
**MALE-FEMALE
WAGE DIFFERENTIALS:
ANALYSIS AND POLICY ISSUES**

Tim Callan and Anne Wren



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GENERAL SUMMARY

Background to the Study

The average hourly earnings of Irish women working in industry rose sharply relative to their male counterparts during the 1970s, particularly after the introduction and implementation of equal pay legislation and anti-discrimination legislation. Since 1980, however, the gap between male and female hourly earnings in industry has been roughly stable. As in many other countries, the persistence of a sizable gap between men's and women's wages, as conventionally measured, has given rise to considerable concern. To date, the study of the nature and extent of the gap between male and female wages in Ireland has been hampered by a lack of suitable information. The present paper draws on data gathered in the ESRI's 1987 Survey of Income Distribution, Poverty and Usage of State Services to provide new insights into the nature and extent of the gap.

The primary goals of the analysis are to provide a comprehensive measure of the average gap between men's and women's hourly earnings, rather than one restricted to production workers in manufacturing; to examine the structure of the overall differential, in terms of the characteristics of jobs and of job-holders; to quantify the extent to which differentials can be explained by differences in the characteristics of male and female employees (such as education qualifications and the length of labour market experience) and how much is an unexplained "residual"; and to assess the impact of certain family commitments on women's employment. Policy issues arising in the area of equality of opportunity are discussed in the light of wider international experience and the new findings for Ireland.

Measurement of Male-Female Wage Differentials in Ireland

The most commonly quoted figures on the male-female wage gap are for production workers in manufacturing industry. In Ireland, the average hourly earnings of women in this group are just over two-thirds of the earnings of their male counterparts. But the group includes less than 1 in 3 of all employees and less than 1 in 5 of all female employees. Thus, statistics for this sub-group may not provide a representative picture of the

economy-wide wage gap. The ESRI 1987 Survey provides information which allows a more general picture to be developed. It shows that when *all* male and female employees are included in the analysis, women's hourly earnings are approximately 80 per cent of men's - a ratio over 12 percentage points higher than the usually quoted one. This shows the importance of taking a comprehensive view of the issue, since women with above average earnings are more strongly concentrated than men in areas outside the manufacturing sector.

Some insights into the nature of the overall wage gap can be gained from examining average wages and the distribution of male and female employees in terms of a single factor, such as age or labour market experience. Typically, we find that wage gaps for groups of similar age or labour market experience are smaller - around 7 per cent for those aged under 35. The higher overall wage gap is due to the fact that women are more heavily concentrated in the younger age groups, which tend to have the lowest wages irrespective of sex. Despite the notable increase in married women's labour market participation over the last 30 years, approximately 70 per cent of female employees were aged below 35, compared with only 52 per cent of men.

Decomposition of Male-Female Wage Differentials

A more comprehensive analysis of the sources of the gap between men's and women's wages must take account of several factors simultaneously. Many international studies have been undertaken which attempt in this way to identify that part of the gap which can be explained by factors such as educational qualifications and length of labour market experience, and a "residual" which cannot be explained in this way. The basic intuition behind the procedures used in such studies is straightforward. Looking at male and female employees separately, relationships between hourly wages and measured personal characteristics (such as labour market experience and educational qualifications) are estimated. These relationships tell us, for example, how much an extra year's experience adds to the hourly wage of a man or a woman, other things being equal. With this information, we can estimate the hourly wage the average woman would receive if her characteristics were rewarded in the same way as men's. The difference between this estimate and the wage that an average man currently receives can be explained by differences in their characteristics.

Applying these methods to the ESRI data, we find that about half of the total wage gap of 20 percentage points can be explained by differences in productivity-related characteristics. Length of labour market experience plays the most important role: female employees typically have educational qualifications which are at least as high as those of men. This leaves an "unexplained" or "residual" gap of the order of 10 percentage points which cannot be explained by variables included in this study. Because of its "residual" nature, interpretation of this unexplained gap is difficult: in part it reflects the extent of our ignorance concerning the processes of wage determination. But a part of the unexplained gap may also reflect the effects of current or past discriminatory practices.

Employment and Family Commitments

There is clear evidence from a number of sources concerning the impact of children on women's labour market participation. Women with children, particularly those with a pre-school child, are less likely, other things being equal, to be in paid employment. While the extent to which women with children have remained in paid employment has grown, child-related breaks in women's labour market participation have contributed to the observed gap between men's and women's wages, and are likely to continue to do so. Similarly, evidence from the ESRI Survey and other sources shows that the extent to which women care for family members with special needs (such as the handicapped or the elderly) also tends to reduce their labour market participation, and their wage if they do return to the labour market.

Policy Issues

The analysis of the nature of the gap between men's and women's wages suggests that in the Irish context, a sustained rise in women's employment over the life-cycle would be the single most effective factor in reducing the gap between men's and women's wages. If policy were aimed solely at equality of labour market outcomes between the sexes, the implications would be relatively straightforward. But policy is aimed instead at creating equality of opportunity, while also seeking to achieve other goals - such as the maximisation of employment. This means that the relative weights assigned to different goals, and the degree to which policies favouring one goal have unfavourable impacts on other goals have to be considered. As a result, policy decisions on equal opportunities cannot be isolated from other areas of policy, but require a broad analysis which takes account of many factors. For example, the development of

state policy on childcare must include consideration of the developmental benefits of some forms of childcare for pre-school children, of the existing balance of income support between families in and out of work, and between one and two-earner couples, and of the more general implications of financing an increase in state expenditure.

Chapter 1

INTRODUCTION

The persistence of sizable differentials between male and female hourly earnings despite the introduction of a range of anti-discrimination measures has been a focus of concern in many countries. In Ireland, the ratio of the average hourly earnings of female production workers in industry to that of their male counterparts rose sharply between 1975 and 1980, following the implementation of equal pay legislation (1975) and anti-discrimination legislation (1977). But since that time the ratio has been approximately stable at about 68 per cent. The situation is, therefore, not unlike that which has given rise to concern elsewhere.

There have been, however, considerable constraints on the analysis of gender wage differentials in Ireland. The limitations of available data have tended to focus particular attention on the average hourly earnings of production workers in industry. But these constitute less than 1 in 3 of all employees, and less than 1 in 5 female employees. Furthermore, detailed analyses of the relationship between wages and gender, controlling for such important factors as educational qualifications and labour market experience, have been limited to rather special sub-samples of the population.

The ESRI Survey of Income Distribution, Poverty and Usage of State Services makes possible:

- (a) a comprehensive measure of the average gap between men's and women's hourly earnings;
- (b) in-depth analysis of the structure of these differentials, in terms of the characteristics of jobs and of job-holders;
- (c) quantification of the extent to which differentials are due to differences in the characteristics of male and female employees (such as educational qualifications and past labour market experience) and how much is a "residual", possibly attributable to discrimination; and
- (d) assessment of the impact of certain factors restricting women's labour market opportunities, including costs of childcare and the special care needs of other family members such as the elderly.

Throughout the paper, the focus is on differences in the *hourly* earnings of men and women. Weekly earnings obviously differ more greatly, because of differences in hours of work. But explanation of explanation of weekly earnings differences requires analysis of why men's and women's hours of work differ, which is outside the scope of the present study of *wage* differentials.¹

The paper is structured as follows. Chapter 2 contains a review of the international evidence, including both trends in male-female wage ratios, and cross-section analyses of gender wage gaps in selected countries. Chapter 3 begins by outlining the data from the ESRI Survey; and then uses it to measure the extent of the overall male-female wage differential in Ireland. The variation in the wage gap across age groups, occupations and marital statuses is also examined. Chapter 4 contains a detailed analysis of the wage gap between men and women. Separate analyses are conducted for married and non-married individuals, as well as an aggregate analysis irrespective of marital status. Chapter 5 deals with family commitments tending to restrict women's labour market participation and thereby reduce their potential wages at future dates. Chapter 6 reviews the nature of the policy instruments which have been used to bring about equality of opportunity between the sexes in the labour market, and the international experience with their use. It also reviews the instruments which have been used in Ireland, and some current policy issues.

¹See Drew (1991) for a recent study of factors influencing the extent of part-time work.

Chapter 2

INTERNATIONAL EVIDENCE

2.1 Introduction

Before conducting a more detailed analysis of the Irish wage gap, it is of interest to set it in its international and historical context. In this chapter we provide a summary of the trends and levels in the wage gap in a range of countries over the last few decades (Section 2.2).

A large number of international studies have been carried out which attempt to decompose the wage gap into:

- (a) that portion which may be attributed to differences in characteristics between men and women; and
- (b) a "residual", which might be attributable to discrimination

Investigations of this kind are necessary if we are to fully understand the nature and behaviour of the wage gap and hence to assess the type of policy most appropriate to attempt to reduce it. International studies attempting to decompose the wage gap in this way are therefore reviewed in Section 2.3. In Section 2.4 we briefly review some theories of labour market discrimination, which also provide relevant background information for the present study.

2.2 International Trends in Male-Female Wage Ratios

In order to obtain a broad comparative picture of historic trends in the wage gap, we must rely on statistics on the hourly earnings of manual workers in the manufacturing sector. The restriction of the figures used to manual workers in manufacturing means that it may not reflect accurately the *level* of the economy-wide wage gap between men and women. First, since the male-female wage gap in the manufacturing sector tends to be larger than in the non-manufacturing sector, concentration on the manufacturing sector will tend to lead to an overestimation of the size of the total wage gap. At the same time, the wage gap is calculated to be smaller among manual than non-manual workers in most OECD countries, hence a concentration on manual workers in manufacturing might be expected to lead to an underestimation of the size of the total wage gap in the manufacturing sector. The arithmetic of the economy-wide wage gap is

further complicated by the fact that the proportion of women working in non-manual occupations is higher than for men. Since the general level of earnings for women (and men) is higher in non-manual occupations than in manual occupations, this factor tends to reduce the economy-wide wage gap between men and women. The balance between these factors may vary across countries and over time, severely limiting the interpretation which should be placed upon them.

In 1955, most OECD countries recorded male-female wage gaps of between 30 and 50 per cent. Over the last three decades female relative earnings have shown substantial increases in most of these countries, causing wage gaps in some countries to fall as low as 10 or 15 per cent by 1989, though gaps of up to 30 per cent persist in a number of countries. Table 2.1 shows the ratio of female to male hourly earnings for manual workers in the manufacturing sector over this period in a range of countries.

Each country differs in its initial starting point, the size and timing of changes in the wage gap, and the length of time over which the changes occurred. As the table shows (and as illustrated in Figure 2.1), wage ratios in Ireland and the UK have behaved rather similarly over the last three decades. Along with Japan and the Netherlands, they recorded values of less than 60 per cent in 1955, falling well below those of close to 70 per cent observed in the Scandinavian countries. In addition, while wage ratios began to show an upward trend in the late 1950s in Germany and the Netherlands, and in the early 1960s in most other countries, no such changes are observed in Ireland and the UK until the 1970s. Relative earnings grew fairly strongly in both countries during the 1970s, but remained more or less constant throughout the 1980s at just below 70 per cent. The growth of relative earnings seems to have come to a halt in most countries in the late 1970s, with only a few countries (e.g., Norway, Greece, France, and the US) recording increases in the last decade. By the end of the period shown, wage gaps in some of the Scandinavian countries were between 10 and 15 per cent and most of the other countries shown recorded gaps of between 20 per cent and 30 per cent. In spite of the sharp increases in female earnings relative to males during the 1970s, however, aggregate wage gaps for production workers of over 30 per cent persisted in Ireland and the UK. A similar gap persisted in Switzerland, and a larger one in Japan; the aggregate wage gap had declined only minimally in each of these countries over the entire period.

Table 2.1 *Ratios of Female to Male Hourly Earnings for Manual Workers in Manufacturing*

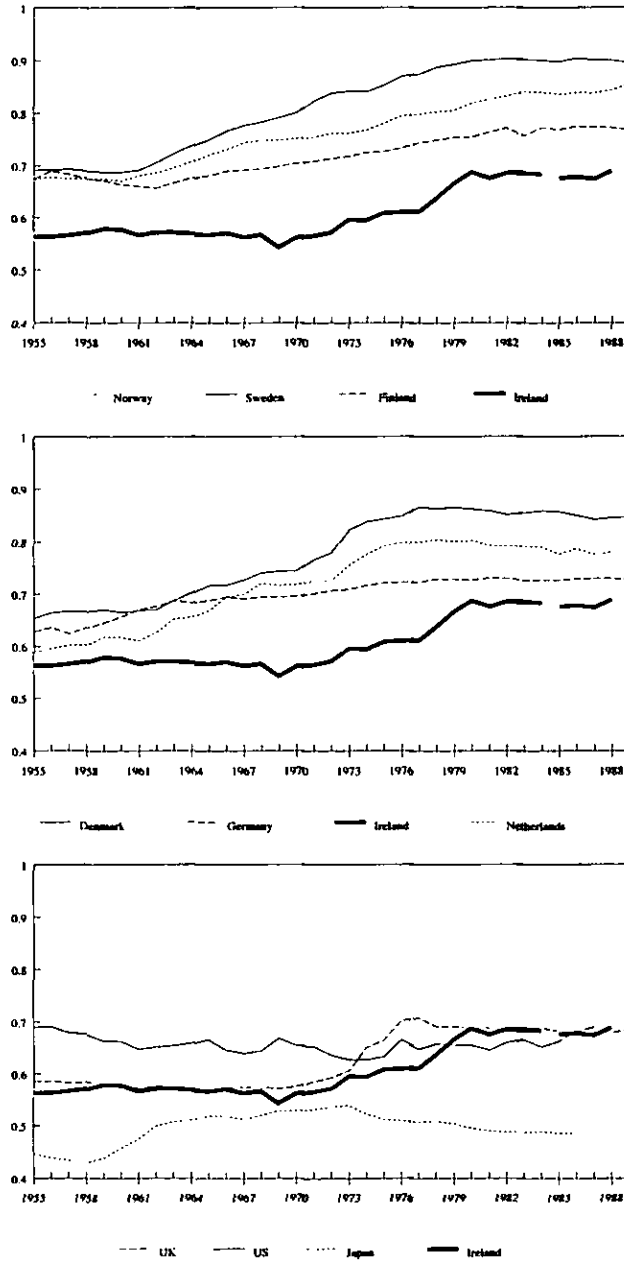
Year	Den	Fin	Ger	Grc	Irl	Jap	Neth	Nor	Swe	Swi	UK	US	A'lia	Fra
1955	65.3	67.6	62.8		56.4	44.7	58.8	67.4	69.2	63.7	58.5	68.9		
1956	66.4	68.9	63.6		56.4	44.0	59.6	67.8	69.2	64.2	58.6	69.0		
1957	66.7	68.4	62.4		56.7	43.4	60.3	67.5	69.3	64.2	58.2	68.0		
1958	66.6	67.7	63.5		57.1	43.0	60.3	67.5	69.0	63.1	58.4	67.7		
1959	67.0	67.2	64.5		57.9	43.9	61.8	67.5	68.8	63.2	58.4	66.4		
1960	66.5	66.4	65.6		57.7	45.7	61.7	67.1	68.8	63.3	57.3	66.3		
1961	66.8	66.0	67.0	64.7	56.7	47.5	61.1	68.1	69.1	63.5	57.3	64.7		
1962	67.0	65.7	67.7	63.4	57.2	49.9	62.7	68.6	70.5	62.8	57.7	65.2		
1963	68.7	66.7	68.7	62.7	57.2	50.7	65.1	69.5	72.2	62.7	57.5	65.4		
1964	70.2	67.7	68.3	61.3	56.9	51.1	65.5	70.7	73.7	62.6	57.2	65.9		
1965	71.6	68.1	68.8	62.1	56.7	51.9	66.9	72.0	74.9	62.7	56.8	66.6		
1966	71.7	68.9	69.4	62.9	57.1	51.8	69.5	73.0	76.5	63.1	57.4	64.6		
1967	72.7	69.1	69.1	67.2	56.3	51.2	70.0	74.3	77.6	63.3	57.3	63.9		
1968	74.0	69.3	69.4	68.4	56.7	52.0	72.0	74.8	78.2	63.1	57.4	64.4		
1969	74.3	69.8	69.4	69.2	54.3	52.9	71.6	74.8	79.1	63.7	57.2	66.9		
1970	74.4	70.4	69.6	68.0	56.2	52.9	71.8	75.1	80.0	64.7	57.6	65.5		
1971	76.6	70.8	70.1	66.2	56.5	53.1	72.5	75.4	82.4	64.9	58.5	65.3	65.7	
1972	77.9	71.3	70.7	67.2	57.2	53.6	72.5	76.2	83.8	64.7	59.3	63.6	67.7	
1973	82.3	71.7	70.9	65.5	59.6	53.9	75.5	76.2	84.1	65.4	60.7	62.7	69.4	
1974	83.8	72.4	71.6	66.9	59.5	52.3	77.6	76.7	84.0	65.7	65.1	62.7	74.1	
1975	84.3	72.6	72.1	69.5	60.9	51.2	79.2	78.0	85.2	66.0	66.5	63.3	78.5	
1976	84.8	73.3	72.2	70.3	61.0	51.0	79.8	79.4	86.9	66.5	70.2	66.6	79.0	
1977	86.5	74.3	72.3	68.8	61.2	50.7	80.0	79.8	87.4	65.4	70.8	64.8	80.0	
1978	86.2	74.8	72.8	69.0	63.8	50.9	80.4	80.2	88.7	66.0	69.1	65.8	79.8	
1979	86.4	75.3	72.8	67.9	66.7	50.4	80.1	80.5	89.3	65.9	69.1	65.6	77.4	
1980	86.1	75.4	72.7	67.8	68.7	49.5	80.2	81.9	89.9	66.4	68.8	65.6	78.7	77.0
1981	85.8	76.3	73.1	67.2	67.6	49.1	79.3	82.6	90.1	66.9	68.8	64.6 ^b	77.4	78.1
1982	85.1	77.1	73.0	73.1	68.5	48.8	79.2	83.2	90.3	67.0	68.8	66.1	78.2	77.7
1983	85.5	75.6	72.6	74.6	68.5	48.8	79.2	84.0	90.2	66.8	69.0	66.6	76.1	78.4
1984	85.8	77.2	72.7	76.2	68.3 ^a	48.9	79.0	83.9	90.0	66.9	68.8	65.3	79.6	78.4
1985	85.6	76.8	72.7	77.6	67.6	48.6	77.7	83.5	89.8	67.1	68.2	66.3	79.4	79.1
1986	84.9	77.4	72.9	76.9	67.8	48.5	78.7	83.8	90.4	67.4	67.9	68.1	80.0	79.5
1987	84.2	77.3	73.0	77.6	67.4		77.6	83.7	90.1	67.3	68.0	69.0	79.8	79.2
1988	84.5	77.2	73.0	78.0	68.9		78.0	84.3	90.0	67.5	68.0		79.6	
1989	84.6	76.8	72.8					85.5	89.5		68.4			

Sources: OECD Employment Outlook (Sept. 1988); ILO Yearbook of Labour Statistics; and for US, O'Neill (1985).

Notes: a. Pre-1985 the Irish figures relate to industrial establishments with 3 or more people engaged. From 1985 on they are restricted to establishments with 10 or more people engaged.

b. The series for the US are not strictly comparable with the others shown. There is also a discontinuity in the series at 1982. The series up to 1982 is median earnings of year round full-time workers adjusted for hours worked from O'Neill, 1985. From 1982 on the series is "implicit" hourly earnings adapted from the median annual earnings of "true" year-round workers (*Monthly Labour Review*, July 1990).

Figure 2.1: *Ratios of Female to Male Hourly Earnings of Manual Workers in Manufacturing Industries for Selected Countries*



There is no simple correspondence between the ranking of OECD countries according to the usual measures of economic strength, such as GNP per head, and the male-female wage ratio. Neither is there a simple correspondence between economic growth and reductions in the wage gap. However, most of the growth in the female-male wage ratio in continental Europe (including Scandinavia) occurred during the more favourable economic climate of the 1960s and early 1970s. Significant links between economic growth, the strength of labour demand, and the male-female wage ratio could be part of the explanation.

More generally, the path of the male-female wage ratio over time can be viewed as influenced by the balance between the supply of and demand for male and female labour. (Geary and Walsh, 1972). Implicit in this view is some element of segmentation or segregation between the markets for male and female labour. In most OECD countries, despite a rapid expansion in female labour force participation, the occupational and industrial structure of employment for men and women remains quite different (OECD, 1988). Thus, if industries in which women are concentrated experience relatively strong growth, upward pressure on the female-male wage ratio may result. But if the supply of female labour increases, and leads to relatively slow wage growth in these sectors, downward pressure on the female-male wage ratio may result.

2.3 Analysis of Male-Female Wage Differentials

2.3.1 Methods of Analysis

In studying Table 2.1 certain obvious questions present themselves. Why do some countries consistently display larger wage gaps than others? Can the differences between countries simply be explained by differences in the characteristics of their workforces or is there a measure of discrimination involved? Closely linked to these questions are questions about the changes which have occurred in the wage gap over the last few decades. Why has the wage gap fallen much faster in some countries? Are the changes which have occurred a result of changes in the structure of the labour market or in the characteristics of participants or have they come about due to changes in societal attitudes and legislation?

Many international studies have been carried out which attempt to decompose the wage gap into that which can be "explained"- i.e., that which is attributable to differences in productivity-related characteristics between men and women - and a residual which might be attributed to discrimination. Such studies are obviously useful in attempting to

understand the nature of the wage gap and go some way to answering the questions posed above. They are also an essential element in determining the appropriate policy response to deal with the wage gap: anti-discrimination legislation will only be effective in so far as the wage gap is actually due to discrimination, rather than, for example, differences in educational levels or past experience. The results of some of these studies will be reviewed in this section. The impact of legislation and policy initiatives in various countries on the wage gap is examined in more detail in Chapter 6.

Most studies follow a fairly standard methodology to decompose the wage gap. Separate "wage offer" equations are estimated for males and females. Each equation contains "human capital attribute" variables (such as education, training, health, etc.), and a separate, so-called "home time" variable measuring the amount of time spent outside the labour market, allowing the impact of each on male and female wages to be estimated. By including the "home time" variable it is hoped that the so-called "depreciation effect" of time spent out of the labour market on human capital (i.e., skills, proficiency, etc.) and hence on labour market rewards can be taken into account. Following a method devised by Oaxaca (1973) these two equations are used to decompose the differences in the average wages of men and women into three components:

- (1) The wage gap that would exist if women's attributes were rewarded as men's (i.e., that arising from differences in the measured attributes of men and women)
- (2) The wage gap arising from differences attributable to time spent out of the labour force; and
- (3) A residual which might be attributable to discrimination (in so far as it represents the differences in the remuneration of measured attributes between men and women.)

From the third component an index is derived, which represents the percentage increase in their hourly wage women would receive, given their attributes, if these attributes were rewarded in the same way as those of their male counterparts. This index is often referred to in the literature as a "discrimination" index. There are, however, considerable difficulties attached to the interpretation of the index. In the remainder of this section,

we set out some of the major difficulties, which should be borne in mind in interpreting the results of the international studies reviewed in this chapter, and the results for Ireland contained in Chapter 4.

The first, and most obvious difficulty in interpreting the residual and the "discrimination" index based on it, is that, by definition, it includes the effects of all unmeasured factors. As Mincer (1985) puts it, the residual should be considered a "measure of ignorance". The residual will depend not only on the extent of any discrimination, but also on any relevant productivity-related characteristics which are not included in the particular data set. To this extent use of the residual as an estimate of discrimination can lead to an over-estimation of the effects of discrimination. Some unmeasured factors could, however, work in the opposite direction.

The recent study by Wright and Ermisch (1991) of the UK wage gap points out some further problems in interpreting the "discrimination" index. First, the residual element, representing the differential impact of male and female human capital attributes on wages, will tend to reflect a combination of differences in actual rates of return to the same unit of human capital and of gender differences in human capital investment ratios- i.e., differences in the amount of "investment" in human capital undertaken by males and females both in education and on the job. Only the former differences are defined as "direct discrimination" but the methodology used does not permit the separation of the two. This factor tends towards over-estimation of the extent of "direct discrimination".

On the other hand, gender differences in human capital investment may themselves reflect discrimination in the market place to some extent. If human capital investments are inequitably rewarded in the marketplace an economically rational woman will choose to invest less than her male counterpart. In such circumstances, controlling for factors such as education, training, and length of time spent in the marketplace will lead to an underestimation of the true extent of labour market discrimination: characteristics such as education, training and actual labour market experience may themselves reflect the indirect effects of labour market discrimination.

Similar problems arise when occupational differences are included in the analysis. The inclusion of variables capturing occupational differences in the wage equation can improve the explanatory power of regressions considerably. It also assumes, however, that the choice of occupation is a completely free one and, as such, that occupational differences are in some way "justified". Such an assumption ignores the effects of labour market

discrimination on the occupational attainment of women (and hence on their wages). Therefore an approach based on this assumption is likely to underestimate the extent of discrimination.

In recognition of this problem, and in order to facilitate comparisons with earlier studies, Wright and Ermisch do not include any occupational variables in their analysis. Specifying their wage equation purely in terms of "human capital attributes", they concentrate on an "equal pay for equal human capital attributes" interpretation of discrimination. This interpretation has significant limitations. Actual wage rates can depend not only on human capital but also on industry-specific factors (leading to industry-specific wage differentials) and on the role of unions. Part of the differences between male and female wage rates may reflect the influence of these factors. In our analysis of Irish data (Chapter 4) we explore the possible sensitivity of results to alternative approaches.

2.3.2 Results of International Studies: UK, Sweden and USA

UK studies

Studies of the UK wage gap are of particular interest, in view of the similarity of the wage gap trends between Ireland and the UK. Wright and Ermisch (1991) provides the most recent study, and a review of previous UK work on this topic. Wright and Ermisch provide the first UK estimates of wage gaps which are adjusted for education levels and *actual* work experience data, making use of the first nationally representative sample of British women to include detailed work histories and earnings data - the 1980 Women and Employment Survey. Through the use of these data they claim to provide a more accurate estimate than earlier studies which were forced to use estimates of "potential" or "imputed" work experience which restricted their ability to accurately take account of the depreciation effect of home time on female wages.

As a result of their analysis, they conclude that about 50 per cent of the 1980 wage gap may be attributed to direct discrimination and thus, that the "extent" of discrimination is between 20 and 25 per cent- i.e., women's wages would be approximately one-fifth higher in the absence of direct discrimination. About 17 per cent of the wage gap they attribute to differences in attributes between males and females, with "home time" contributing between 25 and 30 per cent. The findings of Wright and Ermisch appear to coincide with most of the findings of previous studies of the UK wage gap (all of which are operating, of course, under the general limitations of the method discussed earlier). Their estimate of the extent of

discrimination in 1980 is only slightly higher than Miller's (1987) estimate of 18.5 per cent for the same year, which was based on an analysis of the General Household Survey. Miller estimated the "depreciation effect" of home time as slightly higher, however. They point out that while their estimate is slightly lower than that of Joshi and Newell (1987) for the year 1977/1978 (27 per cent), this was to be expected since Joshi and Newell were concentrating exclusively on an older (1946) birth cohort whereas their data included younger generations. In addition it was to be expected that their estimates would be slightly higher than those of Dolton and Makepeace (1986) (20 per cent) who concentrated on university graduates and Siebert and Sloane (1981) who concentrated on professional workers. The only UK study which appears to conflict substantially with these findings is that of Zabalza and Arrufat (1982, 1985), who estimated that in 1975 more than 70 per cent of the wage gap was attributable to the "depreciation effect" of home time and that the "extent" of discrimination was less than 10 per cent. There appears to be no clear explanation for these differences,¹ in particular since Miller's study was carried out on the same data set as Zabalza and Arrufat's - the General Household Survey - and used a similar measure of "imputed" experience to compensate for the absence of real work history data in the survey. Indeed Wright and Ermisch show in their own analysis that the use of "imputed" experience in substitution for actual work experience data makes little difference to estimates of the female wage equation and of gender discrimination.

Among their conclusions, Wright and Ermisch note that, taking Joshi and Newell's 1972 estimate the level of discrimination as 51 per cent as a baseline, their 1977 estimate of 32 per cent, along with Wright and Ermisch's 1980 estimate of between 20 per cent and 25 per cent, indicate that the level of gender discrimination declined in line with the overall wage gap during the 1970s. This suggests that the anti-discrimination legislation introduced in this period was at least partially responsible for the observed reduction in the overall wage gap in so far as it caused a reduction in the amount of direct gender pay discrimination. A more detailed review of the evidence of the impact of legislation on the UK wage gap will be presented in Chapter 6.

¹It may be noted that Zabalza and Arrufat's results are sensitive to the Heckman correction for self-selection of women into the paid labour force.

Swedish studies

Analysis of the Swedish wage gap is also potentially enlightening in view of the contrast between the Swedish and Irish experiences as shown in Table 2.1. Gustafsson and Jacobsson (1985) point out that the dramatic decrease in the male-female wage gap observed in Sweden between 1963 and 1981 was accompanied by increases in female education levels and in the level and duration of female labour force participation. In principle, they argue, this could imply that the observed decrease in the wage gap was a result of an equalisation of the amount of human capital accumulated at school and work between women and men. Investigating this further by means of a decomposition of the wage gap, however, they discover that most of the decrease appears to have occurred as a result of factors other than the included human capital variables. A large portion of the Swedish wage gap falls into the residual or "unexplained" category (approximately four-fifths in 1981) and sharp decreases in this residual account for almost all of the reduction in the wage gap observed over the period 1963 to 1981. It is clear, therefore, that the large decreases observed in the Swedish wage gap between 1963 and 1981 cannot be attributed to changes in human capital attributes. Neither can they be attributed to anti-discrimination legislation, however, since the bulk of such legislation was not introduced in Sweden until the 1980s. Gustafsson and Jacobsson cite the effects of centralised collective bargaining, a strong union policy to increase low wages, and structural changes in the economy, such as the increase in public sector employment, as possible explanatory factors, although they offer no direct evidence to support their suggestions.²

US studies

The virtual stability of the US wage gap over three decades, despite the passage of equal pay and equal employment legislation, has provoked much discussion and analysis. O'Neill (1985) cites the results of various studies which have found that a large part of the US wage gap is explained by differences in schooling, work experience, job tenure and the effects of "home time", with the residual attributed either to unmeasured factors or to discrimination. O'Neill postulates that the wage gap would not narrow unless either the productivity of females relative to males in the labour market increased or the extent of discrimination in the labour market declined. She therefore investigates the behaviour of the measurable

²Neither is there any discussion of the possible employment effects of the unions' wage policies.

productivity-related characteristics of males and females in the labour market over the period in question, in an attempt to explain the trends in the wage gap, and concludes that it was the behaviour of these variables which prevented the overall wage gap from decreasing. Between 1950 and 1979 the educational differential between men and women in the labour force, which had previously favoured females, declined steadily, as a result of faster growth in the educational attainment of men relative to that of women and the faster growth in labour force participation of less educated, relative to more educated women. In addition, the length of job tenure of men also grew relative to that of women up to the mid-60s. O'Neill argues that the increases in the sex differentials on education and work experience that occurred as a result of these changes were in fact sufficient to cause a larger increase in the wage gap than was observed during this period, thus their failure to do so may imply that the level of "discrimination" actually decreased. In the late 1970s a small decrease in the US wage gap began to be observed. Population Survey evidence shows a sharp decline in female entrants and leavers as a percentage of the labour force since 1975, implying an increase in average female work experience levels which must have contributed, at least in part, to this decrease.

O'Neill's work emphasises the role of human capital attributes in influencing the behaviour of the US wage gap over the last four decades, therefore, although her discussion also leaves room for labour market discrimination to play its part (both directly, and indirectly through the "feedback" effects of labour market discrimination on human capital attributes). Blau and Ferber (1987) report the findings of various studies conducted between 1964 and 1981 which attempt to measure the extent of gender pay discrimination in the US using a method similar to that employed by Wright and Ermisch (as described earlier). The "unexplained" wage gap as measured in these studies lies between 51 and 87 per cent of the total wage gap. The results of those studies which excluded occupation as an explanatory variable (for reasons discussed earlier) and which included actual- rather than "potential" or "imputed"- work experience, are the most comparable with those of Wright and Ermisch. Two such studies are included by Blau and Ferber and, on average, they report 56 per cent of the overall wage gap as "unexplained"- a slightly higher figure than that reported in the UK study.

The US is one of the few countries which have observed continued reductions in their wage gaps throughout the 1980s. These further reductions were predicted by O'Neill on the basis of evidence of increases in work experience levels among younger women and in female relative to

male college enrollments at the end of the 1970s. The OECD attributes much of the reduction in the last decade to decreases in the level of occupational segregation. Although much legislation has been directed towards the reduction of both occupational segregation and the wage gap in the US over the last 25 years the extent of its impact in actually reducing the two remains in doubt and is discussed in more detail in Chapter 6.

2.4 Theories of labour market discrimination

A major element of the concern about differences between average male and female wages is that a part of the difference may be due to direct or indirect discrimination. A number of theoretical models have been advanced to explain how discrimination can arise and persist in the labour market. Here we draw extensively on Cain's (1986) review of this literature, which in turn builds on Becker's (1971) pioneering work in this field. Becker's work was focused on the question of racial discrimination, but many of the elements of the models he considered are also relevant to the study of sex discrimination.

One potential source of discrimination is a prejudice on the part of consumers. Becker models this as a "taste for discrimination", which reduces the price the consumer is willing to pay for the output of the disfavoured group. Even if most consumers have such prejudices, competitive forces would tend to equalise wages between equally productive workers. Some degree of job segregation would result, with workers who were the target of prejudice becoming concentrated in jobs that did not have customer contact, or contact only with customers who did not share the prejudice.

Similarly, Becker models prejudice on the part of workers as an increase in the wages they demand to work with the disfavoured group. Again, it can be argued competitive forces would tend to lead to segregation, rather than an outcome in which the wage for equally productive workers was different. Prejudice on the part of employers is modelled as a reduction in the wage they are prepared to pay to members of the disfavoured group. Intuitively it is clear that members of that group would tend to work for the least prejudiced employers; and that such employers would gain a cost advantage. In a competitive market, under constant returns to scale, such employers would maximise profits by expanding production and drive more prejudiced firms out of business. Ultimately, it could be expected that unprejudiced employers emerge and

replace prejudiced employers. Persistence of discrimination might then be explained by violations of the constant costs assumption, or by monopolistic elements.

Monopoly power in a product market does imply that competitive forces will not drive the firm out of business; but it does not imply a corresponding power in the labour market. If a monopoly cannot affect wages in the labour market, Cain argues that it would not be profit-maximising for it to pay a higher (lower) wage to a favoured (disfavoured) group of workers. A prejudice against a group would again tend to lead to a segregated workforce instead. Regulated or public monopolies could pay higher wages to a favoured group, but Cain argues that the concern of even these monopolies with their public image limits the extent to which this is likely to explain discriminatory outcomes.

The existence of monopsony power in the labour market (a situation in which one firm, or a group of colluding firms, act as a single buyer of labour) could make certain forms of discrimination profitable. In particular, groups with a less elastic supply of labour to the firm would tend to receive lower wages. However, in the context of male-female wage differentials, the fact that female labour supply is typically more elastic is seen as limiting the importance of this explanation of discrimination. On the other side of the labour market, it can be argued that the ability of unions to raise wages above competitive levels could give rise to discriminatory outcomes. But it is also possible that union power can tend to narrow the gap between the wages of favoured and disfavoured groups, as shown by Ashenfelter's (1972) study.

Models which explicitly recognise the existence of uncertainty regarding individual workers' productivity levels imply that some individual workers wages will be above their productivity and others below. But this does not imply that there will be discrimination against a particular group. Some models involving higher costs to the disfavoured group of signalling the extent of their productivity can generate such outcomes. The empirical relevance of these models depends to a large extent on limitations in the way in which productivity signals can be given.

Overall, Cain's assessment stresses the limitations of the existing theories purporting to explain discrimination. It also points to the need to confront the theoretical models with relevant empirical evidence, and the need to draw on the insights provided by historical case studies and approaches which highlight the institutional features involved.

2.5 Conclusions

Attempts to decompose the wage gap, such as those described above, are extremely useful in aiding our understanding of its nature and behaviour. Studies from various countries show that it is possible to decompose the wage gap into differences in productivity-related characteristics and a residual which is often used, despite its drawbacks, as the best available estimate of labour market "discrimination". It is important, however, to recognise these drawbacks in order to guard against faulty interpretations of the analyses.

The estimates of the level of "discrimination" based on this approach cannot be safely regarded as either an upper or a lower bound. It is clear, for example, that productivity-related characteristics may themselves be influenced by labour market discrimination. To the extent that there is direct discrimination in wages, this will have effects on women's investment in human capital (via education, training and labour market participation), which will in turn tend to widen the wage gap. Direct discrimination in terms of access to training may also occur, and would also tend to widen the wage gap. These factors would imply that the "residual" would underestimate the true impact of labour market discrimination on the wage gap.

On the other hand, it is argued that the residual is in fact more accurately considered a "measure of ignorance" (Mincer, 1985). The residual will contain not just a measure of the effect of discrimination, but also of any relevant productivity-related characteristics which are not included in the particular data set (as well as any measurement errors). To this extent use of the residual as an estimate of discrimination can lead to an over-estimation of the effects of discrimination. It has been pointed out, however, that some unmeasured factors could also work in the opposite direction. These problems are all significant ones, and must be borne in mind when analyzing any attempted decomposition of the wage gap. One interpretation of the residual would see it as an upper bound on the degree of *direct* discrimination. Direct discrimination is probably of greatest interest from a policy point of view, since its elimination or reduction will also tend to reduce the indirect effects; the rationale for policies addressing the effects of indirect discrimination, rather than its causes, is much less clear.

The attempts to decompose the wage gap described above cannot totally explain the differences in the behaviour of the wage gap in different countries. They do show, however, that not only the size, but also the composition of the wage gap varies from country to country, and that

different factors appear to be more significant in influencing its reduction in different places. Wright and Ermisch, for example, point to the contribution of the decline in the level of gender discrimination to the decrease in the overall UK wage gap in the 1970s and suggest that anti-discrimination legislation may have been effective in influencing this decline. In Sweden also the reduction of the overall wage gap was accompanied by a decline in the residual measure of discrimination, although in the Swedish case the decline is more likely to reflect structural changes in the labour market and union policy than legislation. US studies tend to emphasise the importance of changes in productivity-related variables, but leave room for the influence of discrimination.

The sources of discrimination, and explanations for its persistence, have been the subject of considerable theoretical research. Cain's (1986) assessment stresses, however, that empirical support for many of the theoretical models is quite limited. Institutional and historical case studies can provide additional insights into the processes at work.

The impact of anti-discrimination legislation in influencing the reduction of the wage gap is often unclear. The Swedish case proves that a decline in the residual measure of "discrimination" cannot automatically be attributed to legislation, while the US wage gap has been relatively constant over a 25 year period during which extensive legislation was put in place. A more detailed review of the international evidence of the impact of legislation will be presented in Chapter 6. Chapter 4 will provide a decomposition of the Irish wage gap using the methods which have become standard in the international literature.

Chapter 3

MEASUREMENT OF WAGE DIFFERENTIALS IN IRELAND

3.1 Introduction

Previous research on male-female wage differentials in Ireland has been hampered by a lack of suitable data. Blackwell's (1986) analysis was based on two main sources: statistics on the earnings of industrial workers regularly published by the Central Statistics Office, and statistics on the structure and distribution of earnings for 1974 and 1979 published by Eurostat. The CSO's regular series concentrates on the earnings and hours of work of workers in industry. It excludes agriculture, building and construction, public administration, retail and wholesale distribution, finance, and professional and personal services. Overall, about one-third of all employees are to be found in industry; but only about one-fifth of all female employees. Furthermore, the average industrial earnings series, which has been used to derive the male-female wage ratios examined in Chapter 2, does not include all employees in industry: only "industrial workers"¹ are included. Information on clerical and managerial staff has only been published in recent years.

The statistics available from this source have further limitations from the point of view of analysis of wage differentials. They provide a classification by category of industry, but not by occupational status. Thus, variations in the ratio of male to female wages across industries, or over time, may be due to shifts in occupational status within industries.

The other main sources of data on male-female wage differentials were the Surveys of the Structure and Distribution of Earnings, undertaken in 1974 and 1979. The 1974 Survey covered only wholesale and retail distribution, banking and insurance; the later Survey also included industry. Thus, the 1979 Survey offered fuller coverage than the CSO's regular series; but it still excluded almost two-thirds of employment in the total services sector, in which much female employment was concentrated.

¹Industrial workers include operatives, maintenance workers, storekeepers, packers, cleaners, basic supervisory staff and apprentices.

This chapter presents a picture of male-female wage differentials based on a more recent and more comprehensive data source: the ESRI Survey of Income Distribution, Poverty and Usage of State Services. The nature of the Survey is outlined in the next section, concentrating in particular on the features relevant to the comparison of male and female hourly wage rates. Relevant checks on the reliability of the data are also reported. The size of the overall wage gap between women and men for this more comprehensive data source, and the variation in the wages and gender wage gaps by characteristics of jobs (occupation, industry) and job holders (age, education level, full-time or part-time working, marital status) are reported in Section 3.3.

3.2 Description of the Data

The Survey of Income Distribution, Poverty and Usage of State Services was conducted by the ESRI in 1987. A detailed description of the nature of the sample, the methods employed, and the information gathered is given in Callan, Nolan *et al.* (1989); here we simply outline the main features, concentrating on those most relevant to the analysis of gender wage differentials.

The sampling frame was the Electoral Register, from which a sample of names and addresses was drawn, using the RANSAM program. This gave each individual on the Register an equal probability of selection (see Whelan 1979): larger households were therefore more likely to be chosen, but a post-sample weighting procedure was designed to take this into account.

Interviews were obtained from a total of almost 3,300 households, representing an effective response rate² of 64 per cent; this is comparable with the response rate obtained in the CSO's Household Budget Survey. In order to correct for possible biases introduced by the pattern of non-response, as well as the fact that the initial selection would tend to over-represent large households, the sample was re-weighted using information from the 1986 Labour Force Survey. Detailed tabulations kindly supplied by the CSO allowed a reweighting on the basis of a four-way crosstabulation: number of adults in the household, urban versus rural location, and the age and occupation of the head of household. Reweighting of the sample ensures that it represents the distribution of the

²The CSO's term for the response rate calculated on the basis of the number of households which were contacted: households which could not be contacted, mostly because they had moved, or the person selected was in an institution or had died, are excluded from the calculation.

population of households over the cells in this four-way classification in the same way as the 1986 Labour Force Survey. Independent checks on the reliability of the data in other dimensions are then possible; results of these checks will be reported later in this section.

The questionnaires used in the Survey gathered information on a wide range of topics. From the point of view of the present study, the most important items of information are those pertaining to the labour market activity of individuals, and their personal characteristics. For individuals aged 15 and over, who were not in full-time education, a detailed individual questionnaire included questions on current labour market status, current earnings and other income, occupation and industry, highest educational qualification achieved and labour market experience since leaving education. For those who were currently employees, detailed information on current gross earnings, deductions and net earnings were obtained. If usual pay differed from pay in the last pay period, information on usual gross and net pay was requested. The number of hours usually worked was also requested, with overtime hours identified separately. For workers paid weekly, the questionnaire also asked for the total number of hours worked in the last week.

Hourly wage rates are calculated for the present study on the basis of usual pay and usual hours worked including overtime. Where this is not possible, an hourly wage rate calculated on the basis of the most recent pay and hours worked in the past week is used instead.³

For some individuals it was not possible to obtain responses to the full individual questionnaire; for example, when the individual was away from home during the period of the interviewing, or did not wish to complete the full questionnaire. In those circumstances, an abbreviated questionnaire was completed instead, with responses being provided either by the individual concerned or by another household member. This questionnaire was used to obtain basic information on labour market status, usual earnings (gross and net) and usual hours of work, occupation and industry, and the highest educational qualification achieved.

³The issue of overtime earnings is discussed further at the end of Section 3.3.

The reliability of the ESRI Survey data can be checked by comparing independent control totals or distributions (e.g., the distribution of population over age categories from the Census of Population) with predictions based on the reweighted ESRI Survey data. A wide range of such checks has already been performed, confirming the representativeness of the Survey in terms of:

1. Age distribution of the population
2. Distribution of households classified by number of members at work;
3. Distribution of households classified by number of members unemployed;
4. Distribution of entitlements to health services in 1987 (medical cards, hospital services cards and others)
5. Number of recipients and expenditure on major social welfare schemes
6. Income tax paid by the PAYE sector

This battery of checks supports a high level of confidence in the reliability of the Survey, not only in terms of its representation of general demographic and socio-economic characteristics, but also in terms of employee pay which is of particular importance to this study.

The representativeness of the data on the employee population in terms of its distribution by age and sex, and by occupation and industry, has been examined by Nolan's (1993) study of low pay. The distribution of employees by age and sex was compared with results from the 1986 Census of Population. Table 3.1, reproduced from Nolan's study, shows that estimates based on the 2,800 employees in the ESRI sample closely resemble the Census figures. Women account for 38 per cent of all employees in the Census, and 36.6 per cent of all employees in the ESRI sample. The one discrepancy which may reflect a bias in the sample estimates is the underestimation of the number of employees in the youngest age bracket, aged 15 to 24 years: this may be due to the difficulties in obtaining responses from young single persons living in flats, and the deficiencies of the Electoral Register as a sampling frame for this sub-population.

Table 3.1: *Employees by Sex and Age Group: ESRI Survey and 1986 Census of Population*

Age range	Male		Female		Total	
	ESRI	Census	ESRI	Census	ESRI	Census
	<i>Percentages of all employees</i>					
15-24	11.3	13.9	13.0	14.3	24.3	28.2
25-34	22.0	18.6	12.9	12.2	34.9	30.8
35-44	13.8	14.0	4.9	5.2	18.7	19.2
45-54	10.3	9.2	3.4	3.6	13.7	12.8
55-64	5.8	5.6	1.9	2.2	7.7	7.8
65 & over	0.3	0.6	0.5	0.5	0.8	1.1
Total	63.4	61.9	36.6	38.1	100.0	100.0

Source: Nolan (1993).

Nolan performs a similar analysis of the distribution of employees by occupation, and by industry, comparing the ESRI Survey results with those from the 1987 Labour Force Survey. The ESRI Survey shows a somewhat higher proportion of "producers, makers and repairers" than the Labour Force Survey; and in the industrial classification, it overrepresents production industries and public administration at the expense of professional services and building. Overall, however, it appears that the ESRI sample reflects the industrial and occupation composition of employees quite well.

The accuracy of the self-reported earnings data is of particular importance for the present study. Nolan shows that Survey data on average weekly earnings for workers in industry are in line with what would be expected from the CSO data on Industrial Earnings, when account is taken of the fact that CSO figures exclude small establishments where wage levels would be expected to be somewhat lower.

3.3 Male-Female Wage Gap: Aggregate and Disaggregated Analysis

Since the ESRI Survey allows the calculation of hourly wage rates for men and women in a much wider range of industries and occupations than has hitherto been possible, we look first at some aggregate figures based on this comprehensive data set. Table 3.2 compares the results from the ESRI dataset with those from the CSO statistics on Industrial Earnings and Hours Worked at the same time.

Table 3.2: *Average Hourly Earnings of Men and Women: Industrial Workers (CSO) and All Employees (ESRI), 1987.*

	(1) Women Average hourly earnings	(2) Men Average hourly earnings	(3) F/M Ratio (1)/(2)
CSO: Industrial workers in industry	£3.59	£5.31	67.6
ESRI ¹ : All employees	£4.27	£5.33	80.1

Sources: *Irish Statistical Bulletin*, December 1990 and ESRI Survey 1987.

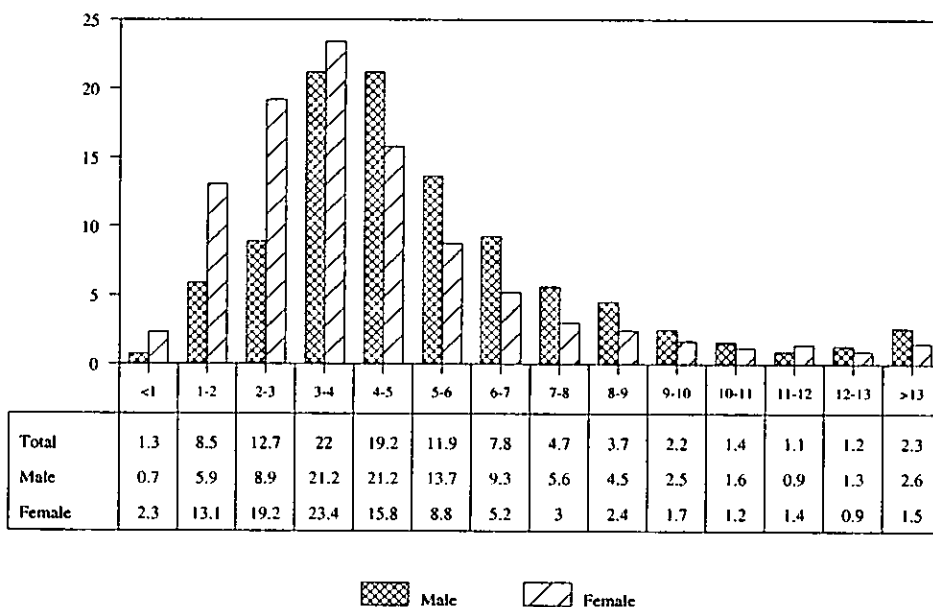
Note: 1. The ESRI estimates are based on a sample of 2,763 employees.

It was noted in Chapter 2 that, for several reasons, the economy-wide wage gap between men and women might differ from the wage gap between production workers in industry. Table 3.2 illustrates this point quite strikingly. The average wage of men in all occupations and industries, estimated from the ESRI Survey, is found to be almost identical to the hourly earnings of male production workers in industry.⁴ But hourly earnings for women in other industries and occupations are found to be significantly higher than for female production workers in industry. Average hourly earnings of all women employees taken together are about 19 per cent higher than those for female production workers in industry. As a result, the gap between the average hourly earnings of all women is 12.5 percentage points less than the gap between male and female production workers. Fundamentally, the lower gap in the economy-wide figures from the ESRI data reflects the fact that women with relatively high wages are more likely to be found in the non-industrial sector (for example, as teachers) while the industrial sector includes more of the top of the male wage distribution (such as skilled manual workers).

Figure 1 illustrates how the average wage gap in the ESRI sample arises. The graph shows higher proportions of women at the lower wage rates (less than £4 per hour), whilst at the higher wage rates there are proportionately more men than women.

⁴Average earnings of male and female workers in industry in the ESRI data are close to published CSO statistics, so that an explanation of the difference between ESRI figures and CSO figures must concentrate on the non-industrial sector.

Figure 1: Distribution of Wage Rates for Men and Women
 Percentage of Male/Female Employees at each level of Average Hourly Earnings



Note: Horizontal axis measures average hourly earnings at intervals of £1.00.

The ESRI Survey results can be disaggregated to show how male and female wages, and the ratio of women's to men's wages, vary with different characteristics. While the overall sample sizes are substantial (almost 1,800 men and over 1,000 women employees), it is inevitable that this process will lead to rather small sample numbers in particular cells. In order to guard against over-interpretation of data based on small numbers, no results are reported if they would be based on less than 25 cases; while an asterisk is used to denote results based on between 25 and 50 cases.

It is important to realise that the overall female-male wage ratio reported at the bottom of each table is *not* a weighted average of the wage ratios for each sub-section of the population. Rather the overall wage *levels* reported on the bottom line of each table are a weighted average of the average *wages* in each subsection.⁵ The overall female-male wage ratio is the ratio between these two overall average wage levels.

⁵Hence the overall female wage is a weighted average of the wages reported for each category, with weights equal to the proportion of female employees in each category. The overall male wage is, similarly, a weighted average of the wage in each sub-section of the population of male employees, with weights equal to the proportion of males in each sub-section.

The reason why the overall wage ratio is not simply a weighted average of wage ratios for the different categories can be seen clearly in Table 3.3, which shows how men's and women's wages vary with age, and how male and female employees are distributed over the age categories. For both men and women, wages rise with age until the middle age-bracket (35-44); men's hourly earnings then plateau, while women's hourly earnings dip and then peak. But the most striking feature of the table is that the gap between men's and women's wages is much lower when age is taken into account.⁶ This arises from the fact that female employees tend to be concentrated in the youngest age groups, who tend to have lower wage rates irrespective of sex.⁷ These younger age groups will, therefore, be more heavily weighted in calculating the average female, than the average male, wage rate. In effect, the overall wage gap is comparing the wages of younger women with those of older men.

Table 3.3: *Average Hourly Earnings of Men and Women Classified by Age Category, 1987*

	(1) Women Average hourly earnings	(2) Men	(3) Women % in age category	(4) Men	(5) F/M Ratio (1)/(2)
15-24	£3.03	£3.25	36.1	17.8	93.2
25-34	£4.79	£5.16	34.8	34.8	92.8
35-44	£5.36	£6.26	13.4	21.7	85.6
45-54	£4.84	£6.22	9.4	16.1	77.8
55-64	£5.89	£6.20	5.0	9.2	95.0
All Ages	£4.27	£5.34	100	100	80.0

Source: ESRI Survey 1987.

Notes: A small number of cases aged 65 plus are included in the "all ages" category.

⁶For the two youngest age groups, which include about 70 per cent of women employees, the average gap between men's and women's wages is less than 8 per cent.

⁷It can be seen from the table that 71 per cent of female employees compared with only 52 per cent of males were concentrated in the two youngest age groups, which tend to have lower wages irrespective of sex.

It is of interest here to consider what underlies the relatively higher wage ratios in the lower age groups. Is it simply that a higher proportion of these women are single, childless and have uninterrupted labour market experience? Or is there a generational difference between the two groups - e.g., in educational levels, occupations or labour market attachment - which would suggest that these higher wage ratios might in time be observed at all age levels? Unfortunately, in the absence of longitudinal data, it is impossible to track changes in the wage ratio as more recent cohorts move into the older age groups and hence this question cannot be conclusively answered, although an examination of the characteristics of the different age groups does provide some clues.

Table 3.4: *Ratio of Female to Male Average Hourly Earnings Classified by Age and Marital Status, 1987*

Age	<i>Married</i>	<i>Other</i>
	<i>Female to male wage ratio: per cent</i>	
15-24		95
25-34	92	98
35-44	85	109*
45-54	70	
All Ages	82	97

Source: ESRI Survey 1987.

Notes: "Other"= Single, widowed or separated.

* denotes an estimate or one element of a ratio based on fewer than 50 cases.

Estimates based on less than 25 cases are not reported.

In the youngest age group, for example, 93 per cent of women and 94 per cent of men are single. As one would expect, the proportion of both sexes who are married increases with age, with 62 and 71 per cent of females and males respectively in the 25 to 34 year-old age group, and 70 and 86 per cent of males and females respectively in the 35 to 44 year-old age group married. Table 3.4 shows the female to male wage ratio, classified by marital status, at each age level. Of most interest here is the difference between those in the 25 to 34 and 35 to 44 year-old groups. The

wage ratio amongst married people falls by 7 percentage points between these two groups. The lower wage ratio in the older age group may be closely related to the level, extent and degree of continuity of labour market participation. It is possible that there is a stronger degree of labour market attachment in the younger age cohort. If so, then wage ratios might be expected to increase in the older age groups as the younger cohorts move into them. But alternative explanations of these results, which would not lead to this conclusion, are also possible. It may be, for example, that child-related reductions in labour market attachment, or limited opportunities for part-time work compatible with child-rearing, become more dominant in the older age group.

Table 3.5: *Average Hourly Earnings of Men and Women Classified by Length of Work Experience, 1987*

	(1) Women Average hourly earnings	(2) Men Average hourly earnings	(3) F/M Ratio (1)/(2)
Less than 5 years	£3.10	£3.30	93.9
5 to 15 years	£4.54	£5.21	87.1
15 to 25 years	£5.17	£6.17	83.8
25 to 35 years	£6.39*	£6.09	104.9
More than 35 years		£6.21	
All Experience Levels ¹	£4.44	£5.58	79.6

Source: ESRI Survey 1987.

Notes: 1. The estimates in this table differ slightly from those presented in other tables; this is because they are based on 2,055 cases for which data on experience are available.

* denotes an estimate based on fewer than 50 cases.

In light of the tendency for female labour market participation to be interrupted, it is perhaps of more relevance to examine wage ratios taking actual labour market experience rather than age into account. Table 3.5 shows a wage ratio of almost 94 per cent amongst males and females with less than 5 years labour market experience. From this point on, male wages grow faster with experience than those of females, causing wage ratios to decline steadily. It is important to note here, however, that the survey data do not allow account to be taken of the timing or duration of employment interruptions and thus a straightforward interpretation of the data as indicating unequal rewards for identical levels of experience should be

avoided. The jump in the wage ratio to over 100 per cent amongst those of between 25 and 35 years experience should also be interpreted with caution as there are only 44 women contained in this sample group.

What is clear from the table is that the wage gap at each experience level is smaller than the total wage gap. Furthermore, 72 per cent of the women in the sample had less than 15 years labour market experience, compared with only 40 per cent of males. As wage rates tend to be lower for both sexes in these two lowest experience groups, this has the effect of pulling the overall wage ratio downwards.

Table 3.6: *Average Hourly Earnings of Men and Women Classified by Level of Education, 1987*

	(1) Women Average hourly earnings	(2) Men Average hourly earnings	(3) F/M Ratio (1)/(2)
No Secondary Qualifications	£3.03	£4.47	67.8
Group/Intermediate Cert	£3.18	£4.53	70.2
Leaving Cert/Leaving+Diploma	£4.30	£5.82	73.9
University Degree	£8.30	£9.48	87.6
All Education Levels	£4.27	£5.35	79.7

Source: ESRI Survey 1987.

Table 3.6 shows a steady decrease in the size of the wage gap as levels of education increase. Wage ratios for all levels of education below university level are below the average. The average hourly earnings of university graduates of both sexes are significantly higher than those at all other levels of qualification, however, hence the high wage ratio at this level serves to raise the overall wage ratio considerably, in spite of the fact that graduates account for only 10 per cent of the sample.⁸

⁸9.1 per cent of the male sample; 11.4 per cent of the female sample

Table 3.7: *Average Hourly Earnings of Men and Women Classified by Occupation, 1987*

	(1) Women Average hourly earnings	(2) Men	(3) F/M Ratio (1)/(2)
Producers, makers & repairers	£3.36	£4.71	71.3
Transport, communication & storage workers	£3.48*	£4.45	78.2
Clerical workers	£4.06	£6.27	64.8
Commercial, insurance & finance	£2.69	£4.69	57.4
Service workers	£2.81	£4.85	57.9
Professional & technical	£7.32	£8.80	83.2
Others ¹		£7.20	
All Occupations	£4.27	£5.33	80.1

Source: ESRI Survey 1987.

Notes: 1. Excluding workers in agriculture and building and construction.

* denotes an estimate based on fewer than 50 cases.

The distribution of wage rates by occupational category (Table 3.7) shows that in most of the broad occupational groups the wage gap is *larger* than the average for all occupations. This suggests that, of itself, the distribution of men and women across occupational groups does not explain much of the average differential between men and women: most of the differences occur *within* each broad occupational group. Analysis of a more detailed occupational classification, distinguishing between 21 occupational groups, finds quite similar results to those reported here. The distribution over 21 occupational groups does not contribute to an explanation of the overall wage gap; once again, most of the differences occur within these occupational groups.

While these simple crosstabulations based on occupational groupings do not take account of the other factors influencing wages (such as the individual's experience), they are helpful in guiding further investigation of the idea that the male-female wage gap reflects the concentration of female employees into a relatively small number of sex-segregated occupations. They suggest that this thesis would only be likely to hold on the basis of a very fine occupational classification. The finest classification available in the Survey is the CSO's classification into 213 detailed occupational groupings, as used in the Census of Population. The sample

size does not permit a detailed analysis on the basis of the full classification, but some of the issues and problems arising from its use are illustrated in Table 3.8.

Table 3.8: *Detailed Breakdown of Clerical Occupations*

	(1) Women Number in sample	(2) Men	(3) Wage ratio %
Typists and key-punch operators	80	2	*
Bookkeepers, cashiers and related workers	67	26	83
Computing machine operators	13	4	*
Clerical workers NES.	124	45	67
Clerical supervisors	16	6	*

Source: ESRI Survey 1987.

Note: * no estimate reported because of low sample numbers.

The low numbers of male typists are likely to make it difficult to obtain a reliable estimate of the male-female wage ratio in this occupation, even with a much larger sample. This is likely to be a problem in a number of detailed occupational categories. But even where sample numbers appear to be sufficient to warrant calculation of a ratio, we find that significant gaps between average male and female wage rates can remain. Within the residual category for clerical workers, for example, we find that the average female wage is about two-thirds of the average male wage. But this category includes, for example, both the Clerical Assistant and the Clerical Officer grades in the civil service. Further refinement of the occupational classification could be expected to reduce the gap between average male and female wages within detailed groups,⁹ though differences due to other sources (such as length of experience) might remain.

This line of analysis, if sample size were sufficient to permit it, would help to clarify the nature of the observed gap between male and female wages. But it is focused rather narrowly on whether the limited goal of equal pay for identical jobs is being achieved. If, in addition, we wish to answer questions regarding equality of opportunity, however, the inclusion

⁹For example, for the small numbers of male and female computer machine operators, average pay is very similar.

of such a fine level of detail on occupations is not appropriate. Occupational attainment, especially within a very finely detailed classification, may reflect discrimination within or outside the labour market, as well as voluntary choices. Analysis which includes a fine level of occupational detail may "explain" the gap between men's and women's wages by reference to an occupational structure which includes the effects of discrimination. However, the occupational structure is not *solely* determined by discriminatory factors: it does also include the effects of personal choices. If occupational structure is entirely excluded from the analysis, no account is taken of the effects of such personal choices on wages and wage differentials. The difficulties posed by this dilemma are taken up again in Chapter 4.

Table 3.9: *Average Hourly Earnings of Men and Women: Full-Time and Part-Time Employees, 1987*

	(1) Women Average hourly earnings	(2) Men Average hourly earnings	(3) F/M Ratio (1)/(2)
Full-time ¹	£4.21	£5.31	79.3
Part-time ¹	£4.52	£6.42*	70.4

Source: ESRI Survey 1987.

Note: 1. Part-time workers are defined as those working less than 30 hours per week; except that teachers who report 24 or more hours of work per week are regarded as full-time. UK evidence suggests that this is close to what would be found as self-reported answers to a question on part-time versus full-time working.

It is sometimes argued that hourly pay rates for part-time working will tend to be lower, other things being equal, than for full-time work, as the result of both supply and demand factors. With almost 20 per cent of the women sampled working part-time, compared with only 3 per cent of men, this thesis is clearly of relevance to the analysis of overall wage differentials. The aggregate picture of wages in full-time and part-time employments presented in Table 3.9 above lends no support to this contention, however: both men's and women's hourly earnings in part-time work appear to be higher than in full-time work on average. It should be borne in mind, however, that the condition that other things be held equal is not being met in this simple crosstabulation.

Table 3.10: *Average Hourly Earnings of Men and Women: Full-Time and Part-time; Teachers and Non-Teachers, 1987*

		(1)	(2)	(3)
		Women	Men	F/M
		Average hourly earnings		Ratio (1)/(2)
Non-Teachers	Full-Time ¹	£3.81	£5.21	73.1
	Part-Time ¹	£3.41	£4.61*	74.0*
Teachers	Full-Time ¹	£8.84	£9.57*	92.4*
	Part-Time ¹	too few	too few	too few

Source: ESRI Survey 1987

Notes: 1. As defined in Table 3.9.

* denotes an estimate or one element of a ratio based on 25 to 50 cases.

The average hourly earnings of part-time teachers appear to be particularly high, and despite the small numbers involved, this does affect the overall part-time/full-time comparison. It could be argued that the high hourly earnings figures for teachers are due, in part, to measurement error. If some teachers tend to report lower hours because they take less account of time spent in the preparation of classes and the correction of written work, this will cause their average hourly earnings (calculated by dividing their reported usual earnings by their reported usual hours of work) to be biased upwards. The picture of high hourly wages for teachers is not without foundation, since the profession has longer holidays than most occupations. However, in order to guard against possible bias from variation in the reporting of hours by teachers, we present results for teachers and non-teachers separately. The results for non-teachers show that male and female part-time workers have lower average hourly earnings than their full-time counterparts, by about 10 per cent. The female to male wage ratio, however, is approximately equal for non-teaching part-timers and full-timers.

The differing extent of overtime working among men and women could also contribute to the observed gap in wage rates as measured here. Even if basic rates of pay were identical across the sexes, men would tend to get higher average wage rates if they were engaged in more overtime. We explored this issue using the data in the Survey, which identified overtime hours separately from regular hours. There was, as expected, a greater incidence of overtime earnings for male workers. To assess the extent to which this could explain differences in average hourly earnings between men and women, we sought to estimate "basic" wage rates for

individuals reporting overtime hours. In order to do so, it is necessary to make some assumption regarding the overtime rate of pay. Assuming a rate of time-and-a-half, we find that adjusting for overtime accounts for less than 1 percentage point of the difference between male and female wages. Even if we assume that all overtime is paid at double-time, the extent to which it accounts for the observed wage gap is not much over 1 percentage point.

3.4 Conclusion

This chapter noted the data constraints under which previous Irish research on gender wage differentials operated. The advantages offered by the more recent and more comprehensive ESRI Survey of Income Distribution, Poverty and Usage of State Services were then outlined. It obtained information from about 3,300 households, containing around 2,800 employees. The relevant labour market data were described. The reliability and representativeness of the Survey, in the context of labour market studies such as the present one, was discussed. The sample appeared to represent employees adequately in terms of age, sex, industry and occupational classifications as well as average earnings; the tax take from the PAYE sector also appears to be well predicted by the sample, suggesting that the distribution of earnings is also representative.

The broader coverage in the ESRI Survey results in a narrower gap between the sexes than figures for production workers in industry would suggest. The gap for all employees, estimated using the ESRI Survey, is 20 per cent of men's average hourly earnings; some 13 percentage points lower than the figure for production workers.

The distribution of hourly earnings by sex and age category also shed new light on the nature of the aggregate wage gap. Wages tended to rise with age until the middle age-bracket (35-44), with no trend towards increase or decline thereafter. The gap between men's and women's hourly earnings was less than 8 per cent of men's hourly earnings in the youngest age groups (15-34). But these age groups accounted for about 70 per cent of women's employment. Thus, the aggregate wage gap is partly reflecting a comparison of the wages of younger women with those of older men. A crosstabulation of hourly earnings by sex and marital status corresponded closely with this age-based analysis. Average hourly wage rates for non-married women and men (mostly young and single) were almost identical; but there was still a gap of about 20 per cent between the wage rates of married men and women.

Chapter 4

DECOMPOSITION OF WAGE DIFFERENTIALS

4.1 Introduction

The persistence of sizeable male-female earnings differentials despite the introduction of a range of anti-discrimination measures has been a focus of concern in many countries. A natural first step in analysing the persistence of such overall differentials is to decompose the wage gap into portions due to differences in characteristics (such as education and experience) and a residual, possibly attributable to discrimination. There are many such studies in the international literature; Chapter 2 reviewed the results for a selection of countries.¹ Irish studies on this topic, however, have been few in number and somewhat limited in scope. All past studies for Ireland have been based on surveys of rather special populations: Walsh and Whelan (1976) analysed a sample of redundant workers; Reilly (1987 and 1990) examined differentials in the youth labour market; while Ruane and Dobson (1990) analysed the academic labour market. Until recently, an analysis of a more representative sample has not been possible because of the lack of suitable data. The data gathered in the ESRI Survey of Income Distribution, Poverty and Usage of State Services, which included detailed information on the employment, education and earnings of both men and women, make it possible to fill that gap.

In this chapter, a decomposition of the total wage gap is undertaken for all male and female employees in the ESRI Survey. Separate analyses are also included for married and non-married sub-samples. The basic methods are set out, and the results of previous research on the Irish situation are reviewed in Section 4.2. The full empirical specification and data used in the present study are outlined in Section 4.3. The results are presented and discussed in Section 4.4. A detailed study of the wage gap for the married sub-sample, was also undertaken (Callan, 1991). It addressed a number of issues which are of particular concern in that context, including the self-selection of women into the paid labour force. The analysis of the more comprehensive sample undertaken here builds on that earlier analysis. Section 4.5 summarises the main results from that

¹For a recent, general review of this literature, see Gunderson (1989).

earlier study, including some comparisons with the work of Wright and Ermisch (1991) in the UK. The concluding section draws together the main findings.

4.2 Methods and Previous Research

The basic intuition behind the standard procedures for analysis of the male-female wage gap can be explained quite simply. Looking at male and female employees separately, relationships between hourly wages and personal characteristics (such as length of work experience and educational qualifications) are estimated. These relationships tell us how much an extra year's work experience adds to the hourly wage of an individual; and how much an educational qualification typically adds to the hourly wage of an individual, other things being equal. This information allows us to estimate the hourly wage that an average woman would earn if her attributes were rewarded in the way as men's. The difference between the hourly wage that an average man currently gets, and the hourly wage that an average woman would get if her characteristics were rewarded in the same way as men's, can be explained by differences in their characteristics: length of work experience, years spent out of the labour market, educational qualifications and so on. The difference between the hourly wage that an average woman actually earns; and the hourly wage that she would earn if rewarded in the same way as men, cannot be explained by differences in measured characteristics. As noted in Chapter 2 this "unexplained residual" may be due to discrimination, though it could also be due to other factors not controlled for by the analysis.

An index based on the size of this residual can be constructed. It measures how much higher an average woman's hourly wage would be if her measured characteristics were rewarded in the labour market in the same way as men's. This is widely termed the "discrimination index", but the term "wage adjustment index" captures more precisely what the index measures: the extent of the adjustment to the average woman's wage which, on the basis of the sample and control variables used, would arise if her characteristics were rewarded in the same way as men's.² The wage adjustment index is not a precise measure of the true extent of discrimination, which may be higher or lower than this figure. If there is direct discrimination, in terms of lower wages for the same characteristics, this may have an impact on women's choices in terms of educational

²Cain (1986), in a survey of the economics of discrimination, takes a similar approach to the labelling of the measures used.

attainment and continuity of employment. Women may be less likely to invest in education and training, and more likely to leave employment, if their wages are lowered by discrimination. Thus, some of the differences in measured characteristics may be indirectly attributable to discrimination.

The wage adjustment index may, however, overstate the degree of direct discrimination. The measures of work experience typically used do not take into account the amount of on-the-job training or skill accumulation involved. But since women are more likely than men to plan to interrupt their labour market careers, it would be economically rational for women, on average, to engage in less on-the-job training or skill acquisition per year of employment.³ Thus, a higher rate of return for men's years of experience might reflect this factor, rather than direct discrimination. On this basis, the index might best be interpreted as an upper estimate of the degree of direct discrimination.

A further complication arises because the measured characteristics do not fully explain the variations *within* the male and female groups. While the degree to which measured influences explain the within-group variation depends on the particular dataset, the existence of a substantial unmeasured influence on wages is common to all datasets. It is possible, therefore, that men's and women's unmeasured characteristics differ in ways which could help to explain the residual. In this case, the wage adjustment index would overstate the extent of direct discrimination. On the other hand, men's and women's unmeasured characteristics, and the way they are rewarded, may result in an increase in the wage adjustment index.⁴

The "standard procedure" for analysis of the determinants of the male-female wage gap can be set out more precisely in econometric terms.⁵ First, wage equations are estimated for samples of individual men and women separately:⁶

³Similar considerations may also give rise to what is sometimes termed "statistical discrimination" by employers, in terms of access to employer-supported training - an issue considered in Chapter 6.

⁴The analysis in Section 4.5 illustrates such a possibility, by comparing results based on different explanatory variables.

⁵cf. Gunderson (1989), Wright and Ermisch (1991). The notation follows that of Wright and Ermisch.

⁶ w is the hourly wage rate, X a vector of characteristics such as educational levels and experience, and β the returns to those characteristics. Discussion of the precise specification of the vector of characteristics, X , is deferred until Section 4.3.

$$\log w_m = X_m \beta_m + \varepsilon_m \quad (1)$$

$$\log w_f = X_f \beta_f + \varepsilon_f \quad (2)$$

The average differential between men and women can then be expressed as:⁷

$$\overline{\log w_m} - \overline{\log w_f} = \hat{\beta}_m (\bar{X}_m - \bar{X}_f) + (\hat{\beta}_m - \hat{\beta}_f) \bar{X}_f \quad (3)$$

The first term on the right hand side represents that portion of the average differential which is explained by differences in average characteristics. The second term represents the portion which cannot be explained in those terms; this residual is due to differences in rates of returns to the characteristics. It is widely used to derive an index, often termed the "discrimination" index, but referred to here as the "wage adjustment index":

$$D_f = 100(\exp(\hat{\beta}_m - \hat{\beta}_f) \bar{X}_f - 1) \quad (4)$$

This index measures how much higher an average woman's wage would be if women's characteristics were rewarded in the same way as men's characteristics are currently rewarded.

As Wright and Ermisch point out, the index cannot be taken as either an upper or a lower bound on the extent of discrimination:

If women's employment interruptions are exogenous, then [the index] represents an upper bound on the degree of direct discrimination, because the *expected* interruption reduces women's investment in human capital *before the interruption*, both in education and on-the-job. As a consequence, the coefficients associated with education and work experience would be lower for women even if they earn the same returns on human capital as men...But as Weiss and Gronau (1981) show, when the length (and existence) of employment interruptions is endogenous, discrimination in pay induces longer labour force withdrawals (less work experience, more home time), creating a

⁷An alternative decomposition based on $\hat{\beta}_f(\bar{X}_m - \bar{X}_f)$ and $(\hat{\beta}_m - \hat{\beta}_f)\bar{X}_m$ yields similar results, unless otherwise indicated, to those reported here.

tendency for [the index] to understate the full effect of discrimination on earnings differences. (Wright and Ermisch, 1991, pp. 5-6)

Despite these *caveats*, the index is widely used; but it should be interpreted with caution, as noted by Wright and Ermisch. For that reason, it is referred to as the wage adjustment index, or simply D_r , in this chapter.

Walsh and Whelan (1976) analysed the difference between male and female *weekly* earnings along these lines, using a sample of redundant workers⁸. They found that less than 2 per cent of the total differential of over 50 per cent was due to differences in attributes. Thus, the implied wage adjustment index was itself above 70 per cent. However, the authors cautioned that the sample was not a representative one, so that inferences about the level of discrimination at national level could not be made.

Reilly (1987) analysed a sample of younger workers, where the observed wage gap was around 10 per cent. He found that about 30 per cent of this gap could not be explained by differences in attributes; the implied wage adjustment index of about 3 per cent was, although small, significantly different from zero. In a later paper (Reilly, 1990) it was shown that this aggregate index concealed quite large variations as between manual and non-manual occupations. There was no significant difference in the reward structures for manual occupations. But, depending on the method used to control for occupational endogeneity, the point estimate of the wage adjustment index for non-manual workers varied from 6 per cent (and significantly different from zero) to 16 per cent (but insignificantly different from zero).

In Ruane and Dobson's (1990) sample of academics, average male income was 23 per cent higher than average female income; their analysis showed that measured attributes accounted for about half of this difference, yielding an adjusted wage gap of about 11 per cent.

Each of the micro-level studies refers to a restricted sample (redundant workers, young workers or academics). US and UK results suggest that the size of the unexplained gap is lower in the academic market than in the wider labour market; and studies of the youth labour market cannot take into account either explained or unexplained effects associated with child-bearing and child-rearing in later years. Thus, the need for a more

⁸Marital status was used as a proxy to capture the effects of part-time working, which was, in any case, quite limited in its extent at that time, and concentrated disproportionately among married women.

general sample is clear. The present study provides estimates of the role of employment interruptions, differences in attributes, and differences in reward structures in the overall wage gap between men and women based on a general sample.

There have also been a number of more descriptive studies focusing on the role of average pay rates within industry and occupational categories in the overall male-female wage gap, particularly in the context of the low pay issue. A common interpretation of these studies is that high risks of low pay rates are found in a small number of broadly classified occupations and industries; and that women's employment is concentrated in these categories, whereas male employment tends to be in higher paying occupations and industries. A more accurate reading of the studies may be that this is true only when occupations are classified at a very detailed level. Blackwell's (1986) conclusion that "the fact that women are a small minority in employment at the higher occupational levels, and are overrepresented in relatively low pay segments of industry and in retail distribution has a powerful influence on their earnings relative to those of men, driving them lower", for example, is based on a very detailed occupational classification. While this approach is valuable in establishing the nature of the wage gap, it cannot be regarded as a full explanation. It may be legitimate to regard differences in broad occupational grouping as reflecting voluntary choices, but differences in occupational attainment, particularly at a highly detailed level, may reflect discrimination. Individuals may choose to become clerical workers rather than production workers; but it is much less likely that they choose to remain at lower-paid levels within their chosen occupational grouping, which is what the use of finer occupational detail as an explanatory variable would imply. The analysis in this chapter will suggest that the gap between male and female wage rates depends more on differences in pay *within* the broad occupational classification, and less on the distribution across the broad occupational classes, in contrast to a common interpretation of descriptive studies such as Blackwell (1986) and Nolan (1993).

4.3 Empirical Specification

Gunderson (1989) notes that the variables used to control for productivity-related differences in wages have varied quite widely from study to study. It is possible to distinguish between two broad approaches. The first of these may be called a strict "human capital" approach, which includes as control variables educational qualifications, labour market

experience, and time spent unemployed or out of the labour market. The second approach is distinguished by its inclusion of occupational and/or industry variables in its controls: it will be labelled the "occupational" model here, and variants may range from those which include only occupational dummy variables to those which include experience and/or educational qualifications as well.⁹

Given that occupational attainment is often linked to educational qualifications, but has other dimensions, each of these approaches can claim certain advantages. The narrower human capital models can claim to give better estimates of the returns to educational qualifications: when occupations are included the estimates of returns to education are biased downwards. But models which do not take account of differences in wages across occupations may lead to estimates of "discrimination" which reflect not differences in pay between men and women in similar jobs, but differences in pay for different jobs. Such differences may reflect differences in access to occupations, or differences in choices. Neither the human capital nor the occupational models has resolved this issue satisfactorily: the strict human capital model can be seen as producing an index which includes occupational differences as if they were due to enforced segregation, while the broader models including occupational dummies can be seen as producing estimates which treat occupational differences as if they were either justified by qualifications and experience, or due to voluntary decisions.¹⁰

Since neither model has a unique claim to our attention, two basic empirical specifications are used here. The first uses just the narrower human capital variables, together with some other, mainly demand-side controls (regional, occupational and industry-specific unemployment rates, a regional dummy for the capital city which includes about one-third of the Irish population, and an urban/rural dummy). The second includes only dummies based on the broad occupational groups used by the Central Statistics Office; in effect this also includes some key industry dummies.

The human capital model is applied to samples of all employees, married employees and non-married employees. The results of this analysis are discussed in Section 4.4. Both the human capital and occupational models are applied to the married sample. These results are

⁹Models which combine the human capital variables with occupational variables may often be described as human capital models: but this term is given a narrower interpretation here.

¹⁰For example, the model of Polachek (1981) suggests that women will choose occupations in which the rate of wage decline with respect to time spent out of the labour force are lower.

presented in Section 4.5. The coefficient estimates of the human capital approach are presented in some detail; the estimated wage adjustment indexes are then compared with those derived from the simple occupational model, and some composite models.

The data for the analysis is taken from the ESRI Survey of Income Distribution, Poverty and Usage of State Services, as described in Chapter 3, Section 3.2. The sample used in Section 4.4 consists of all employees for whom the relevant information was available. There are a total of 1,994 such individuals (1,215 men and 779 women). The married sub-sample contains 811 men and 329 women, while the non-married sub-sample contains 404 men and 450 women. The sub-sample used in Section 4.5 differs slightly, because it includes a focus on the participation decisions of married women; the main difference is that individuals aged 60 or over are excluded. The analysis is based on a sample of 324 married women employees and 783 married men; the analysis of married women's participation decisions is based on a total sample of 1,712 married women.¹¹

4.4 Results

One of the most striking results in Chapter 3 was that the wage gap between married men and married women was much greater than for those who were not married. Average wage rates for non-married men and women were very nearly equal; but the average wage rate for married women employees was about 20 per cent below that for men. The analysis here includes a distinction between employees who are married and others, in order to find possible explanations for this combination of circumstances.

The fact that data on work experience are needed for the present analysis means that some cases included in the tabulations in Chapter 3 cannot be included here. The sample used here includes only those individuals who provided answers to a full, detailed individual questionnaire: about 3 out of 4 employees in the ESRI Survey did so. The remaining employees, for whom more restricted information is available, tended to be young, single and living with their parents. As seen earlier, young single people tend to have relatively low wages, but a more equal balance between male and female wages. This leads to a higher wage gap

¹¹This employment rate is not far from the current national average for married women.

in the sample analysed here than in the overall sample. Table 4.1 sets out the wage gaps for the present sub-sample compared with those for the full sample used in Chapter 3. These differences must be borne in mind in interpreting the econometric results of this chapter.

Table 4.1: *Wage Gaps for Alternative Samples*

<i>Marital Status</i>	<i>Sample size</i>	(1)	(2)	(3)
		<i>All</i>	<i>Married</i>	<i>Not Married</i>
ESRI: full sample	2763	20	18	3
ESRI: econometric sample	1994	33	32	9

Memorandum item: Wage gap for industrial workers in industry (CSO) 32 per cent

Table 4.2 presents separate wage equations for all male and female employees, married men and married women employees, and other male employees and other female employees. All the equations are based on a "human capital" approach, with actual measures of years worked and years not worked by both men and women. The estimation method was ordinary least squares.¹²

The general pattern of the coefficient estimates in the wage equations for male and female employees is as expected. It is commonly found that wages increase with experience, but not in a strictly linear fashion. The inclusion of squared terms in experience allow for this possibility. The combination of coefficient estimates found means that the more actual work experience an individual has, the higher the wage he or she is able to command; but the effect of an additional year of work experience tends to decline over time. Time spent out of the labour market on the other hand, tends to depress the wage which an individual can command; this influence also declines over time. Higher educational qualifications are consistently associated with higher wage rates. For example, the predicted hourly gross wage for a woman with the average characteristics of a participant is about £2.80 if she has an Intermediate Certificate and £3.70 if she has a Leaving Certificate. These figures rise to £5.00 if she has a diploma or other third-level qualification, and £7.20 if she has a university degree.

¹²An alternative method taking into account married women's participation decisions is employed in Section 4.5, which also explores results based on potential rather than actual labour market experience.

Table 4.2: *Wage Equations for Men and Women Classified by Marital Status*

<i>Eqn. No.</i>	(1)	(2)	(3)	(4)	(5)	(6)
<i>Sample</i>	<i>Men</i>	<i>Women</i>	<i>Men</i>	<i>Women</i>	<i>Men</i>	<i>Women</i>
<i>Marital Status</i>	<i>All</i>	<i>All</i>	<i>Married</i>	<i>Married</i>	<i>Not</i>	<i>Not</i>
					<i>Married</i>	<i>married</i>
Years not worked/10	-0.31	-0.21	-0.47	-0.26	-0.34	-0.15
	<i>4.02</i>	<i>-3.06</i>	<i>-3.68</i>	<i>-2.96</i>	<i>-2.22</i>	<i>-1.18</i>
(YrsNotWorked) ² /1000	1.08	0.54	2.77	0.78	1.04	0.28
	<i>4.19</i>	<i>1.95</i>	<i>2.60</i>	<i>2.21</i>	<i>2.65</i>	<i>0.58</i>
Experience/10	0.63	0.71	0.37	0.54	0.70	0.69
	<i>20.3</i>	<i>14.5</i>	<i>6.70</i>	<i>5.27</i>	<i>11.6</i>	<i>10.5</i>
(Experience) ² /1000	-0.98	-1.32	-0.53	-0.88	-1.32	-1.30
	<i>14.9</i>	<i>-10.1</i>	<i>-5.20</i>	<i>-3.45</i>	<i>-9.35</i>	<i>-7.61</i>
Constant	0.63	0.35	0.99	0.65	0.67	0.28
	<i>10.8</i>	<i>4.01</i>	<i>10.8</i>	<i>4.17</i>	<i>6.12</i>	<i>2.30</i>
Educational level:						
Group Cert.	0.15	0.15	0.15	0.12	-0.00	0.10
	<i>4.16</i>	<i>2.30</i>	<i>3.84</i>	<i>1.40</i>	<i>-0.00</i>	<i>0.98</i>
Inter. Cert.	0.19	0.17	0.20	0.27	0.04	0.07
	<i>4.54</i>	<i>2.69</i>	<i>3.96</i>	<i>3.00</i>	<i>0.43</i>	<i>0.77</i>
Leaving Cert.	0.38	0.44	0.40	0.38	0.20	0.43
	<i>9.97</i>	<i>7.13</i>	<i>9.14</i>	<i>4.29</i>	<i>2.29</i>	<i>4.71</i>
Diploma/3rd level	0.54	0.74	0.54	0.77	0.22	0.68
	<i>10.1</i>	<i>9.77</i>	<i>9.52</i>	<i>6.97</i>	<i>1.72</i>	<i>6.14</i>
University	0.81	1.10	0.74	1.05	0.82	1.07
	<i>16.2</i>	<i>13.8</i>	<i>13.5</i>	<i>9.54</i>	<i>7.39</i>	<i>8.62</i>
Industry UE rate	0.52	0.52	0.47	0.58	0.75	0.59
	<i>4.03</i>	<i>2.10</i>	<i>3.16</i>	<i>1.43</i>	<i>2.94</i>	<i>1.90</i>
Occupation UE rate	-0.84	-0.61	-1.08	-0.17	-0.48	-0.07
	<i>-4.00</i>	<i>-1.22</i>	<i>-4.21</i>	<i>-1.95</i>	<i>-1.31</i>	<i>-0.10</i>
Urban	0.07	0.08	0.07	-0.00	0.07	0.17
	<i>2.32</i>	<i>1.87</i>	<i>2.05</i>	<i>-0.00</i>	<i>1.32</i>	<i>3.08</i>
Dublin	0.01	0.06	0.02	0.03	-0.04	0.07
	<i>0.22</i>	<i>1.30</i>	<i>0.59</i>	<i>0.38</i>	<i>-0.67</i>	<i>1.19</i>
"Served your time"	-0.00	-0.13	0.01	-0.00	-0.01	-0.14
	<i>-0.13</i>	<i>-1.82</i>	<i>0.20</i>	<i>-0.00</i>	<i>-0.26</i>	<i>-1.59</i>
R ²	0.50	0.49	0.42	0.53	0.40	0.44
Sample size	1215	779	811	329	404	450
SE	0.38	0.43	0.36	0.42	0.40	0.43

Notes:

1. t-statistics in small type, *italicised*
2. All equations were estimated by ordinary least squares.
3. The reference groups for the dummy variables (educational levels, urban, Dublin and "served your time") are: no educational qualification beyond primary certificate, living in a rural area (and therefore outside Dublin) and not having "served your time". Thus, the coefficient for an educational qualification measures the effect of having that qualification as against the base case of having no qualification beyond primary level; the coefficient for urban measures the effect of being in an urban area rather than a rural area; and the coefficient of the Dublin variable measures the effect of being in Dublin over and above the effect of being in an urban area.

It might be expected that trade qualifications (as represented by answers to the question "Did you ever 'serve your time' or otherwise become qualified in any trade or craft?") would, other things being equal, have a positive influence on wages. But this is not in fact the case: these qualifications do not have a significant influence on wages for either men or women. The positive coefficients on industry-specific unemployment rates are somewhat puzzling, but are largely offset by negative coefficients on occupation-specific unemployment rates; the overall results are not, in any event, sensitive to the exclusion or inclusion of these variables. Those living in urban areas tend to receive higher wages, with similar point estimates for men and women; but there is a higher margin of error on the estimate for women. The *additional* effect of living in Dublin is not significantly different from zero. Overall, about half of the variation in wage rates between individuals is explained by the variables included in the equations.

We can now decompose the average (logarithmic) gap between male and female wages along the lines described in Section 4.2. The decomposition is extended to take account of time out of the labour force, following Wright and Ermisch (1991).

$$\overline{\log w_m} - \overline{\log w_f} = \hat{\beta}_m(\bar{X}_m - \bar{X}_f) + (\hat{\beta}_m - \hat{\beta}_f)\bar{X}_f - (\hat{\alpha}_m H_m - \hat{\alpha}_f H_f)$$

where $\hat{\alpha} = (\hat{\beta}^{ynw}, \hat{\beta}^{ynw^2})$
 $H = (\overline{ynw}, \overline{ynw^2})'$
 ynw = years not worked

The effects of time spent out of the labour force are *not* further decomposed into portions measuring an "explained" component (due to differences in average employment interruptions) and an "unexplained" component (due to differences in coefficients attaching to employment interruptions). The basic reason for this is that the female employment interruptions are typically quite long, whereas the male employment interruptions are much shorter. The results then become highly sensitive to the standardisation chosen, as explained in Callan (1991). This sensitivity arises from the fact that the estimated coefficients reflect the very different patterns of male and female employment interruptions. Many of the female non-employment spells are, in effect, outside the range over which the male coefficients are estimated. As a result, therefore, we concentrate on the *net* effect of employment interruptions on the male-female wage differential, which is not influenced by these problems.

Table 4.3: *Decomposition of Wage Differential between Men and Women, Ireland, 1987*

<i>Decomposition</i>	(1)	(2)	(3)
<i>Sample: Marital Status</i>	<i>All</i>	<i>Married</i>	<i>Not Married</i>
Observed wage gap (logs)	0.289	0.279	0.088
of which % due to:			
Years not worked	8.8	21.5	-4.6
Other attributes	40.3	13.6	-21.4
Residual	50.8	65.0	126.1
$\bar{X}_f(\beta_m - \beta_f)$	0.147	0.181	0.112
ASE ^a of $\bar{X}_f(\beta_m - \beta_f)$	0.026	0.043	0.037
Wage adjustment index (D_i)	15.9	19.9	11.9

Notes: a. Calculated as per Stewart (1987).

The average male wage was about 32 per cent higher than the average female wage for all employees in this sample. The analysis suggests that about half of this gap could be attributed to differences in characteristics such as education and length of experience, and to time spent out of the labour market. This leaves a residual of about 16 per cent which cannot be explained in this way. In other words, the analysis suggests that if the sample women's characteristics were rewarded in precisely the same way as men's, their wages would be about 16 per cent higher.

The analysis of married and non-married sub-samples suggests rather different conclusions than those which might be drawn from the simpler descriptive analysis of these groups conducted in Chapter 3. That analysis showed a very small wage gap between non-married men and women, but a substantial gap between the hourly wages of married men and women. It might be thought, on the basis of these results, that discrimination could not be a significant problem in the younger age groups which dominate the non-married samples; and that the gap between married men and women reflected differences in age, experience, and time spent out of employment. But the econometric analysis undertaken here shows that the qualifications and experience of non-married women are such that they would be expected to gain higher wages than their male counterparts. The fact that they do not actually earn higher wages on average shows, therefore, that discrimination could still be a problem in the younger age groups. The econometric analysis does concur with the simple descriptive analysis in suggesting that the wage adjustment index is, along with the observed wage

gap, lower for the non-married group. A reduction in discrimination in wages and employment opportunities over time could have given rise to this result, though other explanations are also possible.

The basic reason why non-married female employees would be expected to earn higher wages than their male counterparts is that they tend, on average, to have higher educational qualifications. This is shown in an appendix to this chapter, which shows the comparative educational and other characteristics of men and women in each of the sub-samples. The highest qualification for 58 per cent of the non-married male employees is the Intermediate Certificate or below; the corresponding figure for female employees is 40 per cent. About 44 per cent of female employees have a Leaving Certificate, as against 32 per cent of men; while 16 per cent of women and 10 per cent of men have qualifications above Leaving Certificate level. Despite somewhat shorter average work experience and slightly longer periods out of employment, these higher educational qualifications are enough to suggest that non-married women would gain higher wages than non-married men if their characteristics were rewarded in the same way.

As was emphasised at the beginning of this section, the results of this econometric analysis must be qualified to take into account the fact that some information required for it was not available for all cases in the survey. If the decomposition of the wage gap in the wider ESRI sample was similar to that found for the econometric sample, one would find that about half of the 20 percentage point gap was explained by differences in characteristics. This would leave a gap of about 10 percentage points still unexplained. The wage adjustment index measuring the rise in wages which an average woman would experience if rewarded in the same way as men are currently rewarded would be about 12 per cent. However, the fact that a greater proportion of the differential was explained for the married as against the unmarried group suggests that this simple procedure is not adequate, and that if full information were available, the estimate of the wage adjustment index would be slightly higher than 12 per cent.

4.5 Further Analysis of Married Sub-Sample

A more detailed analysis of the sub-sample of married men and women is desirable for a number of reasons. First, it is necessary to take into account the impact of married women's labour force participation decisions on the results. Only a minority of married women actually participate in the paid labour market at present. If this minority consists disproportionately of women who are in a position to command high

wages, relative to their human capital attributes, then the wage gap between employees may give a distorted picture. A simple example may help to illustrate this point. Suppose that two women with identical measured human capital characteristics receive wage offers which reflect these characteristics and some random element. Now suppose that the woman receiving the higher wage offer participates, while the other woman does not. Only the higher wage will be observed in the labour market; but the average wage offer for a woman with these characteristics is below that observed wage. Thus the gap between wage offers to men and women may be greater than that between observed wages for men and women.¹³

A second reason for undertaking additional analysis of the sub-sample of married men and women is that results for this sub-sample can be directly compared with the results reported by Wright and Ermisch (1991) for the UK. The restriction of the sample to married men and women has some implications which must be noted. First, the average wage gap for single persons (who are typically younger), is lower than that for married persons, as illustrated in Chapter 3. Second, there is evidence from international studies that married men tend to have higher earnings than single men, other things being equal; but married women may have lower earnings than single women, other things being equal. For each of these reasons, the average wage gap for married persons is likely to be higher than the average wage gap for all persons, married and not married. Thus, the analysis reported here should not be taken as supplanting that in the previous section. It represents a summary of the work undertaken in Callan (1991).

4.5.1 Human Capital Approach

Two specifications of the wage equation were used for men.¹⁴ The first uses *potential* experience (measured by years since first leaving full-time education) as the measure of labour market experience, while also including educational qualifications and a set of variables reflecting, for the most part, the influence of labour demand.¹⁵ This specification is close to that employed by Wright and Ermisch (1991). The second specification for men uses men's *actual* labour market experience instead, and also includes

¹³In principle, it is possible that the wage offer gap will be below the observed wage gap, but later analysis shows that this is not the case here.

¹⁴Full details are given in Callan (1991).

¹⁵The variables in question were unemployment rates specific to the individual's industry, occupation and region as well as dummies for urban areas and residence in Dublin.

a measure of time spent unemployed or out of the labour market. For women, each of these two approaches was estimated using two different techniques. First an ordinary least squares (OLS) estimator, and second an estimator correcting for the influence of self-selection into the paid workforce (the Heckman two-stage estimator). The wage equation estimates, fully reported in Callan (1991), are broadly similar to those reported here.

The decomposition set out in the previous section is now extended to take account of possible self-selection bias in a natural way. Instead of focusing on the actual wage gap observed in the labour market, we attempt, when using the Heckman estimator, to compare the gap between the average wage "on offer" to men and women, taking account of the fact that women receiving higher wage offers, other things being equal, are more likely to take up a job. We then consider the proportion of that gap which is accounted for by differences in experience or other attributes, and the proportion of the gap which is unexplained, which is used to construct an wage adjustment index.

Table 4.4: *Decomposition of Wage Differential between Married Men and Married Women, Ireland, 1987*

Decomposition	(1)	(2)	(3)	(4)
Male equation ^a	OP	OP	OA	OA
Female Equation ^a	OA	HA	OA	HA
Observed wage gap (logs)	0.296	0.296	0.296	0.296
Wage offer gap (logs)	0.296	0.398	0.296	0.398
of which % due to:				
Years not worked	32.5	28.8	21.8	20.9
Other attributes	14.5	10.7	12.7	9.3
Residual	53.0	60.5	65.6	69.8
$\bar{X}_f(\beta_m - \beta_f)$	0.155	0.241	0.192	0.278
ASE ^b of $\bar{X}_f(\beta_m - \beta_f)$	0.044	0.075	0.043	0.074
Wage adjustment index (D_f)	16.8	27.3	21.1	32.0

Notes: a. Acronyms for equations: Method: O=OLS, H=Heckman
Experience: P=potential, A=actual

b. Calculated as per Stewart (1987).

The estimates shown in Table 4.4 are based on actual experience for women, and either actual or potential experience for men.¹⁶ They span a somewhat wider range than those of Wright and Ermisch; but they show a similar central tendency (about 20-25 per cent). Thus, estimates of D_f for the married sub-sample in Ireland in 1987 resemble those for the married population in Great Britain in 1980. The self-selection term in the female wage equation has quite a strong upward impact on the point estimate of D_f in every case, in contrast to the British estimates (17 to 27 per cent, 21 to 32 per cent). This arises from the fact that the analysis suggests women who can command high wages (relative to their characteristics) are more likely to participate. However, the fact that the relevant (λ) coefficient is significant only at the 10 per cent level is reflected in the increased standard error on the estimate of the wage adjustment index, which rises from 0.04 to 0.07. As a result the higher estimates are not, in statistical terms, significantly different from the lower ones.

Decompositions (1) and (2) are closest to the methods preferred by Wright and Ermisch (1991), given that their data did not include men's actual labour market experience. The analysis here shows that the effect of men's unemployment experience on their wages is significant. Comparison with decompositions (3) and (4) respectively show the effects of taking men's actual unemployment experience into account. The proportion of the wage offer gap attributable to years of unemployment or non-employment falls from about 30 per cent to something closer to 20 per cent. The estimate of D_f increases by 4 or 5 percentage points - illustrating a point made earlier, that the omission of variables may affect the estimate of the wage adjustment index. These changes are, however, within the margins of estimation error.

¹⁶Wage equations based on women's potential experience (not shown in the table) lead to unreasonably high estimates of the wage adjustment index: they suggest that women's wages would be up to 50 per cent higher if women's characteristics were remunerated at the same rate as men's. This is unsurprising. By definition, no account is taken of home time or unemployment experience; and Irish women have tended to have education levels as high, or higher, than men's. The sample proportions shown in the appendix to this chapter are for employees only, and so do not correspond exactly with the population proportions estimated from Labour Force Survey and reported by Breen and Shortall (1991); but those figures also show women having educational qualifications at least as high as men, except for third-level qualifications in the older age groups.

Similar analysis was undertaken with a sample restricted to full-time workers.¹⁷ This resulted in a small fall in the estimate of D_i ; a similar small fall was found by Wright and Ermisch (1991).

4.5.2 Occupational Approach

To what extent can wage differentials be explained by the distribution of men and women over broad occupational categories? And can the occupational categories add to the explanation of wages and wage differentials offered by a narrower human capital model? These questions were investigated in Callan (1991), using the Irish Central Statistics Office's broad classification of occupations¹⁸, with two amendments: separate identification of the nursing and teaching occupations. This yields 10 occupational categories: producers, makers and repairers; labourers and agricultural workers; transport and communication workers; clerical workers; commerce, insurance and finance; teachers; nurses; professional and technical; other service workers; and others. Investigations at a somewhat greater level of detail led to similar conclusions.

We may report the results briefly here. A model using simply the 10 occupational dummies can provide a wage equation with a similar fit to that of the human capital model. However, it yields a much higher estimate of the wage adjustment index. In effect, this result suggests that the male-female wage gap has more to do with differences *within* these broadly defined occupational categories than with differences in the distribution of men and women across them.

A wage equation which combines the occupational dummies with experience, and/or the other human capital attributes and demand yields estimates of the wage adjustment index which are much closer to those reported earlier, though clustered about a somewhat higher central tendency (25 to 30 per cent). There is, however, a good deal of collinearity in the combined models, particularly between the educational and occupational dummies. As a result, the individual coefficients are less well determined and the overall fit of the equation improves only slightly.

¹⁷The definition of a full-time worker was one working for 30 or more hours per week; teachers working between 24 and 30 hours per week were also defined to be in full-time employment.

¹⁸The CSO occupational classification also captures some key distinctions as regards industry. Most notably, the two industries which stand out as having the highest risks of low pay in Nolan's (1993) analysis (retail and personal services) have closely corresponding occupational classifications (commerce and services).

It can be argued that the use of a finer level of occupational detail would lead to different results. Cain's (1986) survey notes that it can be claimed that "with a sufficiently narrowly defined job almost all [male-female wage] ratios would be unity. Indeed, if not, companies would risk violating the law". A similar claim could well be made in Irish circumstances. The extent to which sex differences in the detailed occupational classification were then due to discrimination (or choices influenced by discrimination), as against choices reflecting personal preferences would then be of critical importance. But as Cain notes, neither economic theory nor econometric practice have yet managed a satisfactory resolution of these issues.

4.6 Conclusions

Male and female wage equations were estimated for a general sample of male and female employees, and for sub-samples of married and non-married employees, using data from the ESRI Survey of Income Distribution, Poverty and Usage of State Services. This allows a decomposition of the overall male-female wage gap in Ireland based on more general samples than have hitherto been possible. Earlier studies have been based on quite special samples of redundant workers, young workers or academics.

The results using a human capital framework, controlling for educational qualifications, labour market experience, time spent unemployed and out of the labour market suggested that average female wage rates would be over 10 per cent higher on average if these attributes were remunerated in the same way as men's. This estimate is somewhat higher than the estimates of Reilly (1987, 1990) for the youth labour market in Ireland, but not dissimilar to the estimates of Ruane and Dobson (1990) for the academic labour market. It is substantially lower, however, than the estimate of Walsh and Whelan (1976) which was based on data collected before the introduction of equal pay and anti-discrimination legislation.

A higher estimate of the wage adjustment index was found for a sample of married employees; and a lower estimate for non-married employees. A possible explanation of this conjunction is that discrimination has had a greater impact on the wages of those in older age groups, since the non-married category is dominated by young single persons.

More detailed analysis of a married sub-sample found some evidence, though not conclusive, of self-selection of women with particularly high wages into the labour market. The measured average wage gap therefore tended to understate the gap between the wages on offer to men and women. The unexplained gap between full-time workers was somewhat smaller than that for all workers (full-time and part-time). Overall, the results for married women were quite similar to those found in the UK.

The gap between male and female wages cannot be wholly accounted for by differences in educational qualifications, past labour market experience, or time spent out of the labour market. What factors might account for the substantial unexplained gap still remaining? It is important to realise that current discriminatory practices represent only one of a number of possible explanations, which may each have a role to play.

The analysis indicated that differences in hourly wage rates for part-time and full-time jobs may play a part; but that a substantial gap would still remain. Occupational effects, whether caused by segregation or voluntary choices, constitute another possibility. The analysis suggested that the distribution of men and women across broad occupational groupings added little to the explanation. Investigation using somewhat finer occupational classifications in Chapter 3 yielded similar results. As was noted there, it is quite possible that these results would be reversed at very fine levels of detail, i.e., that men and women are paid more similar rates within narrowly defined occupations. But occupational attainment at such levels of detail, incorporating distinctions between junior or senior positions within an occupation, could reflect discrimination within or outside the labour market. Such a classification may be of use in identifying the nature of the overall gap in pay. It helps to answer the narrower question of whether there is "equal pay for equal work"; but it cannot establish whether there are equal opportunities to achieve different positions in the occupational classification.

The measure of wages used in this study is based on usual earnings and usual hours of work. It may therefore be affected by such factors as overtime working or shift premia. Each of these may therefore play a role in explaining the observed wage gap, particularly if the distribution of family responsibilities leaves women less free to undertake work at premium rates. Data on the extent of overtime working in the sample suggested that this was indeed the case, but had a rather limited impact on the overall differential. Some of the analyses in the present chapter were also conducted using wage rates adjusted for overtime; these re-analyses produced very similar result to those reported here.

Union membership or coverage could also play a role. Analysis of data derived from the ESRI Survey (Callan and Reilly, 1993) finds that men who are members of a union do appear to earn significantly higher wages than those who are not. Given that a higher percentage of men than of women are union members, this may also contribute to the size of the gap between the sexes. This finding suggests one route by which equal human capital attributes may not translate into equal wages: unequal bargaining power, with union members, or those in employments covered by unions, having more effective bargaining power. Once again, however, we found that re-analysis along the lines of the present chapter, but including a union membership variable, led to very similar results to those reported here.

Wage differentials may also be compensating for other differences in working conditions. On the other hand, the non-pay aspects of jobs may reinforce rather than compensate for wage differentials in other cases. Pension entitlements, for example, are often more generous in higher paid jobs. It is not clear what the net effect of these considerations would be.

Current discriminatory practices, which might be subdivided into those which are implicit and legal, and those which are outlawed, constitute another possible explanation. But a part of the unexplained gap may reflect *past* discrimination, in terms of promotions and career opportunities. A stylized example may help to clarify this point. A wage gap between men and women with identical attributes in terms of qualifications and experience might be due to discriminatory practices barring women from promotion within a particular occupational structure. The removal of such discriminatory practices would leave men and women on an equal footing as regards future promotions. But the erosion of the wage gap which emerged under the discriminatory system would, under these circumstances, be a gradual process. Thus a study of the type undertaken here, conducted some time after the removal of discriminatory practices, could still find a wage gap persisting. The extent to which the unexplained gaps found in the present study reflect past discrimination is therefore an important topic for further investigation.

*Appendix 4: Means of Variables Used in Wage Equations*Table A4.1: *Means of Variables used in Wage Equations: All Employees*

<i>Variable</i>	<i>Means</i>	
	<i>Men</i>	<i>Women</i>
Years not worked	0.9	3.9
Square of years not worked	7.0	62.0
Years worked	19.6	10.4
Square of years worked	550.7	187.4
Educational qualifications:	%	%
Some 2nd level/Group Certificate	22.9	13.0
Intermediate Certificate	14.7	17.6
Leaving Certificate	23.5	37.2
Diploma/Other third level	6.0	10.1
University degree	9.1	10.0
Industry unemployment rate	13.5	10.7
Occupational unemployment rate	12.0	7.9
Urban	51.9	54.7
Dublin	33.9	35.7
"Served your time"	25.6	5.3

Table A4.2: *Means of Variables used in Wage Equations: Married Employees*

<i>Variable</i>	<i>Means</i>	
	<i>Men</i>	<i>Women</i>
Years not worked	0.9	6.8
Square of years not worked	4.9	113.8
Years worked	24.8	14.0
Square of years worked	731.1	249.4
Educational qualifications:	%	%
Some 2nd level/Group Certificate	23.3	14.0
Intermediate Certificate	10.4	15.8
Leaving Certificate	19.1	28.3
Diploma/Other third level	7.3	10.3
University degree	10.3	14.9
Industry unemployment rate	13.2	9.1
Occupational unemployment rate	11.7	7.2
Urban	55.2	48.0
Dublin	36.0	32.5
"Served your time"	26.3	3.6

Table A4.3: *Means of Variables used in Wage Equations: Non-Married Employees*

<i>Variable</i>	<i>Means</i>	
	<i>Men</i>	<i>Women</i>
Years not worked	1.0	1.7
Square of years not worked	4.9	24.2
Years worked	9.2	7.9
Square of years worked	188.6	142.0
Educational qualifications:	%	%
Some 2nd level/Group Certificate	22.0	12.2
Intermediate Certificate	23.3	18.9
Leaving Certificate	32.4	43.8
Diploma/Other third level	3.5	10.0
University degree	6.4	6.4
Industry unemployment rate	14.1	11.9
Occupational unemployment rate	12.6	8.4
Urban	45.3	59.6
Dublin	29.7	38.0
"Served your time"	24.3	6.4

Chapter 5

EMPLOYMENT AND FAMILY COMMITMENTS

5.1 Introduction

A substantial part of the gap between men's and women's wages is explained by the fact that the average female employee has spent fewer years in employment than her male counterpart. In this chapter we explore some of the reasons for this difference. The factors we examine are sometimes thought of as "barriers" to women's participation in the labour market. This nomenclature suggests an absolute: women are prevented from participating. A more general perspective is adopted here, focusing on factors which make it less likely that women will participate in the labour market.

We may distinguish between demand-side and supply-side factors. A bar on the employment of married women, such as existed until the early 1970s in the Irish civil service, is perhaps the clearest form of demand-side restriction, though other factors such as employer attitudes or hiring practices could also be relevant. Supply-side factors tending to restrict women's labour market participation include caring for children, and caring for elderly or infirm relatives. In this chapter we focus on such supply-side factors, on which new evidence from the ESRI 1987 Survey can be brought to bear.

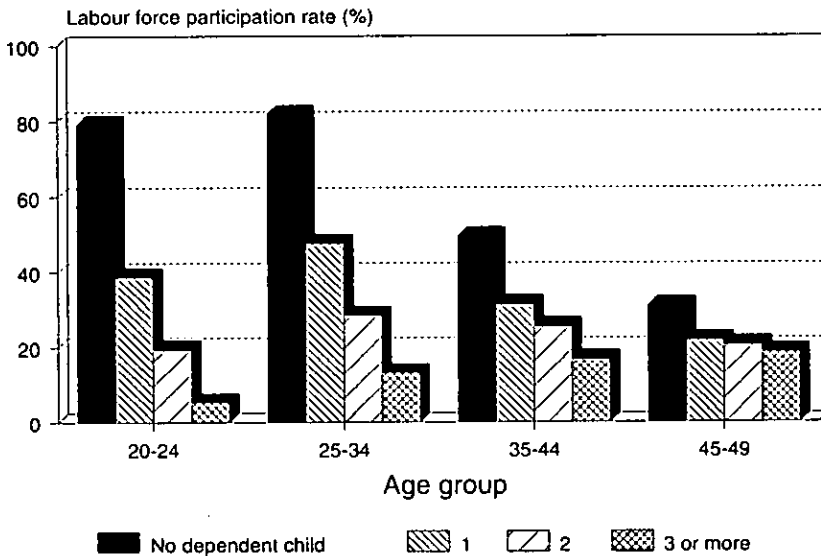
5.2 Children, Child-Care Costs and Women's Economic Opportunities

As noted above, the lower average labour market experience of female employees reflects, in large measure, the fact that many women, especially married women, tend to leave the labour market during the years of child-bearing and child rearing. About three-quarters of the married women who are not in the paid labour force said that child-care or other family responsibilities¹ were the main reason why they were not seeking paid work. The fact that women with children have lower rates of participation in the labour market than those without children is strikingly illustrated in Figure 5.1. For women in each age group an additional child reduces the

¹Blackwell (1989, Table 3.11). "Other family responsibilities" could include caring for elderly relatives, as discussed in the next section.

rate of participation in the labour market. This effect is, however, particularly strong in the two younger age groups, where the ages of the children concerned would also tend to be younger.

Figure 5.1: *Economic Activity Rates of Married Women Classified by Age and Number of Children*



Source: Blackwell (1989), based on *Labour Force Survey 1987*.

More sophisticated econometric modelling (Callan and Farrell, 1992), which takes into account the many factors influencing married women's decisions on labour market participation, also shows a strong influence from the number of young children. In particular, there is strong evidence that the presence of a pre-school child (aged 0 to 4) makes it much less likely that a woman will participate in the paid labour market. There is no similar effect in the case of men.

Social norms and personal wishes obviously play a role in giving rise to these results. Fine-Davis (1983) found that a substantial majority of mothers outside the paid labour force cited a desire to be with the children when they were young as the main reason they were not employed. Results such as these, however, reflect not only personal preferences, but also the financial constraints which enter into the decision process. Browning's (1992) review of the international research on the labour supply of women with children stresses the difficulties of identifying the balance between

these two forces - preferences and costs - in determining women's labour market participation, and the mode of childcare chosen. However, the international evidence does suggest that the availability and cost of childcare, and the degree to which state financial support to families depends on a mother's labour market status, are relevant to women's labour market decisions.

McKenna (1988) documents the limited availability of publicly-funded childcare in Ireland. Estimates of the numbers of working parents paying for childcare, or making other arrangements for the care of their children during their working hours, can be derived from the ESRI's 1987 Survey. A total of 123 individuals in the ESRI sample reported making some arrangement for the care of children during working hours. While this figure represents approximately 50,000 individuals in the population, the small sample size limits the analysis which can be undertaken. A first point which should be made is that almost 90 per cent of who reported making arrangements for childcare were women. A large proportion of the individuals had an arrangement (usually with a relative) for unpaid childcare. Most of those using paid childcare had their children cared for somewhere other than their own home, but a substantial minority paid to have their children cared for in their own homes.

Table 5.1: *Main Method of Childcare Used by Working Parents, 1987*

<i>Method</i>	<i>%</i>
Paid care in own home	13.2
Paid care elsewhere	48.9
Unpaid care	37.9
	100.0

Source: ESRI Survey, 1987.

The costs reported by those who used paid childcare are set out in Table 5.2. Most working mothers paid between £10 and £40 per week; almost one-third paid between £30 and £39 per week.

Table 5.2: *Weekly Expenditure on Childcare, 1987*

<i>Expenditure group (£ p w)</i>	<i>%</i>
1-9	9.1
10-19	22.1
20-29	19.5
30-39	32.5
40-49	7.8
50-60	9.1
	100.0

Source: ESRI Survey, 1987.

The state's¹ commitment to equality of opportunity between the sexes is of major importance in determining the appropriate policy towards childcare. There are, however, several other factors which are also relevant. Many of these are discussed in Callan and Farrell (1992). They distinguished between a state role in regulating the quality of childcare, and the issue of state financial support for childcare. They concluded that the strongest arguments for state financial support of childcare were on the grounds of equality of opportunity between the sexes, developmental benefits for children of early education, and the distortion of childcare decisions by the tax treatment of married couples. It was emphasised, however, that tax relief would not be an appropriate mechanism for providing such support. It would concentrate the benefits on those with the highest tax rates, and might be of little or no assistance to those on low incomes. The argument that childcare should be treated like a work expense, and therefore be tax-deductible, was found to be weak.

5.3 Care-Giving and Women's Labour Market Participation

Caring for family members with special needs tends to be done predominantly by women. O'Connor, Smyth and Whelan (1988) found that of those caring for an elderly person within the household, almost 4 out of 5 are women. The fact that women tend to take a disproportionate share of these caring responsibilities may reduce their labour market experience, and thereby contribute to the total gap between male and female hourly earnings. In this section, we examine the extent of the role played by women and men as carers, and its impact on labour market participation.²

²The impact of labour market experience on wages is documented in the preceding chapter.

We draw on a number of recent studies of care for the elderly, and some additional data provided by the ESRI Survey of Income Distribution, Poverty and Usage of State Services.

The analysis of O'Connor, Smyth and Whelan (1988) finds a large discrepancy between the total number of care-givers estimated from the responses of elderly persons, and the number of individuals reporting themselves as care-givers. This discrepancy arises particularly where the elderly person and the care-giver lived in separate households. The main focus here is on care-giving within the household. But it should be borne in mind that there are, in addition, many individuals who are giving care to non-household members as well. O'Connor, Smyth and Whelan (1988) estimate that about one-quarter of the elderly who regard themselves as receiving care are cared for by a non-household member. Just over 70 per cent of those who regard themselves as caring for an elderly person *outside* the household are women.

A substantial number of those caring for an elderly person in the same household are themselves elderly: 1 in 4 is over 65. (O'Connor, Smyth and Whelan, 1988). One might expect that such persons would, in any case, not be in the labour market. For that reason, some of our later analysis is restricted to those in the age groups most likely to be labour market participants (aged 20 to 59). O'Connor, Ruddle *et al.* (1988) found that about half of the carers spent between 4 and 7 hours per day on caring tasks; while a third regarded themselves as on-call for 24 hours a day, even if not performing specific tasks. Blackwell, O'Shea, Moane and Murray (1991) confirm the large time commitment involved in care for the elderly at home: they found the average time spent on caring activities was 47 hours per week.

O'Connor, Ruddle *et al.* found that about 1 in 6 of the carers they studied worked outside the home. Fewer female carers engaged in such work (1 in 10). But most female carers regarded themselves as having given up employment for other reasons (59 per cent saying they did so to raise a family) than specifically in order to take up the role of carer (17 per cent citing this reason). Blackwell *et al.* adopt a different perspective. They focus on the changes in labour market participation which carers say they would adopt if they ceased their caring role. Of those carers not currently doing paid work, about 36 per cent say that they would seek paid work, with 64 per cent saying they would not seek paid work.

The data from the ESRI Survey on Income Distribution, Poverty and Usage of State Services provide additional insights into the impact of caring on labour market participation. Information was collected on whether any household member needed special care or attention, and if so, on which household members provided this care and attention. Thus, care-giving is defined by the respondents, and the analysis undertaken here does not attempt to establish the level of care provided. Furthermore, two or more household members may be caring for the person needing special attention.

Table 5.3: *Care-Givers Classified by Sex and Marital Status, 1987*

	<i>Age of person needing special care</i>			
	0-20	21-59	Over 60	All ages
Married women	68	50	59	177
Non-Married women	10	14	24	48
Married men	41	16	19	76
Non-Married Men	0	3	10	13
	119	83	112	314

Source: ESRI Survey, 1987.

Table 5.3 sets out the numbers of individuals reported as care-givers in this way, classified by sex and marital status. It is clear that most care-givers are women, and most of these women are married. When the estimates are weighted to be nationally representative, about 70 per cent of the care-givers are women, which is in line with the other estimates cited above. The 314 carers in the sample represent approximately 83,000 individuals in the population. Those caring for persons aged over 60 represent about 30,000 individuals in the population. This latter figure can be compared with the estimate of 50,800 derived by O'Connor, Smyth and Whelan. It seems likely, therefore, that respondents to the 1987 ESRI Survey equated "special care or attention" with something greater than the "regular occasional care" which was the minimal requirement in the O'Connor, Smyth and Whelan Survey.

Table 5.4: *Employment Rates for Care-Givers and Others, 1987*

	<i>All ages</i>		<i>Aged 20-59</i>	
	<i>Employment rate</i>	<i>Number of cases</i>	<i>Employment rate</i>	<i>Number of cases</i>
Women caring for those with special needs	19.5	225	22.9	172
Other women	31.3	3294	37.9	2828
Men caring for those with special needs	54.2	89	69.1	62
Other Men	65.3	4257	75.7	3010

Source: ESRI Survey, 1987.

Table 5.4 shows the rates of employment (including self-employment/farming) for male and female care-givers, and others. Care-givers have lower employment rates than others for either sex. When the analysis excludes age groups likely to be in full-time education or retired, the employment rate for women carers is substantially lower than for other women. The employment rate for male carers is also lower than for others, but not substantially so.

Table 5.5: *Employment Rates for Female Care-Givers and Others by Marital Status, 1987*

	<i>All ages</i>		<i>Aged 20-59</i>	
	<i>Employment rate</i>	<i>Number of cases</i>	<i>Employment rate</i>	<i>Number of cases</i>
Married women caring for those with special needs	16.4	177	18.2	139
Other married women	24.2	2379	27.4	1926
Non-married women caring for those with special needs	30.8	48	41.2	33
Other non-married women	42.9	1545	64.8	902

Source: ESRI Survey, 1987.

Table 5.5 suggests that care-giving has a greater impact on the employment rate of non-married women than of married women.

Caring for an elderly relative or other persons with special needs may affect not only *whether* the carer is employed, but the nature of their employment. For example, a woman who was in full-time employment may change to a part-time job, in order to care for a relative. Finch and Mason (1990) document the importance of such compromise strategies in a UK context. They also point out that conflicts can arise between *potential* caring responsibilities and employment opportunities. For example, a woman whose elderly mother is currently in good health might turn down a job which involved moving to a distant location because of possible future caring responsibilities.

The options for care of the elderly and of others needing special care raise many complex issues. They cannot be reduced to simple choices such as home-based versus institutional care, or maintaining versus giving up employment. Blackwell *et al.* suggest that community care was initially viewed as a better form of care, as well as a less costly one; but that experience with community care policies has highlighted unforeseen costs. They suggest that "the more appropriate question now is under what circumstances, with what groups, and with what back-up services can community care offer a better quality and less expensive form of care than institutional services." The Blackwell *et al.* study shows the complexity of such calculations. The opportunity costs of caring, in terms of wages forgone, are one element of these complex calculations. But the dynamic costs in terms of effects on future wages are not taken into account. Both of these aspects are relevant to decisions on the optimal level of support for home-based care. For example, extension of the opening hours of day care centres and day hospitals to be more compatible with carers undertaking a normal working day would represent one such option.

5.4 Conclusions

This chapter has explored two of the main supply-side factors tending to reduce women's labour market participation, and thereby reduce women's potential earnings.³ The available evidence amply demonstrates that the presence of children, particularly pre-school children, makes it much less likely that a woman will participate in the paid labour market. The extent to which this reflects personal preferences, as against economic

³The exclusion of demand side factors from this chapter should not be taken to imply that they are unimportant.

incentives created by the tax system and the costs of childcare cannot be assessed so readily; it is, however, of crucial importance for policy decisions in this area. If financial considerations are the dominant force, then reductions in the cost of childcare could have substantial implications for female labour supply; but if the observed correlations instead reflect the strength of personal preferences, reduced childcare costs would have a much more limited impact on women's participation. There are substantial inherent difficulties in disentangling the effects of costs and of preferences, which extensive international research⁴ has not resolved. Similar considerations apply to the observed (negative) correlation between women's labour market participation and caring for relatives with special needs. In each case, there may be an additional cost associated with participation in the labour market; but there may also be an additional value placed on time spent out of the labour market in caring for the child or elderly relative.

⁴Reviewed by Browning (1992).

Chapter 6

POLICY ISSUES

6.1 Introduction

Actions at four different levels may have an impact on the division of labour between the sexes and the relative rewards for the work undertaken: societal, institutional, interpersonal and personal.¹ In this study we concentrate on the societal level, focusing on government policy and legislation; but other institutions (such as trade unions, employer organizations, individual firms, schools and colleges) may also play a role in bringing about greater equality of opportunity. Changes in the nature of interpersonal relations, and changes in individual attitudes are also relevant; but while some reference to the role played by such factors will be made, they are largely outside the scope of the present study.

A wide range of policy measures have been adopted in various countries aimed at the reduction of male-female wage inequalities. In this chapter we discuss the possible goals of public policy in this area, in order to clarify the context in which such measures have been introduced. We then consider the different forms of policy adopted and review of the international literature assessing their effectiveness. The Irish experience is reviewed in the light of the international findings, and we conclude by drawing together the prospects for future developments.

6.2 Policy Objectives and Strategies

What are the objectives of policy in the area of labour market equality between the sexes? Elias and Purcell (1988) comment that "The concepts of equality and equality of opportunity are difficult to define, and even among individuals, organisations and governments aspiring to pursue these elusive ideals, there is considerable variation in both the goals aimed for and the means perceived as appropriate to achieve them" (p. 196). Unequal labour market outcomes could be due to unequal opportunities, unequal incentives to participate in the labour market, or to differences in tastes and preferences between the sexes. Equality of labour market outcomes represents one possible goal. It would require that each of these possible causes of unequal outcomes be tackled; but this implies that policy

¹Rapoport and Rapoport (1976).

measures would offset any possible difference in preferences as between work in the labour market and work in the home as between the sexes. Equality of labour market opportunity represents a more limited goal, which allows for differences in preferences. It can be seen as underpinned by a philosophy of meritocratic individualism, whereby individuals have the right to be treated no worse than others with the same qualifications and experience (Townshend-Smith, 1989).

Unequal incentives could, in principle, also contribute to differences in labour market outcomes. This can be demonstrated most clearly by an extreme, and hypothetical, example. Consider a tax/transfer system which allowed women equal labour market opportunities, and *greater* non-labour market opportunities than men, thereby offering them lower incentives to participate in paid work. This would be the case, for example, if women were offered a cash payment for caring full-time for their own children, but no similar offer were made to men. Even with identical tastes and preferences women's participation and average work experience would tend to be lower than men's. Over time, this could result in women having *lower* wages than men (though a rise in women's wages because of a fall in their labour supply would also be possible), despite having equal labour market opportunities and identical preferences.² Thus, it could be argued that equality of incentive as well as equality of labour market opportunities would be needed for equality of labour market outcome.³

Another major distinction between equality of outcome and equality of opportunity is, however, that differences in personal preferences which affect the extent and nature of labour market participation could give rise to differences in the wages of average male and female employees. This is where analysis of the type conducted in Chapter 4 is particularly useful. It suggests, on the one hand, that about half of the overall wage gap of 20 percentage points can be explained, mainly by differences in the labour market experience of the average male and female employee. On the other hand, it shows that, even if differences in past labour market participation

²Under the conditions of this example women would be expected to be at least as well off as men in terms of total welfare, even if their labour market participation was less, because they could if they wished make exactly the same choices as men.

³Elias and Purcell view this as "a fundamental incompatibility between equality of opportunity and being given special treatment in a way which reinforces the idea that childrearing and housekeeping are essentially women's responsibility" (p. 209). But the example shows that equality of labour market opportunity and equality of incentive can, instead, be regarded as separate dimensions.

were attributable wholly to individual preferences, this could not explain the size of the wage gap currently observed: a residual gap of over 10 percentage points would remain.

There is, however, no simple correspondence between the alternative policy objectives and the standard decomposition of the wage gap into "explained" and "unexplained" portions. Elimination of any remaining discrimination would tend to reduce or eliminate the "unexplained" gap; but it would also tend to reduce the "explained" gap. Some differences in average labour market experience, which contribute to the "explained" gap, may be due, for example, to unequal rewards in the labour market, or unequal opportunities to participate, and not simply to differences in preferences.

How do the policy measures actually adopted in different countries relate to these alternative objectives? Building on the classification of Gunderson (1989), we may distinguish several different types of policy aimed at reducing the male-female wage gap.

- 1 (a) Traditional "equal pay" policies, designed to prevent wage discrimination for the same job in the same establishment.
- (b) Broader policies aiming to ensure "equal pay for work of equal value". There is considerable variation in the scope of such legislation across countries, with some coming closer in practice to the traditional "equal pay" model and others approximating more closely the "comparable worth" legislation instituted in several US states. This tends to be based on systematic job evaluations in which all jobs within an establishment are uniformly rated according to the level of human capital and skills and the working conditions involved.⁴
- 2 (a) Policies on "equal employment opportunity", which attempt to prevent the discriminatory relegation of women to low-paid jobs. Elimination of direct discrimination of this type would also have indirect effects: women would no longer be discouraged from investing in education, training, and on-the-job experience by the prospect of lower rewards than their male counterparts for such investments.

⁴While no standardised system of job evaluation exists, the same four basic "compensable factors" are usually considered - skills and knowledge required, effort, responsibility, and working conditions - with the weighting assigned to each chosen by the system designer.

- (b) Policies along the lines of US "Affirmative Action" programmes, designed to overcome the difficulties in monitoring equality of opportunity by ensuring that the results reflect this principle. They are also a response to the perceived need to address the effects of apparently neutral, but effectively discriminatory processes which have built up in the system as a result of a history of inequality. They generally set numerical targets and timetables for hiring and promotions, aiming to ensure that the sex composition of organisations mirrors that of the surrounding relevant labour market.
- 3 Policies which facilitate women's participation on equal terms in the labour market, which may involve actions outside the labour market, such as the provision of day-care and relevant education and training, in an attempt to improve women's productivity levels and assist the full integration of women into the labour market. These may involve adaptation *to* the jobs, by the provision of support services (e.g., care for children after school hours, or day-care for younger children), or adaptation *of* the jobs, making them more compatible with family commitments (e.g., parental leave, flexible hours, job-sharing).

Equal pay policies, in either narrower or broader forms, and equal employment opportunity policies can all be seen as reflecting a goal of equality of opportunity. It is less clear whether target-setting or affirmative action policies represent simply an alternative means of achieving that goal or a different goal of equality of outcome. It could be argued that affirmative action policies are motivated by considerations of equality of opportunity, but reflect a view that it is less difficult and costly to monitor the outcomes of hiring and promotion processes rather than the processes themselves. There now exists a considerable body of international literature on the experience and impact of each of these forms of policy which will be reviewed in the next section.

In recent years, however, the importance of facilitative policies to the achievement of the goal of equality of opportunity has come to be increasingly stressed. The equal opportunity interpretation of facilitative policies views them as necessary for women to compete in the labour market on equal terms. In particular, it views the provision of subsidised childcare as a *sine qua non* of true equality of opportunity, because of the effects of child-related interruptions to women's labour market participation and earnings. We will return to this issue after considering the international and Irish experience with the other forms of policy.

6.3 Policy Instruments: International Experience

This section outlines the international experience with the forms of policy described earlier, drawing principally upon recent reviews by Gunderson (1989) and OECD (1991). As seen in Chapter 2, relative female earnings have increased substantially in most European countries and in Australia during the past 30 years, with more than half the wage gap disappearing in a number of countries. While the rise in the female to male wage ratio slowed or halted in many countries during the last decade, considerable increases in female earnings have been reported in Canada and the US. The period during which these changes have occurred coincides with the implementation of a range of policies in many countries designed to reduce the wage gap and facilitate the fuller incorporation of women into the labour market. The extent to which the policy measures adopted may be considered responsible for the observed reduction of the wage gap is uncertain, however, as empirical evidence of their effectiveness tends to be scarce and difficult to interpret.

In many cases the implementation of several different types of legislation during the same period causes difficulties in the estimation of the impact of any one form of policy. In addition, it has been argued that the real effects of anti-discrimination policies on the wages of women with more labour market experience may, in some cases, have been obscured by the general increase in labour market participation rates amongst young and relatively inexperienced women which has occurred over the last 20 years, especially in so far as this increase has been concentrated in relatively low-paid occupations. Most importantly perhaps, it should be recognized that the very enactment of legislation often signifies a change in society and in social attitudes which may, in itself, be responsible for the changes in all aspects of womens' experience of the labour market, and that many changes in the size, composition, educational standards and attitudes of the female labour force were occurring during the period in which most of this legislation was enacted.

In considering the varying levels of success in reducing the wage gap in different countries, it is of interest to consider not just the different measures adopted, but also the means by which these policies are implemented. A recent study (OECD, 1991) discusses the variations which occur in methods of implementation from country to country and points out their possible significance in influencing the effectiveness of policy. In general, countries with relatively centralised national wage-fixing systems

have tended to rely heavily on collective agreements to implement policy on equal pay. Where the wage-setting procedure is more decentralised, legislation has played a greater role.

6.3.1 Equal Pay Policy

The principle of "equal pay for work of equal value" is included in the preamble to the constitution of the International Labour Office and was reaffirmed in Convention 100 and Recommendation 90 in 1951, which called for the application of the principle through legislation, collective bargaining and national wage-determination systems. For many years this Convention was interpreted in a narrow sense as applying simply to equal pay for the same or substantially similar work. As the significance of occupational segregation and the undervaluation of traditionally "female" occupations in causing the wage gap came to be realised, however, a broader interpretation, allowing the equation of wages across occupations, became more common. Since the 1970s policy has been expanded in many countries to incorporate this broader definition. Precise definitions of equal value or guidelines for its measurement are often excluded from legislation and policy statements and thus left open to interpretation, however. As a result interpretations of equal value tend to vary considerably from country to country and from case to case. Thus, a brief review of experience with legislation on a country-by-country basis is needed.

The US passed an Equal Pay Act, guaranteeing equal pay for like work, as early as 1963, and added to it a year later with the inclusion of provisions forbidding wage and employment discrimination on the basis of sex (as well as race and colour) in the Civil Rights Act of 1964. The effects of the legislation appear to have been fairly limited, with no observable reduction in the wage gap occurring in the decade following its passage, although it has been argued (Beller, 1980) that the earnings ratio was raised above the level it would otherwise have been in these years. In recent years more intensive attempts have been made in the US to put the principle of "equal pay for work of equal value" into practice. The necessity of adopting a method to calculate "equal value" has brought the concept of "comparable worth" to the fore.

In 1981, the US Supreme Court ruled that comparable worth comparisons were not ruled out under the Equal Employment Opportunities Act of 1964. The implementation of comparable worth policy remains concentrated at state level. By 1984, 25 states had comparable worth laws in place, with just under half of these intending to use wage adjustment procedures based on these for their public sector

employees. Where these adjustments have been made, they have typically involved wage increases in predominantly female jobs of between 10 per cent and 20 per cent. In view of the limited number of states in which comparable worth legislation has actually been implemented, the fact that its implementation has tended to be restricted to the public sector, and the restriction of comparisons to a within-establishment basis, the *aggregate* impact is not likely to have been substantial. There have been conflicting estimates of the potential impact of federal legislation on a similar basis; and the size of potential adverse employment effects in the private sector is also a matter of dispute.

Studies of the effects of equal pay legislation in Canada also fail to find evidence of any significant impact on the aggregate wage gap, despite the fact that every province has some form of basic equal pay legislation in place. Neither Gunderson's (1975) time-series analysis of the impact of the 1969 Employment Standards Act, nor the OECD's assessment of the 1978 Human Rights Act find a clear impact on the wage gap. The impact of the Human Rights Act and much of the provincial legislation is likely to have been weakened by their reliance on a complaints based system. Recent legislation in several provinces attempts to overcome this problem. The furthest reaching of these is Ontario's Pay Equity Act, passed in 1987, which guarantees equal pay for work of equal value in both the public and private sectors. The new legislation does not rely on a complaints based system, instead it officially requires all employers to adjust their wage systems on the basis of comparable worth evaluations. Studies of its enforcement and impact will be of considerable interest, particularly in terms of the use of comparable worth legislation in the private sector.

The principle of equal pay for equal work has a long history in the European community, though its implementation has not been a smooth or speedy process. Article 119 of the Treaty of Rome expressed "the principle that men and women should receive equal pay for equal work". Curtin (1989) argues that the principle was included at this stage for strictly economic, rather than social, reasons. At the time of negotiations, social legislation was considerably more advanced in some countries than in others: France, for example, had implemented equal pay legislation in 1957. Thus, the main reason for the inclusion of the principle of equal pay in the Treaty, it is argued, was to protect French industry from unfair competition.

Most States were slow to actually implement the principle domestically, with rather limited progress in the implementation during the 1960s. In 1974 a Resolution was introduced on a four-year action programme which announced plans to adopt measures necessary to achieve not just equality in pay, but also in access to employment, training, etc. As part of this programme the Council adopted a series of Directives in the following years. The first, in 1975, was a Directive on equal pay. The Directive incorporated the principle of equal pay for work of equal value, interpreting Article 119 as implying that "for the same work or for work to which equal value is attributed, the elimination of all discrimination on grounds of sex with regard to all aspects and conditions of remuneration" is required. It did not contain an exact definition of "equal value" or a methodology for its measurement, however. It was to be implemented in the Member States within one year, with the principle of equal pay being enforced both in collective agreements and in individual contracts. Individuals were to have the power to institute legal proceedings against their employer and were to be guaranteed protection against unfair dismissal arising from such proceedings. In 1978 the Commission concluded that the principle of equal pay as outlined in the Directive had not been fully implemented in any Member State. Proceedings only began to be issued against individual Member States in the 1980s, however.

All EC countries now have some form of equal pay legislation, in line with the EC Directive. Methods of, and commitment to, implementing equal pay policy vary from country to country, however. In addition, each country has its own history of national equal pay policy. The impact of legislation in the various countries, therefore, and the extent to which each country has reduced its wage gap, varies considerably.

Evidence from the UK suggests a positive impact of equal pay policies in reducing the wage gap. The UK passed an Equal Pay Act in 1970 and allowed employers 5 years to carry out the necessary adjustments to their wage systems, although the indications are that few changes were made earlier than 1973. The male-female wage ratio, which had been relatively stable at around 0.58 for 20 years, rose sharply to 0.68 in the 7 years from 1970 to 1977, before stabilising at a slightly lower level towards the end of the decade. Perhaps more significantly the increase was generally uniform across occupations and industries, suggesting that it could not be attributed merely to changes in the composition of the female labour force. It also occurred in almost all sectors at around the same time, that is between 1974 and 1976, the years immediately before and after the year of implementation of the act.

Zabalza and Tzannatos (1985a, 1985b) analyse the effects of the Equal Pay Act and conclude that it was significant in influencing these changes. In addition, they argue that there is no evidence of significant adverse employment effects as a result of the increase in the relative cost of female labour. The aggregate number of hours worked by females rose steadily relative to the corresponding figure for males during the 1970s. Although most of this increase was concentrated in the public sector, in the private sector the employment of females relative to males appears did not fall substantially. Chiplin and Sloane (1988) argue that the data and methods used by Zabalza and Tzannatos do not justify such a strong conclusion. In particular, they stress that the role of incomes policies (including a flat rate element in pay increases) in equalizing pay is underestimated. Borooah and Lee (1988) argue that the role of changes in industrial structure - faster growth of industries which are relatively female intensive - in explaining the rise in the employment of women relative to men has also been underestimated.

The OECD (1991) argues that the impact of the Equal Pay Act may have been in large part due to the inclusion of provisions specifically directed towards women in sex-segregated occupations. These provisions, which applied to all female workers covered by collective agreements, ensured that no female worker could be paid less than the lowest wage paid to male manual workers in the same workplace.⁵ It may be that such provisions had more significant effects than the rest of the act because they operated across the board, and were not as subject to the procedural hurdles which individual cases would have had to negotiate.

In 1982, a European Court of Justice ruling found that the UK legislation contained no proper measures to allow employees to obtain equal pay for work of equal value where there was no like work and no system of job classification. The Equal Pay Act was amended in 1983 to deal with this ruling, extending the right to equal pay to work which was of equal value in terms of skill, effort and responsibility. The legislation was to be enforced under a complaints-based system with individual women making complaints through their union to the industrial tribunal. The complaints system as established under the amendment has been criticised as being too complex and inaccessible to allow it to have widespread effect (Curtin, 1989); and also for failing to provide a certain definition and guidelines for the measurement of equal value (McCrudden,

⁵This approach has something in common with the idea of a national minimum wage; for a discussion of the issues arising in that context, see Nolan (1993).

1983). There is no evidence to suggest that the amendment has had any effect in reducing the wage gap. The overall UK wage ratio remained relatively constant, fluctuating between 71 and 74 per cent since 1975. (OECD 1991)

The potential effectiveness of the use of collective bargaining mechanisms to address the issue of equal pay is demonstrated by the experience of the Scandinavian countries. In Denmark, by the time that legislation was passed in 1976 to meet the requirements of the EC Equal Pay Directive of 1975, a significant portion of the Danish labour force was already covered by collective agreements on equal pay. Under the Danish system, labour law is largely defined by collective agreements. Collective agreements are binding and enforceable by the Labour Court and legislation tends to be based on the contents the agreements. Settlements on equal pay introduced in 1971 and 1973 covered large parts of the labour market and had a direct impact in reducing the wage gap. Between 1970 and 1975 the wage ratio among manual workers in manufacturing rose from 74 per cent to 84 per cent. In the two years following the passage of the 1976 legislation, this wage ratio rose only slightly further - to 86 per cent by 1977 - and it is unclear to what extent this further increase can be attributed to the legislation rather than the continued effect of the earlier collective agreements.

Sweden also has a strong and long-standing record in the implementation of equal pay policy through the mechanism of collective agreements. Since the 1950s Swedish trade unions have implemented a Wage Solidarity policy to protect low-paid groups in the workforce. As a result of the implementation of this policy, demands for equality in the wage structure and more specifically for equal pay for work of equal value have tended to be central in wage negotiations. In 1960 the Swedish Trade Union Confederation and the Swedish Employers' Confederation reached agreement on the abolition of separate wages for women over a 5 year period, resulting in a wide range of collective agreements on the subject. The subject was not legislated on until 1980, when the Act on Equality between Men and Women at Work was adopted. Amongst provisions dealing with equal employment opportunity and affirmative action, the Act reinforced the principle of equal pay for work of equal value in legal terms. It also established the position of an Equality Ombudsman to oversee the implementation of the act and to promote equality. As in the Danish case, equal pay legislation appears to have had much less impact than the system of collective agreements on the subject which preceded it. Between 1960

and 1979 the wage ratio amongst manual workers in manufacturing rose from 69 to 89 per cent; in the 10 years following the passage of the legislation this figure has remained relatively constant.

The Scandinavian experience indicates that the collective bargaining process can, in certain circumstances, be an effective instrument for the implementation of equal pay policy. But the extent to which equal pay policy can be implemented through the mechanisms of collective bargaining rather than by legislation depends, *inter alia*, on the degree to which wage-fixing systems and collective bargaining are centralised. Countries like Sweden with a highly unionised labour force and relatively centralised collective bargaining have been able to rely heavily on the mechanism of collective agreements. In the US, where only 18 per cent of the labour force are unionised and wage-fixing systems are extremely decentralised, legislation has been the only possible method of implementing equal pay policy. Nor is centralised bargaining a sufficient condition for the implementation of equal pay policy through the wage bargaining system: the relatively low degree of wage dispersion evident in the Scandinavian countries can also be seen as linked to quite distinct societal preferences, and contributing to the relatively low wage gap between the sexes.

6.3.2 Equal Employment Opportunity and Affirmative Action

The significance of occupational segregation in influencing the wage gap has already been discussed. A wide range of policies aimed at reducing such segregation, ranging from traditional equal employment opportunity (henceforth EEO) legislation to more active affirmative action programmes, are in place in various countries. In fact a form of policy evolution appears to have occurred as the need to compensate, not just for discrimination in its most overt forms, but also for the systemic discrimination which results from a history of inequality, came to be realised, as did the difficulties involved in legally proving the existence of discrimination in employment practices and in enforcing EEO legislation from the outside.

The US has a long record in the implementation of EEO legislation and affirmative action programmes. EEO legislation, forbidding the reservation of jobs for one sex and enforceable by lawsuit, was included in the Civil Rights Act of 1964. Four years later, an Executive Order required that all federal contractors implement affirmative action plans, obliging them to set goals for the employment of women and minorities at all promotional levels so that their employment share reflected their share of the

surrounding relevant labour market. This was followed by an amendment to the Civil Rights Act which enabled the courts to compel private industrialists to develop affirmative action plans. The EEO Commission was established to set down guidelines for affirmative action programmes and to supervise their implementation, and has been aided by the courts, who have issued numerical orders for hiring and promotion in many cases.

A major feature of the US system is that it shifts the burden of proof onto the employers, forcing them to reassess their own hiring and promotional practices and to take action to ensure that they comply with official regulation. In practice, however, government monitoring of the extent to which the affirmative action plans have been adhered to has tended to be weak. In recent years, in particular, both regulations and enforcement have been loosened somewhat, so that the risk of losing a federal contract through failure to fulfil a plan has become small. Affirmative Action has always been a divisive political issue and complaints about so-called "reverse discrimination" led the Justice Department to call for an end to the use of numerical quotas as a tool for affirmative action during the 1980s. Leonard (1990) argues that Supreme Court decisions in 1989 "nailed down the coffin lid" on affirmative action, but the controversy about its effects has continued.

Despite the extensive legislation in place, however, the evidence of its real effect on the labour market is not that clear. Some studies of the effects of the 1964 EEO legislation, conducted in the 1970s and early 1980s, find evidence that it increased female earnings and contributed to the reduction of the earnings gap during this period (Beller 1976, 1979, 1980). Other studies (e.g., Oaxaca, 1977) have failed to find significant evidence of EEO legislation on earnings, however. Beller (1982) also concludes that the legislation had some effect in reducing occupational segregation, although Leonard (1984a) argues that its overall effect on female employment was negative or insignificant. There is some evidence from Beller's studies that the legislation was more effective when it was more strictly enforced. Evidence of the impact of affirmative action on overall costs and employment levels is much more limited; most research has focused instead on whether the programmes have been effective in achieving their explicit goals. However, Griffin (1992) estimates that affirmative action led to a cost increase of 6.5 per cent for the firms involved.

Numerous studies have also examined the effects of affirmative action programmes introduced under the 1968 Executive Order. It has been found generally that such programmes do have a positive effect on female wages and employment in the establishments in which they are in place, but the

limited number of these firms means that the economy-wide effects are restricted. Beller (1982) and Leonard (1984b) find evidence of a decrease in occupational segregation as a result of these programmes and Leonard (1984c), concludes that they have resulted in an increase in the growth rate of employment for females. Once again, there is also evidence that stricter enforcement leads to more effective results (Osterman, 1982; Leonard 1984b, 1985). The need for caution in attributing the gains made in reducing both the wage gap and the extent of occupational segregation directly to affirmative action programmes, during a period when many changes were occurring in the size, composition, educational standards and attitudes of the female labour force is widely stressed, however. Smith and Ward (1984), for example, point out that the increase in the wage ratio from 0.60 to 0.64 that occurred between 1980 and 1983 cannot be easily attributed to legislation passed more than 10 years earlier and whose enforcement actually decreased during this period. The OECD (1991) concludes that, although the level of occupational segregation has been declining slowly in the US over the last 20 years, the only area where affirmative action programmes appear to have had any real impact is in opening up the managerial and professional categories, with little real progress being made in the skilled blue-collar bracket.

The EC passed a directive on "Equal Treatment" in 1976. It called for equal treatment for men and women "as regards access to employment, vocational training, promotion and working conditions". As Curtin (1989) points out, the Directive confers two forms of obligation on Member States. First, what she describes as a "passive" obligation to prevent discrimination in relation to employment; and secondly, a more "active" obligation to abolish any laws or regulations which are contrary to the principle of equal treatment. She also argues that the Directive may allow affirmative action plans, because its provisions are stated to be "without prejudice to measures to promote equal opportunity for men and women, in particular by removing existing inequalities which affect women's opportunities". The position in this regard is not clearcut. The European Commission's 1988 report⁶, recommended the adoption of positive action programmes by employers aimed at removing the obstacles which continue to stand in the way of women achieving equal opportunities in practice; but such programmes may not involve some of the elements widely associated with the term "affirmative action".

⁶*Positive Action-Equal Opportunities for Women in employment-A Guide*

The UK passed a Sex Discrimination Act in 1975, outlawing discrimination in employment practices because of sex or marital status. It was forced to amend this legislation in 1986; the amended law promised state subsidies to companies engaging in affirmative action and preferential treatment programmes. In addition, in 1985, parliamentary approval was granted to a report published by the Equal Employment Commission outlining a "Code of Practice for the Elimination of Discrimination". It is too early, at this stage, to properly estimate the effects of British affirmative action policy, although there is some evidence that the number of voluntary initiatives by companies increased after the government began to grant state subsidies and after the Equality Employment Commission's report received parliamentary approval.

EEO legislation in the Scandinavian countries is of particular interest in that it is largely implemented through the collective bargaining system. As mentioned earlier, Sweden passed the "Act on Equality between Men and Women at Work" in 1980, requiring employers to take action to achieve equality of wages, employment and promotion between the sexes. The legislation was then implemented by means of collective agreements between employers and the unions. In addition, the Swedish government requires all companies receiving regional aid to employ at least 40 per cent of both sexes at all levels of the promotional ladder and grants subsidies to firms hiring or training workers in jobs which are "non-traditional" for their sex. Norway passed a similar equality act - the Act on Equal Status between the Sexes" - in 1978 which was implemented by collective agreement in the same way. A programme introduced in 1979, however, offering six-month subsidies to firms hiring workers in "non-traditional" roles, has relatively unenthusiastically received and has failed to find recipients for all of its funds.

Little formal analysis of the effects of Scandinavian policies and their method of implementation has been undertaken. Relative wages have shown a gradually increasing trend in Sweden since the 1960s. Occupational segregation remains very pronounced, however, and the increase in wage ratios is, therefore, more likely to be attributable to the effects of centralised collective wage bargaining and a strong union policy to increase low wages, as discussed earlier, in addition to structural changes in the economy such as the increase in public sector employment. A strong system of supporting social policy such as the separate taxation of husbands and wives, the provision of paid parental leave for both sexes, and the building of state-subsidised childcare centres are also likely to have been significant.

6.4 Policy Instruments: Irish Experience

6.4.1 Equal Pay

The first initiatives towards the implementation of the principle of equal pay in Ireland were contained in the 1972 and 1974 National Wage Agreements. Until that year the National Wage Agreements had made their own contribution to the wage gap by according women only a proportion of the increases agreed on for men. Most increases under the 1972 Agreement continued to be awarded on a percentage basis. It did make specific provision for some equal pay increases, however, allowing for the negotiation of a partial reduction in wage differentials which were established to exist in situations where men and women were doing like work or work of equal value. Disputes were to be referred to the Labour Court, which was to appoint an Equal Pay Commissioner to carry out investigations. The effects of the provisions appear to have been relatively limited. Few of the cases investigated by the Equal Pay Commissioner were successful. In addition provision was also made under the agreement for employers to claim inability to pay.

Legislation on equal pay was first introduced in Ireland in the form of the Anti-Discrimination (Pay) Act in 1974. The legislation was introduced to meet the requirements of EEC Directive 117, which was signed in February 1975 coming into effect a year later, and called on all Member States to eliminate "all discrimination on grounds of sex with regard to all aspects and conditions of remuneration". The Act was passed in 1974 and, despite pressure to delay its implementation, came into force on the first of January 1976.

The Act established the right of men and women on like work and employed by the same or an associated employer to equal pay. It defined "like work" not only as the performance of the same duties under the same conditions, but also as work of "equal value" in terms of the demands made in relation to skill, physical or mental effort, responsibility and working conditions. In this way the Act went further than traditional "equal pay" policies in encompassing the concept of "equal pay for work of equal value" in line with the requirements of the EC Directive. The Act was to be implemented by means of the issuance of individual complaints to specially appointed Equality Officers with investigative powers. Disputes were to be referred to the Labour Court. In addition it contained a provision to prevent the complainant from victimisation or unfair dismissal arising from actions taken under the Act.

For reasons discussed earlier, reliance on a complaints based system carries with it certain disadvantages. The 1974 Act relied mainly on a complaints-based system.⁷ The appointment of Equality Officers⁸ may have gone some way towards alleviating this problem. Over the years Equality Officers have built up a considerable body of specialist knowledge in the area and are considered to provide a relatively cheap and accessible service. Their powers of investigation are particularly useful to claimants in attempting to prove that "like work" is, in fact, being performed. In addition, many claimants have been represented to the Equality Officers by their Trade Unions, which has allowed considerable numbers of women to be involved in a single case.

In practice the scope of the job comparisons which have been carried out under the legislation has been rather limited. Although the Act contained the far-reaching concept of equal pay for "work of equal value", which would potentially allow the comparison of very different jobs, it did not contain any reference to the formal job evaluation schemes which would be necessary to make such comparisons. It is possibly partly because of this, that very few cases which involve the comparison of jobs which are radically different in content have been taken.

6.4.2 Equal Opportunity

In February 1976 the EEC issued Directive 207, which called for the application of the principle of equal treatment to men and women in employment as regards access to jobs, training and promotion, and working conditions. In response to this Directive the Employment Equality Act was passed and came into operation in 1977. The Act prohibited discrimination on the grounds of sex or marital status in recruitment, training, the provision of opportunities for promotion and conditions of employment. It also contained an implicit distinction between direct discrimination (i.e., where an individual of a certain sex or marital status is treated less favourably than another individual is in similar circumstances) and indirect discrimination (i.e., where a condition or requirement is applied equally to both sexes, but is such that a considerably smaller proportion of members of one sex can comply with it, and which cannot be shown to be an essential requirement for the job in question). Once again individual complaints

⁷In a wider context, some of the powers of the Employment Equality Agency (outlined in the next section) may complement the 1974 Act.

⁸Formerly Equal Pay Officers.

under the Act are to be submitted to the Labour Court, and provisions intended to protect the complainant from unfair dismissal or victimisation as a result of their action are included in the Act.

In addition, however, the Act established an independent body, the Employment Equality Agency, to oversee the operation of both the 1977 and 1974 acts, and to monitor the overall progress made in moving towards sexual equality in the workplace. The Agency was given wide powers to undertake this task. It has the power to issue codes of practice and guidelines to employers; to carry out formal investigations and require that any information be produced to aid in such investigations; to provide assistance to individual claimants; to undertake research and distribute information; and to issue non-discrimination notices against those who are found to be breaking the law under the Act. It was hoped that its powers would allow it to attack the discrimination which exists in areas to which the right of individual complainants did not extend - in particular, to discriminatory practices, discriminatory advertising, or pressure to discriminate.

Since its establishment the Agency has become one of the chief publicists of problems of sexual inequality in the Irish workplace. It provides assistance and support to individuals wishing to make claims under either of the Employment Equality Acts, and to private companies seeking to establish equality of opportunity within their organisations. It also advises on equal opportunity policy in state and semi-state bodies. While acknowledging the role played by the Agency in terms of public awareness and its educational role, Curtin (1989) argues that the Agency's statutory powers have, in practice, been not been fully utilised; this she attributes to its limited resources, including staffing. In particular, she argues that the Agency's powers of formal investigation, which constitute a strong weapon against the less obvious and more systemic forms of discrimination, have been underutilised.

The position as regards formal targets for hiring and promotion is rather different in Ireland, as in other EC countries, from that obtaining in the US. Irish legislation on employment equality, reflecting the EC directive, is based on equal treatment for men and women in hiring and promotion decisions. Formal quotas could be seen as incompatible with this approach.⁹ However, a distinction must be drawn between measures involving what is often termed "positive discrimination" (such as quotas for

⁹Curtin (1989) argues that "positive discrimination" could be seen instead as meeting the substantive requirements of equality in particular situations.

employment or promotion) and "positive action" measures, (such as the provision of training). The Employment Equality Act of 1977 made some allowance for the difficulties in this area in dealing with the employment related area of vocational training. Although discrimination in admission to training courses or the treatment of people on courses is prohibited in general, the training of one sex only for work which had previously been dominated by the other sex is permissible.

A number of positive action measures have been taken in the public service and semi-state bodies. A programme has been in place in the Civil Service and in some of the semi-state bodies since 1984 and more formally since the adoption of an *Equal Opportunity Policy and Guidelines for the Civil Service* in 1986. The programme states a commitment to the goal of equal opportunities, involving the achievement of fuller participation by women at all levels of employment. Some of the provisions of the programme are of a facilitating nature - for example, those relating to maternity leave, job sharing, and reinstatement. It also provides for regular analysis and monitoring of the relative position of women within the bodies concerned. The data collected provide evidence of the extent of progress towards the goal of equality of opportunity and this progress is monitored by the Employment Equality Agency.

Employers in the private sector have been encouraged and assisted in taking more positive steps towards the achievement of equal opportunity by the Employment Equality Agency, which regards the "development of positive initiatives" at an organisational level to "remove barriers and encourage change" as part of its role. As part of this strategy, the Agency played a lead role in the operation and development of "Equality Focus". This award scheme was first run in 1990, when it was designed to recognise the achievements of companies and personnel practitioners who had made real progress in removing sex-based differentials in personnel performance in any area of company operations. The 1992 scheme was aimed at companies who, through a specific initiative, had in their day-to-day operations and personnel practice done most to break down sex stereotyping and imbalances in the company's personnel profile.

6.4.3 Facilitative Policies

The scope for "facilitative policies" which, while not aimed specifically at pay or promotion, might still be expected to have a significant impact on the male-female wage gap, was discussed earlier. Such policies might take the form, for example, of the provision of special education and training in labour market oriented skills for women, the

furnishing of adequate job-support facilities such as flexible working arrangements and childcare facilities for women *and* men with families etc. Legislation was passed on two such issues under the *Employment Equality Act* of 1977. The Act prohibited discrimination by employment agencies in job placement services, career guidance and the provision of employment information. It also prohibited discrimination in admission to, and treatment on, vocational training programmes, but, as noted earlier, allowed for the training of members of one sex only for work which had previously been dominated by the other sex.

More positive action was taken under the Programme for National Recovery, when the FAS Positive Action Programme was set up to expand the opportunities for women to take up careers in non-traditional areas by setting precise targets and pre-apprenticeship courses. These targets were to be increased under the PESP. In addition, in 1978, a special area was introduced into the ESF funds for vocational training, to provide training specifically for women of 25 or over who have lost their jobs, or wish to exercise an occupation for the first time or after a long break or have insufficient vocational qualifications.

The significance of measures designed to help women combine paid employment with family responsibilities to an attempt to achieve the goal of equality of opportunity has been widely recognised. The passing in 1981 of the *Maternity Protection of Employees Act* was an important first step in this direction. It guaranteed to women the right to take maternity leave and additional maternity leave, the right to return to work, the right to leave for ante-natal and post-natal care, and the right to the protection of their jobs during this leave time. Disputes on these issues were to be referred to a Rights Commissioner or to the Employment Appeals Tribunal.

The EC in recent years been giving more consideration to provisions intended to address the goal of equality of opportunity by alleviating the unequal burdens which may be faced by women outside the labour market. Measures relating to paternal and family leave, designed to reduce the unequal burden of family responsibilities on women by guaranteeing both parents greater and more equal rights to leave for family reasons have been discussed. In December 1991, the EC Council of Ministers approved a Recommendation on Childcare, which dealt with the improvement of childcare services and encouraging the sharing of parental tasks. The report of the European Commission Childcare Network on childcare and equal opportunity has recommended a directive on childcare, with targets which would require substantial resources to be devoted to public provision of this service.

At national level, the Irish government has also been giving consideration to further policy developments in these areas. It defined its role on the childcare issue in the PESP as being to "stimulate the development of childcare services by employers". More recently, the Programme for a Partnership Government undertook to provide incentives for employers to provide childcare facilities in the workplace. The PESP also contained a commitment to pursue the provision of childcare services for working parents and promised that the Minister for Labour would identify suitable prototypes for Irish childcare services and exploit fully the potential for EC support, as well as laying out plans to provide such services for public sector employees. It was indicated that arrangements for the supervision and inspection of pre-schools, playgroups, creches and nurseries would be introduced. As yet, however, the overall shape of future policy in this area is unclear.

Tracing the changes in the wage ratio over the last 20 years in Ireland provides a superficial indication of the impact of the various forms of policy and legislation introduced in this country aimed at reducing the wage gap. The wage ratio amongst manual workers in manufacturing increased slightly in 1974, the year that the Anti-Discrimination (Pay) Act was passed. More noteworthy, however, is the significant increase in the wage ratio from just over 60 per cent to almost 70 per cent in the 3 years following the implementation of the Employment Equality Act and the establishment of the Employment Equality Agency in 1977. Since 1980, however, the wage ratio has remained more or less stable, suggesting that the main impact of such legislation has already been experienced. While the full potential may not yet have been realised, the analysis contained here, together with experience from other countries suggests that the unrealised potential for an aggregate reduction in the wage gap *via* legislation of this type is probably rather limited. However, existing legislation obviously plays a role in preventing the re-emergence of discriminatory payment systems.

6.5 Childcare Policy and Wage Differentials

The most important single factor in explaining the wage gap is differences in length of labour market experience between men and women. Child-related interruptions to women's labour market careers clearly have a major bearing on this factor. The expectation of such temporary or permanent withdrawals from the labour market may have significant indirect effects, by reducing levels of investment in women's education and training. This could represent an economically rational

response by women to their perceived future plans and prospects. But it is often argued (e.g., by Thurow, 1975) that it could also give rise to what is termed "statistical discrimination" by employers.

The basis for this argument is that an employer's investment in an employee's training will be related to the length of time the employee is expected to stay with that employer. Other things being equal, it is argued, a female employee is likely to stay with the employer for a shorter period of time, because she is more likely than a man to withdraw from the labour force, or change to part-time work, for reasons related to child-bearing and child-rearing. Given such assumptions, Thurow contends that economically rational employer responses would tend to reduce investment in women's training as against men's.¹⁰ If there is such a tendency, for whatever reason, child-related interruptions to women's careers could affect all women in the labour force to some degree, and not just those with children.

In any event, the role of child-related interruptions to labour market participation in reducing women's wages relative to men's is clear. It seems equally clear that equality of labour market *outcomes* cannot be achieved without policy intervention in this area. But does this mean that equality of labour market *opportunity* cannot be achieved without state support for childcare?¹¹ In order to answer this question it is necessary to probe into the division of labour within families in considerable depth. But the observed outcomes are consistent with a number of different interpretations: the available evidence is not sufficient to decide clearly on the balance of forces at work.

Models of the economic forces at work in this situation, pioneered by Becker, show that a division of labour which sees one partner specialize in market work and the other in domestic work can arise simply from the maximisation of overall household welfare. The allocation of the "gains from cooperation" still depends on the nature of bargaining, but even if allocated equally, a "wage gap" in paid employment will still be observed. Becker (1981) shows that the common tendency for wages to rise with

¹⁰Cain (1986) accepts that this would represent discrimination against women who plan to stay in a job for longer than the average, but argues that it would result in favourable treatment for those staying for less than the average period. But Cain's overall conclusion is that neo-classical models, such as the one implicit in Thurow's argument, do not provide a convincing explanation of the reality of discrimination.

¹¹For a more general review of arguments for state support of childcare, see Callan and Farrell (1992).

labour market experience can lead to such results even when both partners have identical earning capacities in the market, and fully equal opportunities.

An alternative perspective sees the outcomes as generated by quite different forces. Some would argue that the current division of non-paid work, whereby women are the "major providers of care for children and the elderly [and] also administer and manage most other aspects of domestic life" is an "inequitable" one (Elias and Purcell, 1988). This suggests that external constraints and/or unequal bargaining between men and women, give rise to an unfair burden being placed on women in terms of childcare and other responsibilities. The influence of social norms, as well as purely economic factors, on the nature of such internal bargaining, even on a couple with identical preferences and similar capabilities, must be recognised. In Irish society, as in many others, the right and duty of the man to act as "breadwinner" has been strongly entrenched, along with the responsibility of women for the provision of childcare and running of the home. Attitudes towards these basic rights and duties have changed over the years: women's right to work in the paid labour market has become more firmly established, and there have been changes in the role played by men in childcare and domestic tasks. Nevertheless, it seems to us that there is a tension between a societal aspiration to equality of labour market opportunity between the sexes, and societal attitudes regarding the relative roles of men and women in the labour market and the home.

These societal attitudes can play a significant role in the decisions made by individual families on childcare arrangements and labour market participation. Such decisions involve some elements of implicit or explicit bargaining. As Sen (quoted in Swedberg, 1991) points out, however, the circumstances of families are such that the system of internal bargaining (especially in so far as it is often implicit) is a particularly complex one:

given the very nature of the family - that people live together constantly, that they share the same room, the same cooking pot, sometimes even the same bed, and so on - it is very hard for the conflicting elements to be faced starkly...So the conflicting elements tend to be hidden, and people don't see them. What therefore happens is that there is a kind of agreed upon perception as to how these conflicts should be resolved, and this usually takes the form of some kind of legitimacy notion, which everybody accepts. In sexist societies it may take the form that the men get more than the women in the division of food or health care, and that the boys get more than the girls. But even if there is an

unequal solution, this is not seen as a resolution to a conflict because the elements of conflict have to be kept below the surface. Instead, it looks as if it is just the natural order, indeed "the only sensible way" of thinking about it. (Sen, quoted in Swedberg, 1991: 257)

Sen is talking here about the situation in families in generally much poorer circumstances than we face in Ireland. His model of bargaining and the resolution of conflict within families is more generally applicable, however. He models the family as an institution where individual equal rights may be overridden in order to suppress the conflict which may threaten the survival of the unit as a whole. In the case of bargaining over childcare issues one conflict which may arise is over the division of career sacrifices. In the Irish context, it can be argued that the "legitimacy notion" against which women must contend is that women have the right to "choose" to seek paid work, while men "ought" to seek paid work. In effect, this notion places unequal weights on men's and women's rights as regards labour market careers, which could influence the nature of the bargain struck, even when both partners had identical preferences and capabilities.

6.7 Assessment and Conclusions

International experience with a wide range of policies relevant to male-female wage differentials was reviewed in this chapter. It is clear from this experience that ensuring the same rates of pay for men and women in the same jobs within an organisation is only a first step towards the equalisation of labour market opportunities. The practical problems encountered in trying to put the principle of "equal pay for equal value" into practice also appear to be significant, however. Comparable worth procedures such as those put in place in the USA and Canada seem to have had quite substantial effects in particular cases, but with a limited aggregate impact. There appears to be some evidence from the experience of Scandinavian countries to suggest that, in their circumstances, the principle can be more effectively implemented through the collective bargaining process than through legislation; but many other factors, such as the package of facilitating policies (childcare, parental leave, and so on) also come into play in these countries' experiences.

The limitations of complaints-based legislative systems as a means of achieving equality in pay have already been discussed. The Employment Equality Agency has expressed the opinion that the number of cases actually brought forward under the two anti-discrimination acts

under-estimates the extent of discrimination in the workplace in Ireland. It has also called for a reversal of the burden of proof in equality cases, forcing the employer to furnish the information required by the claimant in such cases. The second EC Medium Term Community Programme also contained a commitment to bring forward a legal instrument on the reversal of proof in equality cases. The Department of Labour's 1987 Discussion Document highlighted many of the areas where reform and consolidation of the two Acts could make their practical implementation more effective.

In recent years, however, both at national and EC level, there has been an increasing recognition of the limitations of complaints based legislative systems as a policy tool aimed at the achievement of equal pay. As a result the emphasis has turned more towards the implementation of positive action programmes at an organisational level and the need for a package of policies facilitating women's participation in the labour market on a basis of equality.

Positive action programmes can vary considerably both in their goals and in their strength. Some of the affirmative action plans used in the US can be seen as a strong, positively discriminating tool designed as a temporary measure to compensate women for past discrimination and to eradicate systemic discrimination. Positive action programmes in Ireland, as in many European countries, have not been of this type. The programme in place in the Civil Service does not, in general, include definite targets for hiring or promotion in the US-style, but focuses on analysis and monitoring to identify and resolve potential problems. In the private sector, the EEA's "Equality Focus" scheme constitutes the first step towards a positive action programme. Limited as it is to an awards scheme, however, its effects are unlikely to be very far reaching and its most important role will probably be to draw attention to the issue.

As regards facilitating policies, some steps have been taken in the areas of vocational training and the provision of maternity leave. Given the impact of family commitments on women's labour market participation, and the fact that differences in labour market experience account for about 10 percentage points of the gap between male and female wages, possible changes in policies on childcare and parental leave are of particular interest. It is sometimes argued that the provision of adequate parental and family leave are necessary if it is to be made possible for family responsibilities to be shared equally. But Swedish evidence indicates that women are more likely to actually use such leave entitlements, with attendant risks for their later labour market careers.

A comprehensive review of the objectives of state policy in the area of childcare and child income support would seem to be necessary in order to identify the appropriate policy interventions in this area. A strong case can be made for state intervention from an equal opportunity perspective; but this is not the only perspective which is relevant in this area. For example, some studies suggest that there are developmental advantages for children from early pre-school education; from this point of view, it would be desirable if such facilities were available to all, and not just to the children of parents at work. Tax allowances for childcare are not recommended, for the reasons outlined in Callan and Farrell (1992): they would give greatest support to those on the highest incomes, while being of no value to those below the income tax threshold. More generally, the distributive effects of state expenditure on the support of childcare could also be of concern. The state already makes contributions towards the support of children, both in cash and in kind, ultimately financed by taxation. State financial support for childcare must also be considered in this overall context, where decisions are made about the degree to which the state allocates resources for the benefit of children in families at different income levels, and the tax-financing package is also taken into account.¹²

In the Programme for Economic and Social Progress, government policy in this area was defined as being "to stimulate the development of childcare services by employers, individually and collectively, and also including partnerships between public authorities and employers". If this policy involved shifting the responsibility for the provision of such services onto employers, however, the costs of hiring female labour might be raised. The disincentive effects involved in such an increase could therefore have a negative effect of female employment opportunities and hence on the reduction of the wage gap. While it is true that provision of workplace nurseries can be of benefit to employers (through improved morale and productivity, reduced absenteeism, and lower staff turnover), this does not create a general case for mandatory employer provision of such services. There may be some role for state agencies in disseminating the relevant information, but it would be difficult to argue that employers are not the best judges of their own interests in such matters.

¹²Some packages would result in a transfer of resources from those without children to those with children; others would result in much more complex transfers of resources with differential effects on high, medium and low income one-earner and two-earner couples.

A more general issue is the extent to which the objective of equality of opportunity may conflict with other goals of public policy. One potential conflict is between increased regulation of the labour market and maximisation of employment. Even if there are imperfections in the labour market giving rise to unequal opportunities, which increased legislative action could reduce, it is quite likely that an unintended by-product of such legislation would be to increase the costs of employing labour. Similarly, if the state were to provide greater financial resources for childcare, the increase in tax revenue required to finance this expansion could have a detrimental economic impact. Thus, a balance has to be struck between the desired objective of greater equality of opportunity and the potential detrimental effects of policy measures on other desired goals.

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