027	-0.010	0.012	-0.043	0.030	-0.001	0.019	0.004	0.023
married	0.053	0.010	0.068	0.014	0.037	0.018	0.033	0.023	0.046	0.008	0.050	0.011	0.041	0.017	0.012	0.019
disabled	-0.019	0.014	-0.028	0.025	0.003	0.026	-0.033	0.019	-0.003	0.012	-0.002	0.024	0.029	0.024	0.002	0.018
visible minority	-0.055	0.021	-0.065	0.026	-0.013	0.035	-0.063	0.032	-0.075	0.017	-0.073	0.023	-0.081	0.044	-0.092	0.043
permanent	0.038	0.022	0.061	0.026	-0.018	0.050	0.009	0.044	0.030	0.020	0.040	0.025	0.009	0.042	0.094	0.041
part-time	-0.068	0.018	-0.022	0.023	-0.083	0.029	-0.088	0.035	0.057	0.016	0.101	0.024	0.057	0.029	0.059	0.027
union member	0.075	0.013	0.054	0.017	0.072	0.017	0.108	0.021	0.014	0.011	0.007	0.014	-0.006	0.021	0.032	0.022
tenure	0.015	0.005	0.035	0.007	-0.006	0.011	-0.006	0.012	0.006	0.004	0.019	0.006	-0.003	0.010	-0.005	0.011
tenure squared	0.0004	0.001	-0.002	0.001	0.001	0.001	0.001	0.001	0.001	0.000	-0.001	0.001	0.001	0.001	0.001	0.001

Table A5. Regression results for Britain; pooled analysis, continued.

	Without Workplace Specific Effects								With Workplace Specific Effects							
	All workers		Young workers		Prime aged		Mature workers		All workers		Young workers		Prime aged		Mature workers	
	Coef.	Std Err	Coef.	Std Err	Coef.	Std Err	Coef.	Std Err	Coef.	Std Err	Coef.	Std Err	Coef.	Std Err	Coef.	Std Err
female	-0.155	0.012	-0.094	0.014	-0.217	0.022	-0.218	0.026	-0.106	0.010	-0.077	0.012	-0.128	0.020	-0.151	0.024
occupations (clerk omitted category)																
managerial	0.255	0.020	0.231	0.027	0.265	0.030	0.247	0.035	0.326	0.015	0.312	0.022	0.323	0.029	0.348	0.031
professional	0.278	0.023	0.289	0.029	0.238	0.037	0.255	0.045	0.262	0.020	0.246	0.024	0.228	0.034	0.255	0.042
technical	0.143	0.017	0.133	0.021	0.174	0.032	0.123	0.035	0.148	0.014	0.121	0.019	0.192	0.032	0.175	0.030
craft	-0.076	0.021	-0.073	0.027	-0.065	0.035	-0.109	0.040	0.039	0.019	0.043	0.026	0.009	0.035	0.034	0.042
personal	-0.277	0.024	-0.274	0.029	-0.274	0.039	-0.296	0.037	-0.094	0.024	-0.089	0.037	-0.130	0.052	-0.085	0.052
sales	-0.269	0.021	-0.231	0.026	-0.279	0.036	-0.343	0.035	-0.071	0.019	-0.071	0.024	-0.063	0.042	-0.053	0.041
operative	-0.210	0.021	-0.133	0.027	-0.244	0.032	-0.307	0.033	-0.100	0.016	-0.046	0.023	-0.154	0.033	-0.140	0.034
unskilled	-0.364	0.020	-0.332	0.026	-0.345	0.037	-0.429	0.033	-0.176	0.017	-0.124	0.024	-0.198	0.041	-0.234	0.034
constant	1.022	0.059	0.576	0.179	2.076	0.058	-10.217	8.878	1.189	0.053	0.859	0.165	2.006	0.054	-4.173	6.624
R-squared	0.478		0.473		0.496		0.479		0.670		0.703		0.770		0.767	
No. workers	14272		7234		3515		3523		14272		7234		3515		3523	

Source: British Workplace Employee Relations Survey 2004.

Table A6: Regression results for Canada: gender specific earnings functions.

	MEN				WOMEN			
	OLS		with workplace effects		OLS		with workplace effects	
	(1)	(2)	(3)	(4)	(6)	(7)	(8)	(9)
	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.
log average hourly wage								
age	0.037	0.004	0.026	0.001	0.031	0.003	0.017	0.001
age_squared	-0.351	0.051	-0.238	0.014	-0.298	0.034	-0.150	0.015
training	0.001	0.000	0.000	0.000	0.001	0.000	0.000	0.000
education (primary omitted category)								
high school	0.063	0.019	0.020	0.007	0.134	0.017	0.052	0.008
trade	0.163	0.019	0.074	0.008	0.197	0.024	0.106	0.010
some_pse	0.185	0.022	0.069	0.008	0.205	0.019	0.081	0.008
college	0.227	0.019	0.090	0.008	0.259	0.018	0.119	0.008
university	0.375	0.022	0.178	0.008	0.395	0.020	0.224	0.009
post graduate	0.464	0.025	0.256	0.010	0.522	0.025	0.333	0.011
unknown	0.049	0.038	0.032	0.014	0.164	0.040	0.098	0.013
youngest dep. child0-4	0.044	0.018	0.025	0.006	0.024	0.017	0.038	0.006
youngest dep. child5-11	0.051	0.015	0.023	0.006	0.007	0.015	0.022	0.006
youngest dep. child12-18	0.052	0.014	0.020	0.006	-0.018	0.013	0.016	0.006
married	0.105	0.013	0.049	0.005	0.035	0.011	0.035	0.004
disability	0.007	0.020	-0.011	0.007	-0.019	0.017	-0.006	0.008
ethnic	-0.156	0.022	-0.117	0.007	-0.050	0.020	-0.066	0.007
permanent	0.017	0.029	0.057	0.011	0.056	0.031	0.056	0.011
part-time	-0.187	0.024	-0.027	0.008	-0.040	0.015	0.014	0.005
trade union	0.074	0.017	-0.049	0.006	0.095	0.012	-0.017	0.007
tenure	-0.025	0.008	-0.010	0.003	-0.024	0.008	-0.017	0.003
tenure_squared	3.538	0.640	1.950	0.238	3.346	0.611	2.599	0.235
occupations (clerk omitted category)								
managers	0.521	0.026	0.524	0.009	0.400	0.025	0.424	0.008
professionals	0.417	0.021	0.319	0.009	0.335	0.015	0.323	0.006
technical_trade	0.178	0.016	0.178	0.008	0.036	0.014	0.102	0.006
market_sales	-0.015	0.037	0.115	0.013	-0.236	0.023	-0.021	0.009
production	0.059	0.035	0.046	0.010	-0.130	0.022	-0.031	0.009
constant	1.610	0.081	1.981	0.028	1.681	0.064	2.080	0.028
R-squared	0.458		0.729		0.490		0.716	
No. workers	33,358		33,358		28,554		28,554	

Source: Workplace and Employee Survey, aggregated analytical file (1999-2001-2003-2005). Note: To provide a reliable estimate of the workplace effect in the WES data, waves of independent worker data (1999, 2001, 2003 and 2005) were combined with workplace data in order to maximize the number of responding workers per workplace.

Table A7. Regression results for Britain; gender specific earnings functions.

	Male				Female			
	OLS		with workplace effects		OLS		with workplace effects	
	Coef.	Std Err	Coef.	Std Err	Coef.	Std Err	Coef.	Std Err
log average hourly wage	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
age	0.048	0.004	0.037	0.004	0.045	0.004	0.029	0.004
age squared	-0.492	0.046	-0.376	0.042	-0.525	0.055	-0.329	0.048
training	0.007	0.002	0.002	0.001	0.007	0.002	0.006	0.002
education (primary omitted category)								
intermediate secondary (lower)	0.093	0.020	0.075	0.016	0.053	0.022	0.052	0.019
intermediate secondary (upper)	0.138	0.018	0.088	0.015	0.110	0.018	0.075	0.016
higher secondary (lower)	0.143	0.030	0.139	0.023	0.130	0.031	0.069	0.026
higher secondary (upper)	0.253	0.028	0.207	0.022	0.210	0.032	0.149	0.027
degree	0.316	0.023	0.202	0.018	0.295	0.025	0.196	0.025
postgraduate	0.413	0.030	0.266	0.025	0.362	0.036	0.212	0.031
youngest dep. child 0-4	0.040	0.016	0.029	0.013	0.018	0.022	-0.005	0.020
youngest dep. child 5-11	0.035	0.017	0.028	0.014	-0.074	0.025	-0.023	0.022
youngest dep. child 12-18	0.022	0.019	0.016	0.014	-0.102	0.019	-0.037	0.018
married	0.070	0.014	0.061	0.011	0.021	0.013	0.026	0.011
disabled	-0.032	0.016	-0.015	0.013	-0.008	0.023	0.016	0.023
visible minority	-0.059	0.029	-0.056	0.023	-0.032	0.026	-0.094	0.025
permanent contract	0.032	0.033	0.037	0.032	0.055	0.026	0.026	0.024
part-time	-0.039	0.042	0.154	0.033	-0.048	0.018	0.037	0.018
trade union member	0.072	0.018	-0.025	0.014	0.072	0.017	0.058	0.017
tenure	0.021	0.007	0.006	0.006	0.018	0.008	0.011	0.007
tenure squared	-0.001	0.001	0.000	0.001	-0.001	0.001	0.000	0.001
occupation (clerical omitted category)								
managerial	0.251	0.025	0.287	0.021	0.220	0.031	0.326	0.025
professional	0.237	0.029	0.184	0.025	0.350	0.036	0.346	0.036
technical	0.125	0.029	0.094	0.022	0.150	0.021	0.171	0.020
craft	-0.071	0.025	0.007	0.022	-0.231	0.067	-0.066	0.059
personal	-0.269	0.044	-0.083	0.048	-0.290	0.025	-0.113	0.028
sales	-0.298	0.035	-0.113	0.032	-0.263	0.023	-0.040	0.021
operative	-0.218	0.028	-0.119	0.022	-0.247	0.039	-0.141	0.036
unskilled	-0.364	0.031	-0.223	0.025	-0.376	0.023	-0.176	0.024
constant	0.840	0.085	1.092	0.077	0.894	0.081	1.130	0.073
R-squared	0.493		0.733		0.409		0.657	
No. observations	7464		7464		6790		6790	

Source: British Workplace Employee Relations Survey 2004.