GENDER WAGE DIFFERENTIALS: NEW CROSS-COUNTRY EVIDENCE

T. Callan
S. Adams
S. Dex
S. Gustafsson
J. Schupp
N. Smith

September 1995

Working Paper No. 62

Working Papers are not for publication and should not be quoted without prior permission from the author(s).

Acknowledgements:

Financial support from DGXII of the Commission of the European Union under the Human Capital Mobility Programme is gratefully acknowledged. We are grateful for the valuable contributions made by P. Andersson, A. McCulloch, A. Rasmussen and H. Vermeulen.

Institutional Affiliations:

T. Callan, S. Adams: The Economic and Social Research Institute, Dublin, Ireland

S. Dex: ESRC Research Centre for Micro-Social Change, Essex, UK.

S. Gustafsson: University of Amsterdam, The Netherlands. J. Schupp: DIW, Berlin, Germany.

N. Smith: Aarhus School of Business, Aarhus, Denmark.

Correspondence to:

T. Callan The Economic and Social Research Institute 4 Burlington Road Dublin 4 **IRELAND**

+353 1 667 1525 Tel: +353 1 668 6231 Fax: Email: tcallan@esri.ie

1. Introduction

National perceptions of the wage gap between men and women are to some extent shaped by the available international data on this topic. The most widely quoted cross-country statistics on women's earnings relative to men's rely heavily on earnings in manufacturing industry - the sector for which earnings figures tend to be produced most regularly in many countries. For example, the recent *Human Development Report* (United Nations Development Programme, 1995) and the OECD's *Employment Outlook* (OECD, 1988) both rely heavily on earnings in manufacturing as indicators of male and female earnings across countries.

There are a number of major drawbacks associated with comparisons based on such data. First, as the OECD report makes clear, there can be no presumption that the gender wage gap for "production workers in manufacturing" - the group for which statistics are most commonly available - is representative of the gender wage gap in the economy as a whole. Employment in manufacturing is less than one-third of total employment in most advanced economies, and an even smaller proportion of female employment, which tends to be more concentrated in services. The female-to-male wage ratio in manufacturing bears no necessary relationship to the economy-wide ratio Second, the precise coverage of the statistics used tends to vary across countries, rendering them incomparable even for the manufacturing sector. For example, the statistics regularly produced in the UK refer to manual workers in manufacturing; those in Ireland to production workers in manufacturing. Thirdly, the implications of observed differences in male and female wage differentials in any one country, and of differences in gender wage gaps between countries, depend on the extent to which they are explained by productivity-related characteristics.²

In this paper we provide some statistics designed to overcome these difficulties, and assess their implications. We begin by reviewing existing work in this area (Section 2). Section 3 presents a systematic comparison between the most commonly quoted female-to-male wage ratios (based on hourly earnings in manufacturing) and ratios based on a harmonised analysis of household surveys. The surveys include employees of all types in all sectors - thereby overcoming the problems associated with a lack of comprehensive coverage and differences in definition. Countries covered by the present study include some from the top (Sweden and Australia), middle (Denmark and Germany) and bottom (the UK and Ireland) of the usual international league tables on gender wage gaps.³

We then turn (in Section 4) to the issue of adjustment for productivity related variables. There are many national studies which seek to divide the observed wage gap

¹ OECD (1988) uses additional information to provide comparisons based on a broader coverage, but these comparisons are again somewhat limited.

² A further difficulty is that the elements of self-selection in the processes by which individuals choose to participate in the labour market, and become employed, may result in a male-female gap in potential or "offered" wages which differs from the "observed" wage gap.

³ In the UN Human Development Report, Australia, Sweden, Denmark, Germany, the UK and Ireland rank 3rd, 6th, 14th, 30th, 39th and 41st respectively, out of a total of 55 countries. (United Nations Development Programme, 1995, Table 2.5, p. 36).

between men and women into a portion "explained" by productivity related characteristics, and an "unexplained" or "residual" portion. A wide variety of control variables have been used in such studies, and the interpretation of the results depends very much on the nature of the controls used (for a discussion of these issues see Cain, 1986 and Gunderson, 1989). Cross-country comparisons between these studies are fraught with difficulty, because of methodological differences - including differences in the coverage and definition of the samples, and differences in the control variables used - which are likely to affect the results. Such problems can be minimised by conducting harmonised analyses on standardised cross-national datasets. In this paper, we examine wage ratios adjusted for differences in educational qualifications and labour market experience, using a simple human capital specification of the wage equation. The datasets used were created as part of the work of an international research network on female labour market participation: full details of the national sources and the standardised samples and variables are included in Appendix 1.4

2. Existing Cross-Country Comparisons of Female/Male Wage Ratios

Earlier studies relevant to these issues include Phipps (1990), Blau and Kahn (1992), Asplund et al. (1995) and Treiman and Roos (1983).⁵ Phipps (1990) drew on harmonised datasets for three countries (the US, Australia, and Sweden) in the Luxembourg Income Study to examine gender wage differences. focussed on "distributionally sensitive" measures of wages to examine gender wage gaps for low and high wage workers, but did not directly address the issues dealt with here. Blau and Kahn (1992) are closer to the spirit of the present study in attempting to explain intercountry differences in the gap between the average male and female wages. But the dependent variable in most of their analysis is somewhat limited: it refers to estimated female/male earnings ratios for full-time married workers with one non-spouse other (usually a child) in the household. Our measure of the female-male hourly wage ratio covers a broader population and provides a more appropriate comparison with the female/male wage ratio in manufacturing that is most commonly Asplund et al. (1995) an analysis similar to that undertaken here, but restricted to the Nordic countries (Denmark, Finland, Norway and Sweden), where wage gaps are typically lower than in many other countries.

Treiman and Roos (1983) also investigate gender gaps across countries, but are hampered by certain data limitations. Their data refer to the monthly or annual earnings of full-time workers; but do not take account of differences in hours worked by male and female full-time workers. For two countries (Austria and the Netherlands) data refer to monthly earnings net of tax, while for the other seven countries in their

⁴Data for Australia were drawn from the Luxembourg Income Study (LIS) which also includes similar data for Germany; but hourly wage data for all individuals were not available for other countries in the LIS database.

⁵ Mincer's (1986) study drew on a wide range of country papers to document trends in the female-to-male wage ratio, in order to explain changes in female participation across countries, but coverage and definitions for the wage ratio statistics varied: for some countries figures based on hourly earnings in manufacturing were used; for others figures for private sector employees, with some countries including only full-time workers. These differences make them unsuitable for comparing wage ratios across countries - though still valuable, as shown by Mincer's analysis, in explaining changes in participation.

study the more appropriate gross earnings measure is used. Sample sizes in some countries are also rather small (there are fewer than 100 women in the Dutch and Norwegian samples). Given these difficulties, and the lack of information on actual employment experience in their data, there must be some doubt as to their rejection of the hypothesis that human capital differences explain observed wage gaps.

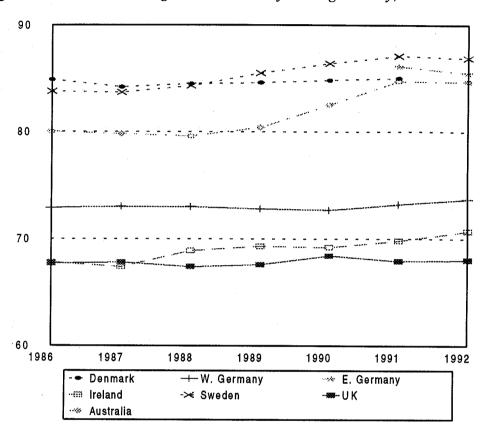


Figure 1: Female/Male Wage Ratios in Manufacturing Industry, 1986-1992.

Figure 1 shows the female/male wage ratio as reported in ILO statistics on manufacturing industry (the source used by OECD, 1988). The main movement over the period is in the Australian ratio, which rises by over 5 percentage points between 1986 and 1992. Movements for other countries are more limited. Ireland and the UK are consistently at the bottom of the league table, West Germany somewhat higher, and by the end of the period, Sweden, Denmark, East Germany and Australia each have a ratio of close to 85 per cent. These statistics, for workers in manufacturing, compiled annually by the International Labour Office from national statistical offices' returns, offer some degree of definitional uniformity because of the limitation to one sector of the economy but still suffer comparability problems. As noted previously, the definition of 'workers' is not standardised - in some cases all workers are included, while in others it is resticted to a particular subset of "manual" or "production workers".

Table 1: Employees in Manufacturing as % of Total Employees						
	Women	Men	All			
Denmark	13.6	23.7	19.1			
West Germany	20.7	36.7	29.9			
East Germany	13.2	25.0	19.2			
Ireland	20.0	29.9	26.1			
Sweden	10.4	28.9	19.3			
United Kingdom	12.4	23.9	18.9			

Source: ILO Yearbook of Statistics 1994, except Denmark (Statistics Yearbook).

The limited coverage of such statistics is amply illustrated by Table 1. Manufacturing employment forms less than 40% of male employment, and less than 21% of female employment, even in West Germany, the economy in which manufacturing bulks largest. In Sweden, only 1 in 10 female employees is in manufacturing. The proportion of the workforce found in manufacturing varies across countries, and across the sexes. The proportions of 'manual' or 'industrial' or 'production' workers within this sector would be smaller still.

Even if statistics for manufacturing always included *all* workers, they cannot be taken as representative of the wage ratio in the overall economy. If the wage ratio in manufacturing industry is represented by $R_I=W_{FI}/W_{MI}$, then the ratio in the overall economy, R_E , can be written as:

$$R_{E} = \underline{\alpha_{F} W_{FI} + (1-\alpha_{F})W_{FN}}$$

$$\alpha_{M} W_{MI} + (1-\alpha_{M})W_{MN}$$
(1)

(where W indicates an average wage, subscripts M and F refer to male and female, and subscripts I and N to manufacturing industry and the non-manufacturing sector respectively; with $\alpha_F(\alpha_M)$ giving the share of all female (male) employment which is in manufacturing). It is clear from this expression that there is no necessary relationship between R_I and R_E . For example, if the average male wage is the same in both sectors, then the overall female-male wage ratio can be higher (lower) than that in manufacturing, if the female/male wage ratio in non-manufacturing is higher (lower) than that in manufacturing; with the extent of the difference depending on the share of female employment which is in manufacturing. If the female/male wage ratio is the same in non-manufacturing as in manufacturing, the overall economy ratio can be higher (lower) than that in manufacturing if the non-manufacturing wage is higher (lower), and women have a higher employment share than men in non-manufacturing. The balance between the relevant factors may vary across countries and over time, which greatly limits the reliance that can be placed on wage ratios for manufacturing as indicators of the economy wide ratio in comparisons across countries and over time.

3. Harmonised Cross-Country Comparisons

Countries participating in the research network were able to provide suitable data for six countries: Denmark for 1990, East and West Germany for 1991 (just after unification, so that the distinction between the two territories was still very relevant), Ireland for 1987, Sweden for 1986 and the United Kingdom for 1991. (See Appendix 1 for details of the sources). These datasets have a number of features which are valuable in the analysis of male-female wage differentials. First, they each identify the gross wage paid to employees, and the hours of work to which that gross wage applies, so that an hourly gross wage can be used as the dependent variable in the analysis. This represents an improvement on the data used in most earlier cross-country studies. Second, they each contain some measure of actual employment experience - at a minimum, the number of years worked can be identified. This represents an improvement on the data available to both Treiman and Roos, and Blau

and Kahn. Third, the surveys are designed to represent the household population in each country, so that they include samples of almost all employees, rather than just those working in manufacturing industry. The Luxembourg Income Study provides data on hourly wages for one country not included in the network, Australia in 1989. While data for a common year would be of still greater interest, the datasets actually analysed are sufficient to illustrate the potential differences between wage ratios based on hourly earnings for manufacturing (for the relevant year) and figures based on: all industries and all occupations. Our analysis also illustrates the importance of the role of some simple human capital variables in explaining inter-country differences in the gender wage gap.

Individuals aged between 18 and 64 years inclusive, in paid employment, with positive weekly hours of work and gross weekly earnings, were selected. Hourly wage rates are calculated on the basis of gross pay divided by hours worked including overtime. Table 2 compares the average hourly earnings economy -wide ratio calculated from the survey datasets with the hourly earnings ratio for manufacturing workers (published in ILO Yearbook of Labour Statistics) for the survey year...

Table 2: Female - Male Wage Ratios: Manufacturing vs All Employments							
	Year	Workers in Manufacturing (ILO)	All workers in al	ll industries(Surveys) ¹			
			Ratio of Means	Ratio of Medians			
Sweden	1986	90.1 <i>(1)</i>	92.2 (1)	89.0 <i>(2)</i>			
East Germany	1991	86.1 <i>(</i> 2)	79.1 (4)	86.7 (3)			
Denmark	1990	84.6 (3)	77.2 (5)	81.2 (4)			
Australia	1989	80.4 <i>(4)</i>	89.9 <i>(2)</i>	91.7 <i>(1)</i>			
West Germany	1991	73.2 (5)	75.0 <i>(6)</i>	78.4 (6)			
United Kingdom	1991	67.9 (6)	70.8 <i>(7)</i>	69.9 <i>(7)</i>			
Ireland	1987	67.4 (7)	80.1 <i>(3)</i>	79.0 <i>(5)</i>			
Mean ²	·	78.5	80.6	82.2			
Coefficient of variation ²		10.7	8.9	8.4			

Notes:

1. Country rankings are italicized, in parentheses.

2. Mean and coefficient of variation are unweighted.

Sources: Australia: LIS data. (see Smeeding, Schmaus and Allegrezza, 1985)
Other countries: see Appendix 1.

We look first at the comparison between wage ratios based on mean earnings in manufacturing and in all employments. The magnitude and direction of differences between the two measures is highly variable. Economy-wide ratios for Australia and Ireland are close to or above 10 percentage points higher than the wage ratio for manufacturing; but wage ratios for East Germany and Denmark each fall by about 7 percentage points. As a results Australia and Ireland move up to second and third places in the intercountry rankings, while Denmark and East Germany each drop two places in the rankings. The ratios and rankings for the Sweden, UK and West Germany are more stable. Sweden remains at the top; but the UK and West Germany each drop a place in the rankings due to the increase in the Irish ratio.

The range between the highest and lowest wage ratios is only slightly lower for the economy wide ratio (21.5 per cent, a fall of only 1.2 percentage points); but the "minimum bound" to the wage ratio has risen by 3.5 percentage points. The average wage ratio across all countries (unweighted) has increased slightly (by about 2 percentage points) and the coefficient of variation has fallen by about one-sixth. Thus, there is some evidence that more harmonised and comprehensive definitions lead to convergence in the ratio across countries, about a slightly higher mean.

Comparisons based on mean wages are, of course, only one way of summarising the wage gap between the sexes. It may be that the distributions of hourly wages are rather different for men and for women. While both distributions may be expected to be skewed, the distribution for women is sometimes thought to involve greater kurtosis - a heavier concentration in the upper and lower tails of the distribution, relative to men. Phipps (1990) sets out a "distributionally sensitive" wage measure, modelled on the Atkinson inequality index; and Jenkins (1994) proposes a measure which is sensitive to the distribution of discrimination⁶. We do not attempt to deal with this issue in detail here, but simply illustrate the potential impact of differences in the male and female distributions across countries by showing wage ratios measured at median earnings.

Changes between wage ratios based on median as against mean wages are less marked than those between mean wages for manufacturing and across all industries. Changes in intercountry rankings are due to a rise in the wage ratio for Australia and a fall for Sweden; and rises for East Germany and Denmark and a fall for Ireland. Again the (unweighted) mean of the wage ratios rises slightly, and the coefficient of variation falls

4. Adjustment for Education and Experience

To what extent can these observed differences in the female to male wage ratio across countries be explained by human capital variables? In order to answer this question, we follow the now standard procedure, starting with the estimation of a simple sex-specific relationship between observed wages, educational qualifications, and alternative measures of labour market experience for each country.

$$\ln w_{\rm m} = X_{\rm m} \beta_{\rm m} + e_{\rm m} \tag{2}$$

$$\ln w_f = X_f \beta_f + e_f$$
 (3)

where W is the hourly wage rate, X is a vector of measured characteristics of the workers such as educational level and work experience, β reflects the rate of return to those characteristics and e reflects the measurement error and effects of factors unobserved or unmeasured. We then follow the logic of the standard Oaxaca decomposition, which takes the male wage structure as representing the "nondiscriminatory" one, and decomposes the average wage gap in logarithms as follows:

$$\overline{\ln w_m} - \overline{\ln w_f} = (\overline{X_m} - \overline{X_f})\beta_m + \overline{X_f}(\beta_m - \beta_f)$$
(4)

⁶Blau and Kahn's (1992) work also takes distributional considerations into account.

⁷ Alternatives include the use of the female reward structure as representing the "nondiscriminatory" structure, or some weighted average of the male and female betas.

where the first term on the right hand side is the "explained" gap, due to differences in the average characteristics of men and women, and the second term, due to differences in the sex-specific coefficients, is referred to as the "unexplained" gap. This decomposition is the basis for a number of summary measures, including the proportion of the observed gap which is explained, and the "discrimination index", which measures the extent of the rise in female wages which would occur if women's characteristics were rewarded in the same way as men's. But for present purposes, it is more convenient to have a measure which is comparable with the unadjusted female/male wage ratio. The "adjusted" wage ratio is based on the *unexplained* portion of the wage gap - it ignores that part explained by differences in characteristics - and can be defined as the ratio of the actual average female wage to the wage they would receive under the male reward structure, i.e.:

$$\frac{\exp \overline{X_f} \ \hat{\beta}_f}{\exp \overline{X_f} \ \hat{\beta}_m} \tag{5}$$

The interpretation of the decomposition, and of measures derived from it such as the adjusted wage ratio defined in (5), raises complex issues. Wright and Ermisch (1991) note that a discriminatory wage structure may induce longer withdrawals from the labour force and less investment in education than would occur under a nondiscriminatory structure, so that part of the "explanation" of the gap due to these variables may be an indirect effect of discrimination. On the other hand, even with a nondiscriminatory wage structure, it may be economically rational for women to invest less in on-the-job training than men because of longer planned interruptions to their labour market careers: in this case, a higher rate of return to labour market experience for men might be due to mismeasurement of the human capital accretion associated with years of experience rather than to discrimination. A further complication is that the "adjusted wage ratio" includes the effects of all unmeasured factors. Despite these complications, a comparison based on wage ratios adjusted for education and experience variables can offer some insights into the nature of cross-country wage gaps.

The control variables used for education were simply dummy variables for the highest educational qualification achieved by each individual. These were not standardised measures of education achievement across countries, but reflected national classifications. A common classification scheme and level of detail would, of course, be of interest, but was not available for the datasets used. The level of detail used in the current study ranged from a minimum of 3 categories in Sweden to a maximum of 12 in the UK, with 5 in Denmark, 6 in East Germany and Ireland, 8 in West Germany: some of the implications of this difference in level of detail are considered in discussing the results. For all countries, a dummy variable for whether or not the individual has a vocational qualification is also included.

⁸ The measure used is essentially the same as one of those proposed by Cain (1986).

A number of different controls for labour market experience were available. In the absence of more detailed information, other studies have often used age as an indicator of human capital, but it introduces significant measurement error if used to represent women's employment experience. More detailed information on the number of years actually worked was also available for all six countries, while the fullest level of detail on actual experience (years worked and years not worked since first leaving full-time education) was available for 3 of the 6 countries. The "actual experience" measure is the only one which directly estimates a "depreciation effect" for time spent out of work (whether unemployed or out of the labour market). But the "years worked" measure provides a superior measure of experience to the "potential experience" measure used in most previous cross-national studies on this topic. The wage equation estimates are presented in Appendix 2, and the adjusted wage ratios based on them are shown in Table 3 below.

Table 3: Female-male wage ratio adjusted for productivity related factors							
	Unadjusted wage ratio	Adjusted for highest educational qualification an					
Country		Age	Years at work	Years at work and years not at work			
Sweden	92.2	87.7	89.1	-			
Ireland	80.1	79.3	85.3	86.4			
E. Germany	79.1	84.5	83.6	-			
Denmark	77.2	80.2	84.2	81.7			
W. Germany	75.0	81.4	81.9	-			
UK	70.8	73.8	76.6	83.0			
Mean	79.1	81.2	83.5				
Coefficient of variation	8.4	5.3	4.5				

Looking first at the comparison of unadjusted wage ratios and those adjusted for education and age, we find that the mean wage ratio across countries rises by 2 percentage points, while the coefficient of variation falls by over one-third. Wage ratios adjusted for years of work rather than age converge somewhat further around a higher mean; the mean rises to 83.5%, while the coefficient of variation is just over half of that for the unadjusted wage ratios. Results for the most detailed experience measures (years worked and years not worked) are only available for 3 countries, but suggest further convergence around a higher mean, as the UK value, which was lowest placed and furthest from the mean, rises towards the mean. One feature of the convergence illustrated by the table is that the wage ratio in Sweden, when adjusted for educational qualifications and age or years of work, is higher than the unadjusted wage ratio. Essentially this means that, on the basis of these characteristics, women in Sweden would be expected to have higher wages than men, rather than lower wages as is actually the case. While the educational variable for Sweden is somewhat limited (having only three categories), similar results have been found in some national Swedish studies (e.g., Andersson, 1995) with more extensive controls for productivity related variables i.e., that the adjusted wage gap is higher than the unadjusted wage gap. Overall, these results suggest that differences in the human capital attributes of men and women can explain much of the inter-country differences in gender wage gaps.

5. Conclusion

The ratios of hourly wages studied here are not a complete index of economic opportunities facing women, or of the economic position of women relative to men. The general perception of the Scandinavian countries as leading the world in terms of gender equity is based on more than simply female-to-male wage ratios: a battery of other policies (such as widely available and heavily subsidised childcare facilities, and parental leave arrangements) facilitate fuller participation by women in economic life in these countries. But on the specific issue of the relative hourly pay of men and women, the statistics derived here from comparable sources suggest some interesting conclusions.

The extent of the gaps between some industrialised countries may be somewhat overstated by the figures based on workers in manufacturing: figures based on harmonised analyses of household surveys find some degree of convergence around a higher central tendency. There are also some changes in intercountry rankings, suggesting that the hourly earnings in manufacturing should not be relied upon as an accurate indicator even of the rankings of countries in terms of gender wage gaps. Furthermore, a simple human capital specification, based on educational qualifications and years worked, suggests that wage ratios adjusted for these variables converge still more, around a higher mean. One potential implication is that policies facilitating high female participation may help to raise the female to male wage ratios in other countries closer to the Swedish level.

Appendix 1: Datasets

Country	Britain	Germany (East and West)	Denmark	Sweden	Ireland	Australia
Description	Household	Household	Register based	Household	Household	Household
	panel	panel	panel	panel	cross-section	cross- section
Number of households	5,511	5,961	3,200	1,500	3,300	
Number of individuals	10,000	12,000	38,000	2,400	8,000	
Year	1991	1991	1990	1986	1987	1989
Name of survey	British Household	German Socio-	Longitudinal data base	HUS	Survey of Income	Survey of Income and
	Panel	Economic	(LDB)		Distribution,	Housing
	Survey	Panel	, ,		Poverty and	Costs
	_	(GSOEP)	•		Usage of	
					State	
					Services	

Appendix 2: Wage Equation Estimates

Wage equation estimates for men: experience measured by years worked

Wage equation estimates for men: experience measured by years worked								
. •	Ireland	UK	West	East	Denmark	Sweden		
			Germany	Germany				
			<u> </u>					
YEARSW/10	0.57	0.50	0.63	0.23	0.44	0.24		
2	(0.04)	(0.03)	(0.03)	(0.04)	(0.03)	(0.03)		
YEARSW ²	-0.86	-0.83	-1.02	-0.39	-0.81	-0.33		
1000	(0.07)	(0.06)	(0.06)	(0.09)	(0.07)	(0.07)		
CONST	0.63	0.92	1.89	1.65	4.35	3.61		
	(0.05)	(0.04)	(0.03)	(0.06)	(0.03)	(0.04)		
ED1	0.15	0.06	0.14	0.10	0.07	0.27		
	(0.03)	(0.11)	(0.02)	(0.13)	(0.04)	(0.03)		
ED2	0.26	0.22	0.28		0.17	0.42		
	(0.04)	(0.07)	(0.05)		(0.05)	(0.04)		
ED3	0.46	0.24	0.19	0.23	0.32			
	(0.04)	(0.05)	(0.05)	(0.06)	(0.05)			
ED4	0.60	0.37	0.10	-0.14	0.46			
	(0.05)	(0.17)	(0.10)	(0.18)	(0.05)			
ED5	0.90	0.28	0.22	-1.00				
	(0.04)	(0.03)	(0.07)	(0.15)				
ED6	,	0.45	0.52					
		(0.04)	(0.05)					
ED7		0.44	0.73	0.37				
		(0.15)	(0.03)	(0.05)		•		
ED8		0.57						
		(0.03)						
ED9		0.61			·			
		(0.10)						
ED10		0.86		:				
2010		(0.04)						
ED11		0.89						
LD11		(0.07)						
VOCQUAL	-0.002	-0.08	0.31	0.25	-0.03	0.10		
VOCQUAL	(0.03)	(0.02)	(0.02)	(0.05)	(0.04)	(0.03)		
Adjusted R ²	0.41	0.35	0.43	0.16	0.20	0.03		
N N	1234	1747	2025	1288	2697	855		
Mean of	1.60	1.82	2.99	2.22	4.82	4.08		
dep.var.	1.00	1.02	4.77	4.44	4.02	4.00		
S.E.R.	0.20	0.41	0.41	0.46	0.45	0.20		
D.L.IV.	0.38	0.41	0.41	0.40	0.43	0.30		

Note: Standard errors in parentheses, italicized.

Wage equation estimates for women: experience measured by years worked.

Variable	Ireland	UK	West	East	Denmark	Sweden
			Germany	Germany		
WOMEN		·				
YEARSW/10	0.61	1	0.62	0.17	0.40	0.16
	(0.06)		(0.04)	(0.04)	(0.03)	(0.04)
YEARSW ²	-1.07		-1.08	-0.23	-0.89	0.24
1000	(0.16)	(0.09)	(0.09)	(0.09)	(0.11)	(0.09)
CONST	0.41	0.87	1.74	1.43	4.18	3.63
	(0.05)	1	(0.04)	(0.05)	(0.03)	(0.04)
ED1	0.16		0.18	0.08	0.13	0.18
	(0.06)	(0.12)	(0.03)	(0.03)	(0.03)	(0.03)
ED2	0.23	0.004	-0.04		0.19	0.39
	(0.06)	(0.16)	(0.07)		(0.04)	(0.04)
ED3	0.50	0.15	0.33	0.26	0.29	
	(0.05)	(0.06)	(0.05)	(0.06)	(0.04)	
ED4	0.80	0.24	0.37	-0.06	0.64	
	(0.07)	(0.05)	(0.13)	(0.13)	(0.05)	
ED5	1.14	0.26	0.14	-0.53		
	(0.06)	(0.03)	(0.08)	(0.32)		
ED6		0.37	, 0.58			
		(0.04)	(0.08)			
ED7		0.60	0.78	0.65		
		(0.06)	(0.05)	(0.06)		
ED8		0.50				
		(0.04)				
ED9		0.90				*
		(0.06)				·
ED10		0.89				
		(0.04)				
ED11		1.17				•
		(0.11)				
VOCQUAL	-0.10		0.26	0.34	0.06	0.08
	(0.07)		(0.03)	(0.04)	(0.03)	(0.03)
Adjusted R ²	0.46	+	0.35	0.17	0.19	0.14
N	771	1880	1340	1086	2460	824
	of 1.34	1.47	2.71	2.04	4.60	3.91
dependent						
variable						
S.E.	of 0.42	0.43	0.43	0.38	0.39	0.31
regression						

Note: Standard errors in parentheses, italicized.

Wage equation estimates: experience measured by years worked and years not worked

	Ireland		UK		Denmark	
	Men	Women	Men	Women	Men	Women
YEARSNW/10	-0.43	-0.22	-0.46	-0.33	-0.03	0.05
	(0.04)	(0.06)		(0.05)	(0.05)	(0.03)
YEARSNW ²	1.21	0.57	1.82	0.95	0.06	-0.15
1000	(0.07)	(0.26)	0	(0.23)	(0.29)	(0.13)
YEARSW/10	0.56	0.66	0.49	0.40	0.44	0.39
TEARSW/10	(0.04)	(0.06)	U. 4 3	(0.04)	(0.03)	(0.03)
2	-0.87	-1.19	-0.79	-0.78	-0.82	0.86
YEARSW ²	(0.07)	(0.16)	-0.79	(0.09)	(0.07)	(0.11)
1000						
CONST	0.72	0.49	0.95	0.94	4.36	4.17
	(0.05)	(0.07)		(0.04)	(0.03)	(0.03)
ED1	0.14	0.13	0.08	0.22	0.07	0.13
	(0.03)	(0.06)	(0.11)	(0.12)	(0.04)	(0.03)
ED2	0.21	0.17	0.22	-0.02	0.16	0.20
	(0.04)	(0.06)	(0.07)	(0.16)	(0.05)	(0.04)
ED3	0.40	0.43	0.24	0.07	0.31	0.30
ED4	(0.04)	(0.06)	(0.05)	(0.06)	(0.05)	(0.04)
ED4	0.57	0.74	0.39	0.20	0.45	0.65
ED5	(0.05)	(0.07)	(0.17)	(0.05)	(0.05)	(0.05)
ED5	0.86 <i>(0.04)</i>	1.06 (0.07)	0.28 (0.04)	0.19 (0.03)		
ED6	(0.04)	(0.07)	0.45	0.29		
EDO			(0.04)	(0.04)		
ED7			0.46	0.53		
ED/			(0.15)	(0.06)		
EDO						
ED8			0.57 (0.04)	0.42 (0.04)		
EDO						
ED9			0.63	0.85		
ED10			(0.10)	(0.06)		
ED10			0.86	0.82		
ED 11			(0.04)	(0.04)		
ED11			0.91	1.07		
			(0.07)	(0.11)		
VOCQUAL	-0.007	-0.11	-0.08	-0.002	-0.03	0.06
A 1:4-1 D2	(0.03)	(0.07)	(0.02)	(0.02)	(0.04)	(0.03)
Adjusted R ²	0.43	0.47	0.36	0.33	0.20	0.19
N	1234	771	1686	1835	2697	2460
Mean of	1.60	1.34	1.83	1.47	4.82	4.60
dep.var.						
S.E. of	0.38	0.42	0.41	0.43	0.45	0.39
regression			1			

Note: Standard errors in parentheses, italicized.

References

- Andersson, P. (1995) "Labor Market Discrimination and Changes in Relative Wages: A Study of Swedish Females 1984 to 1993", mimeo, University of Gothenburg, April.
- Asplund, R, E. Barth, N. Smith and E. Wadensjo (1995) "The Male-Female Gap in the Nordic Countries", forthcoming in N. Westergaard-Nielsen (ed.) Wage Differentials in the Nordic Countries, Amsterdam: North-Holland.
- Blau, F. and L. Kahn (1992) American Economic Review, Papers and Proceedings of the AEA, May, pp. 533-538.
- Cain, G. (1986) "The Economic Analysis of Labor Market Discrimination: A Survey", in O. Ashenfelter and R. Layard (eds.) *Handbook of Labor Economics, Vol. 1*, Amsterdam: North-Holland.
- Callan, T. and Wren, A (1994) Male-Female Wage Differentials: Analysis and Policy Issues. Dublin: The Economic and Social Research Institute, General Research Series, Paper No. 163.
- Gunderson, M. (1989) "Male-Female Wage Differentials and Policy Responses", Journal of Economic Literature, Vol. XXVII, pp. 46-72.
- Jenkins, S. (1994) "Earnings Discrimination Measurement: A Distributional Approach", Journal of Econometrics, Vol. 61, No. 1, pp. 81-102.
- OECD (1988) "Women's Activity, Employment and Earnings: A Review of Recent Developments" *Employment Outlook*, September.
- Mincer, J.(1985) "Intercountry Comparisons of Labour Force Trends and of Related Developments; An Overview", *Journal of Labour Economics*, Vol 3, No.1, Supplement.
- Phipps, S. (1992) "Measuring Gender Differences in Wage Distributions for Five Countries", Research on Economic Inequality, Vol. 3, pp.133-152.
- Phipps, S. (1990) "Gender Wage Differences in Australia, Sweden and the United States", *Review of Income and Wealth*, Series 36, No. 4, pp. 365-379.
- Smeeding, T. G.Schmaus and S. Allegrezza (1985) "An Introduction to LIS", Luxembourg Income Study Working Paper No. 1.
- Treiman, D. and P. Roos (1983) "Sex and Earnings in Nine Nations", American Journal of Sociology, Vol. 89, No. 3, pp. 612-650.
- United Nations Development Programme (1995) *Human Development Report*, New York and Oxford: Oxford University Press.
- Wright, R. and J. Ermisch (1991) "Gender Discrimination in the British Labour Market: A Reassessment", *Economic Journal*, Vol. 101, May, pp. 508-522.