

LOW PAY IN EUROPE AND THE USA: EVIDENCE FROM
HARMONISED DATA

ESRC Centre for Business Research, University of Cambridge
Working Paper No. 87

Paul Robson
ESRC Centre for Business Research
and Department of Geography
University of Cambridge
Downing Place
Cambridge CB2 3EN

Phone: 01223 339818
Fax: 01223 333392
E-Mail: pjr1003@cus.cam.ac.uk

Frank Wilkinson
ESRC Centre for Business Research
Department of Applied Economics
University of Cambridge
Sidgwick Avenue
Cambridge CB3 9DE

Phone: 01223 335262
Fax: 01223 335768
E-Mail: sfw11@econ.cam.ac.uk

Shirley Dex
Judge Institute of Management Studies
University of Cambridge
Trumpington Street
Cambridge CB2 1AG

Phone: 01223 339628
Fax: 01223 339701
E-Mail: sd129@cam.ac.uk

Olga Salido
Instituto De Estudios Sociales
(CSIC)
c/Alfonso XII, 18 5
Madrid 28014
Spain

E-Mail: olgas@iesa.csic.es

June 1998

This Working Paper relates to the CBR Research Programme on Corporate
Governance, Contracts and Incentives.

Abstract

This paper calculates the extent of low pay in Britain, Germany, Luxembourg, Spain and the USA using a newly harmonised data set, PACO, and the European household panel study for Spain. The data are all based on nationally representative household panel studies from each country. The paper adopts an hourly definition of low pay based on being paid less per hour than 66 per cent of the male median hourly earnings. We examine the extent to which countries' systems of collective bargaining and minimum wage regimes help to explain the differences between their distributions of low paid by industry, size of firm, occupation, type of contract, and public-private sector, all with a gender dimension. At one level, the findings support the proposition that strong collective bargaining regimes and minimum wages help to reduce the percentage of low paid workers. However, the benefits of such bargaining did not extend to women and especially part-time women employees as much as they did to male employees.

Acknowledgements

The data used in this study are from the public use version of the PACO datafiles, including data from the British Household Panel Study, the French (Lorraine) Panel Study, the German Socio-economic Panel Study, the Living in Luxembourg Household Panel Study and the United States Panel Study of Income Dynamics. The comparable variables in this datafile were created by the PACO project, co-ordinated through CEPS/INSTEAD in Luxembourg. They were used with permission of CEPS/INSTEAD Luxembourg. This work has been funded by the European Union and Unison and the Centre for Business Research, University of Cambridge.

Further information about the ESRC Centre for Business Research can be found on the World Wide Web at the following address: <http://www.cbr.cam.ac.uk>

LOW PAY IN EUROPE AND THE USA: EVIDENCE FROM HARMONISED DATA

1. Introduction

The problem of low pay and labour market regulation are at the centre of economic and social policy in Europe and the USA. The ensuing debate has focused upon employment creation, competitiveness, technology and minimum wages (Grieve-Smith, et al., 1996; Schechter, 1993; Manning, 1997; Ingram, 1997; Sisson and Edwards, 1997; Fernie and Metcalf, 1996; Machin and Manning, 1996; Card and Krueger, 1995; Freeman, 1996; Bazen, 1994; Shaheed, 1994; Dolado et al, 1996). Low pay is also closely linked with issues of discrimination and poverty (Naylor, 1994; Sutherland, 1997; Gosling, 1997). Previous research has examined the mobility of low paid workers and the impact of wage boards and councils (Sloane and Theodossiou, 1996; Bell and Wright, 1996), the extent of low pay within individual countries (Dex, et al., 1994; Machin, 1997) and the extent of low pay across European countries (CERC, 1992). A new opportunity to carry out comparisons across countries has arisen with the introduction of the harmonised data generated by the PACO (PAnel COmparability) project. Cross-national comparisons provide an ideal way of examining the effects of country-specific elements. In this paper we investigate the different incidence and characteristics of low pay across countries in the context of country-specific differences in the systems of minimum wages and collective bargaining institutions. The countries which are analysed in this paper are, Britain, Germany, Luxembourg, Spain, and the USA.

The lack of harmonised data has until recently hindered the ability of researchers to compare low pay across Europe. Pioneering work was undertaken by a report by the Centre d'Etudes des Revenues et des Coûts (CERC, 1992) using data from the 1980s, and cited by Rubery and Fagan (1993). Focusing on the percentage of full-time workers earning less than 66 per cent of the overall median wage the countries

can be divided into three groups. Firstly, Belgium had only 5 per cent low paid. Secondly, the Netherlands, Portugal, Germany, France, and Italy who recorded from 11 to 15 per cent low paid workers, and finally, Ireland, Spain, and the United Kingdom who all had from 18 to 20 per cent low paid workers. Extending the definition of low pay to those earning less than 80 per cent of overall median earnings the numbers of low paid workers increased greatly. The UK had the largest percentage of low paid full-time workers, 35 per cent, and West Germany the lowest at 25 per cent in comparison to the other countries.

The proportion of low paid (less than 66 per cent of the median wage) in these countries was found to be 3 to 4 times higher for part-timers than for full-time workers, at 60 per cent as against 17 per cent for the UK and 23 per cent against 11 per cent in the Netherlands (CERC, 1992: 53). CERC's (1992) preliminary examinations indicated that the low paid were predominantly found in labour-intensive industries, in small establishments and in unskilled jobs, without security or where there is a high turnover of labour.

We would expect that the institutional arrangements affecting wage determination in a country are likely to influence the extent of low pay. If a minimum wage is implemented in a country then we might expect a reduction in the incidence of low pay. However, there are some important qualifications. The amelioration of the worst effects of low pay and poverty are dependent upon the level at which a minimum wage operates, and the extent of the coverage of the minimum wage. If a minimum wage is set at a very low level, or it excludes large sections of workers, or it is not enforced, then the effect of a minimum wage on low pay may be negligible. Commentators have also suggested that there is a relationship between collective bargaining and the incidence of low pay. More specifically, it is suggested that the stronger and more extensive the coverage of the system of collective bargaining the smaller the number or proportion of low paid workers. Collective bargaining can negotiate

wages higher than those set by minimum wages to the benefit of low paid workers. However, it is possible that collective bargaining could also contribute to the other inequalities between workers; for example, the institutionalisation of a gender wage gap between men and women (Rubery and Fagan, 1993). These issues are explored below.

In the rest of this paper we consider first the definition of low pay (Section 2). Section 3 describes the differences in the systems of minimum wages and collective agreement mechanisms within Europe and the USA and outlines the hypotheses which are addressed in this paper. Section 4 describes the data and provides an economic canvass of the state of the countries in this study in the years in question. Sections 5 to 10 present our analyses of low pay in Europe and the USA. The final section (11) contains our conclusions.

2. Defining Low Pay

The definition of low pay used in a study will influence the quantity of low paid workers (Dex et al.,1994). Two definitions are most common:

- 1) Council of Europe (CE): Low pay is earnings below 68 per cent of adult full-time mean weekly earnings.
- 2) Low Pay Unit (LPU): Low pay is earnings below two thirds of median male weekly earnings. ¹

The justification of these definitions is rarely stated but some measure of subsistence is clearly an underlying motivation. Hence there has been an emphasis in each of the above definitions upon a weekly time framework. However, for studies which focus on labour market issues, as argued previously in Dex et al. (1994), an hourly wage rate is the most appropriate way of defining low pay rather than individuals' weekly earnings or income. This paper uses an hourly version of the LPU definition of before-tax wages. We recognise but

cannot take account of fringe benefit differences between jobs which affect the total value of earnings.

There is also the issue of whether or not to include overtime in our calculations of low pay. Given the importance which employers place upon workers' flexibility and willingness to perform overtime the case for the inclusion of overtime earnings and hours becomes compelling.²

3. Institutions of Industrial Relations

A great diversity of minimum wage provision and collective wage agreements exist across industrialised countries. Thus, comparatively recent hourly rates of minimum wages, after conversion into sterling using purchasing power parity exchange rates, range from £1.64 in Portugal to £4.32 in Belgium (Table A1). The large variety of systems of minimum wages and collective bargaining regimes have been classified by a number of authors. Dolado et al (1996) suggest that there are five types of minimum wage system. In one case, a statutory minimum is set by the government (Spain, Luxembourg), possibly in consultation with employers; a second system, as in Greece, Denmark or Belgium, sets a national minimum wage as part of national collective bargains; minimum wages can be set, thirdly, by sectoral agreements as in Germany, Italy or Austria; fourthly, in Sweden, Norway and Finland, collective agreements effectively cover everyone and generally contain minimum rates; fifthly, minimum rates can apply solely to selected low paying industries, as in Ireland and the UK prior to 1993. Rubery and Fagan (1993) suggested a five fold classification of the combined wage setting institutions of collective bargaining and minimum wages. On the whole these groupings put countries together in the same way as the classification of Dolado et al (1996).

A number of types of regime are represented in our data. We have two examples, Spain and Luxembourg, where a statutory minimum wage

is set by the state but is combined with weak or uneven collective bargaining. In addition, the minimum wage rates are set at very low levels³ and have a small amount of coverage.⁴ We have one example, Germany, where collective bargaining and minimum wages are set as part of sectoral agreements and can vary considerably across sectors but collective bargaining is strong. Also, the majority of firms pay at least minimum rates in order to attract and retain staff (EIRR, 1996). The provision of collective bargaining in the UK is uneven and there are effectively no minimum wage arrangements.⁵ The USA has a weak and company-based system of collective bargaining for workers with a very low minimum wage. Although the USA has a long history of minimum wages in recent years the minimum wage has been set at a low rate. However, the Federal US hourly minimum wage was \$3.35 in 1987 which was the year for which we possess data and that rate had been in force since 1981.⁶

In this paper we are interested in examining whether countries' institutional systems of pay determination through collective bargaining and minimum wages affect their relative extent of low pay. We might expect that the existence of a minimum wage would tend to reduce the extent of low pay in a country, unless the level is set very low. We would also expect that more centralised systems of collective bargaining would reduce the extent of low pay if they cover low paid as well as high paid workers. When these institutional mechanisms are combined we can formulate the following hypotheses for the countries in our data:

We would expect low pay to feature least under the German system of strong collective bargaining with effective and relatively high rates for minimum wages. However, since collective bargaining is by sector we would expect there to be more variation in the extent of low pay across sectors in Germany compared with aggregate national figures. At the other end of the spectrum, the USA and Britain both have weak and company-based collective bargaining and either no minimum wage or such low rates as to be meaningless. A priori it is difficult to

predict which of these countries would rank highest in the extent of low pay. However, the UK still has more collective bargaining and union membership than the USA and probably less commitment to deregulated markets. This would lead us to expect the highest percentages of low pay in the USA, from the countries considered, with the UK in second place. The uneven collective bargaining and low coverage of minimum wages in Spain and Luxembourg would be expected to place them somewhere between Germany and the US/UK in terms of low pay ranking; however, we might expect low pay to be less where the coverage is better in these countries. However, in all cases, it is possible that the extent of low pay may vary by gender. It is also possible that gender variation may be more pronounced than country differences. With the exception of Rubery and Fagan (1993) relatively little consideration has been given to the links between gender, collective bargaining and low pay. This is a state of affairs which we hope to improve.

After describing our data in more detail, we examine the extent of low pay across our countries, through national averages, and also by industry and occupation sectors. In addition, and to increase our understanding, we have calculated the extent of low pay by type of employer, public or private sector, contractual situation, and size of firm. All our analyses are carried out for men and women in order to give gender issues more consideration.

4. Data and Economic Context

The PACO project was initiated with the objective of creating a harmonised and standardised micro-database on living conditions of households in Europe using existing data. We have used the most recent cross-sections from five large-scale nationally representative panel studies from PACO; the 1992 Luxembourg Panel Socio-Economique Liewen zu Letzebuerg (PSELL); the 1990 German Sozio-Oekonomisches Panel/Bundesrepublik Deutschland (SOEP); the 1993 British Household Panel Study (BHPS); and the 1987 US

Panel Study of Income Dynamics (PSID). In addition we have been able to include data from the 1994 Spanish European Household Panel Study (SEHP).

The harmonised hourly earnings measure of income used included normal wages and salaries, premia for piece-work, incentive pay, commissions, overtime pay, and premia for night and weekend work. PACO did not harmonise the systems of weights used (PACO, 1996). The weights for Luxembourg (PSELL) and Britain (BHPS) as well as Spain are rescaled to sum to the original sample size.⁷ The weights in the German (SOEP) data are rescaled to sum to the population size. The weights in the USA (PSID) are rescaled to sum to one per cent of the population size. Weighted results are provided throughout our analyses. However, the two sample size numbers are reported for Germany and the USA; one with and one without the weight applied

Luxembourg Luxembourg with a population of approximately 378,400, and covering an area of 2,586 square kilometres was the smallest country in this study (OECD, 1992). In 1992, apart from the steel industry which was in deep recession world-wide, most other sectors of the Luxembourg economy were in a favourable position. Total employment increased by approximately 4.3 per cent in both 1990 and 1991, and unemployment by the end of 1991 did not exceed 1.5 per cent of the labour force (OECD, 1992). Thus, the strong services sector was able to absorb the difficulties created by the recession-hit steel industry. Part-time workers constituted a low proportion of the Luxembourg labour force, although in the late 1980s and early 1990s part-time employment was increasing. Other noteworthy features of the Luxembourg economy included accelerating but still modest real wage increases of approximately 2.5 per cent, and low inflation of 3.1 per cent in 1991. Indeed, the OECD commented that, 'Luxembourg's inflation performance was one of the best within the EC, and its cumulated price increase since 1980 continues to be somewhat below the average of its four main trading

partners - Germany, Belgium, France and the Netherlands' (OECD, 1992: 93).

Germany Far reaching changes occurred from 1989 attributable to unification and the large disparity between the two Germanies.⁸ However, early in 1990, the year of our data, employment in Germany was growing at a rapid pace, industrial production remained healthy, private consumption was expanding strongly, and inflation was low. This last feature of the German economy was accounted for by the decline in import prices and the rise of the Deutschemark (OECD, 1990).

Britain The analysis of low pay in Britain took place using 1993 data. At the end of 1992 Britain was experiencing the longest recession in her post-war history. The problems associated with recession had contributed towards Britain's action of suspending its participation in the European Exchange Rate Mechanism on 16 September 1992. The British economy was in an unenviable position. The rate of unemployment was approximately 10 per cent, and the large decrease in employment had affected all sectors and regions of Britain.

USA At the end of 1986 the American economy was in a strong position. Growth had increased by approximately 3 per cent in 1986, and this growth continued in 1987. Unemployment was 7.0 per cent at the end of 1986 and was to continue falling in 1987, the year of our data, to reach a year end figure of 5.7 per cent (OECD, 1988). The boost in employment was largely focused upon the service sector. Wage settlements continued at a modest pace, and major wage settlements in 1986 had increased by 2.3 per cent (OECD, 1988).

Spain We have examined Spanish data for 1994. Spain had entered a recession in mid-1992, and in 1993 the effects of the recession were very evident. By the end of 1993 Spanish unemployment was 23.9 per cent, and in 1993 GDP had decreased by 1 per cent. The growing slack in the Spanish economy resulted in reduced pressures on

inflation. By the end of 1993 the inflation rate was approximately 5 per cent but also signs of recovery were evident which were later confirmed; however, these left the labour market unchanged. The persistent problems of high Spanish unemployment are thought to derive from particularly intensive periods of structural adjustment from the 1970s on; agriculture lost over one half of its employment whilst service sector and female employment displayed strong growth; men's unemployment remained high.

5. The Extent of Low Pay

The USA in 1987 had over a quarter of male workers who were low paid (Table 1). Britain, Luxembourg and Spain all had approximately one fifth of male workers in low paid jobs in the early 1990s. Only in Germany in 1990 was there a comparatively low incidence, 11 per cent, who were low paid. These rankings directly correspond to our initial expectations. However, these rankings were not wholly maintained when considering full-time women employees (Table 2). The USA had approximately one half of its full-time women in low paid employment in 1987. Women in Luxembourg were in a better position - but there were still 36 per cent of women in low paid jobs. Britain and Germany had approximately 30 per cent of full-time women who were low paid. In Spain 27 per cent of full-time women were low paid.

Low pay was generally more extensive amongst women employed part-time than amongst full-timers, except in Luxembourg (Table 3) and here the ranking of countries corresponded with that for men and with our expectations. 57 per cent of US part-time women were low paid. In Britain the equivalent percentage was 55 per cent. Germany, Luxembourg and Spain all recorded more than a third of part-time women in receipt of low pay. However, relatively few women were employed part time in Luxembourg.

Sensitivity analysis

We carried out a sensitivity exercise to see how far our results changed by adopting a different definition of low pay. As well as the Low Pay Unit definition, we used 50 per cent of male median hourly earnings. Tables 1, 2 and 3 present the different extents of low pay arising from the two definitions. For men we found that changing the definition resulted in approximately a 10 per cent difference in the extent of low pay in all countries. The difference was greater amongst full-time women workers, and ranges from 14 per cent in Spain to 24 per cent in Luxembourg. In the case of part-time women workers the difference approached one quarter of workers in Britain and Luxembourg, and a fifth of workers in Spain and Germany. In contrast, the USA has a smaller difference of 13 per cent, but it retained the highest overall proportions of low paid workers. However, the rankings across countries varied less than the figures on which they were based. Throughout the rest of this paper low pay has been calculated as those workers in receipt of less than 66 per cent of male median hourly earnings.

6. Industry Variations

The percentages of low pay varied enormously by industry, as well as by country. For men (Table 4) low pay was systematically high in agriculture, hunting, forestry, and fishing, and in Britain, Spain and the USA agriculture, hunting, forestry, and fishing had the highest percentages of the low paid amongst their male work force. In Germany and Luxembourg the highest percentages of low paid men were to be found in wholesale and retail trade and restaurants and hotels (Luxembourg, 44%; Germany, 33%) and transport, storage, and communication (Luxembourg, 46%); Britain and Spain also had a high percentage of low paid men in wholesale and retail trades and restaurants and hotels (Britain, 42%; Spain, 33%). Industries which commonly had amongst the lowest percentages of low paid men across a number of countries were mining and quarrying (Britain, 3%;

Spain, 7%; Germany, 9%; USA, 13%) and electricity, gas, and water (Spain, 3%; Britain, 4%; Luxembourg, 5%; Germany, 10%; USA, 13%).

Large disparities emerged between countries for particular industries. For example, in the financing, insurance, real estate, and business service industry 2 per cent of men were low paid in Germany, but 27 per cent in the USA. Similarly community, social, and personal services had 5 per cent of men who were low paid in Luxembourg, but 22 per cent in America, and 18 per cent in Britain.

Our figures suggest therefore that it is not systematically the same industries which are the sources of low pay across all countries. Whilst the USA had the highest overall rate of low paid male employees in 1987, it did not always have the highest rates in every industry; manufacturing, transport, storage, and communication, and wholesale and retail trade and restaurants and hotels were exceptions where the USA industries did not have the highest rates of low pay. Similarly, Germany, with its lowest rate of low paid men overall did not have the lowest industry rates in agriculture, hunting, forestry, and fishing; and mining, manufacturing, electricity, gas, and water; or community, social and personal services. These results fit broadly with our expectations. Countries with deregulated labour markets and uneven collective bargaining had the largest variations in low pay across sectors. Although generally the extent of low pay was lowest in Germany, where it was substantially higher, as in retail and restaurants and hotels, these are sectors where the bargained minimum wages rates in Germany were much lower than those in other German sectors (Rubery and Fagan, 1993, p.70).

In considering full-time women (Table 5), far fewer valid industry cell percentages are to be found compared with men. Clearly there was a greater extent of low pay in each country for full-time women than for employed men in every industry with two exceptions; in the USA women and men in finance, and in Spain women and men in

community and personal services had approximately similar levels of low paid employees. Otherwise, there were similarities between the sectoral distributions of low pay of men and full-time women employees; agriculture, hunting, forestry, and fishing; the wholesale and retail trade and restaurants and hotels contained some of the largest frequencies of full-time female low pay. Low pay amongst female workers was highest in the countries with the highest female participation rates (Britain; USA) which are also countries with the largest share of services and total employment.⁹ It may be the case that the expansion of services in Britain and the USA has been done by creating low paid jobs for women to a greater extent than in other countries, but the deregulated labour markets in these countries would lead us to expect higher rates of low pay.

As was the case for men, the USA did not systematically have the highest percentages of low paid full-time women in every industry; in fact the USA only had the highest industry percentages of full-time females who were low paid in manufacturing, construction, and wholesale and retail trade and restaurants and hotels, and community services. Also, Germany's percentages of female workforce who were low paid were not the lowest in community services.

There was more uniformity across countries for female part-timers than for other groups of workers (Table 6). Low pay is likely to be more extensive in similar industry groups when the workers are part-time women, although the cell numbers are small in some cases. The analysis of the industry variations in low pay not surprisingly revealed that low pay was most extensive amongst part-time women especially in the service industry and caring professions where part-time women tend to be represented disproportionately. Agriculture and the wholesale and retail trade and restaurants and hotels exhibited the highest incidences of low pay amongst part-time female workers in all countries. Britain had 80 per cent, the USA had 72 per cent and Germany had 53 per cent respectively low paid amongst female part-timers in the wholesale and retail trade and restaurants and hotels

industry; for the same industry part-time women in Spain fared considerably better than other countries and had only 38 per cent as low paid.

7. Occupation Variations

The percentages of low paid varied greatly by occupation, gender, and country. For men the highest percentages of low paid in all countries were found in the sales, personal, and protective services occupations; unskilled labour occupations; plant and machine operators; and clerical and secretarial occupations (Table 7). However, there were some large disparities in the percentages of low paid amongst these occupations. For example, low pay amongst men in the sales, personal and protective services occupation ranged from 13 per cent in Germany to 35 per cent in the USA, and 78 per cent in Britain. Also in the clerical and secretarial occupations low pay varied from 8 per cent in Germany and Luxembourg to 28 per cent in the USA and 63 per cent in Britain. Whilst the USA generally produced the highest percentages of the low paid this was not the case for men in clerical and secretarial occupations, sales and personnel and protective service occupations, and amongst managers and administrators. Indeed in the managers and administrators occupation Germany recorded the highest percentage, 14 per cent, of low paid men in this occupation.

The same occupations which contain the highest percentages of low paid men also contained the highest proportions of full-time women (Table 8). However, there were a greater percentage of women who were low paid than men. For example, there were 75 per cent of full-time women in the sales, personal, and protective services occupations who were low paid in the USA. This compared with 35 per cent of men in the USA, and 78 per cent of men in Britain who were low paid. We also examined part-time women employees. Sales, personal, and protective services occupations (USA, 83%; Britain, 72%; Germany, 61%; Spain, 34%), and plant and machine operations (Germany, 53%) and clerical and secretarial occupations (Britain,

43%) contained the highest percentages of low paid part-time women workers. In Spain a substantial proportion of part-time women were employed in unskilled labour occupations, and half of these were found to be low paid.

For all workers, the lowest percentages of low paid were found in managers and administrators, professional occupations, and associate professional occupations. For men and full-time women the lowest percentages of low paid were found in the professional occupations. For professional men this ranged from 4 per cent low paid in Spain, 5 per cent in Britain to 8 per cent in Germany and Luxembourg. Women in full-time professional occupations had 1 per cent who were low paid which was the smallest percentage for all countries and occupations. Full-time women in Britain in professional occupations had 7 per cent low paid, which compared favourably with men, and other occupations performed by full-time women. Full-time women in professional occupations in Germany and the USA recorded 19 per cent and 14 per cent low pay respectively and these were considerably higher values than those for men in professional occupations.

The superior levels of pay in high status occupations is not surprising. Also, it is not particularly attributable to minimum wage regimes since pay levels in these jobs are usually well outside the range of minimum wage levels. However, it is interesting to note the variation in gender inequalities which whilst systematically less in the higher status occupations still vary considerably by country. The gaps were largest in the USA with its most deregulated labour market, but also in Germany.

8. Public-Private Sector Variations

Our data allow us to examine differences in the extent of low pay in the public or private sectors for different groups of workers.¹⁰ The favourable position of public workers relative to private sector workers in some countries is increasingly contributing to an important

public policy debate in the USA and in Europe. Cox and Brunelli (1994, 1992) have argued that the public sector in the USA is overstaffed and overpaid when compared with the private sector. Cox and Brunelli (1994, 1992) argued that a downsizing of public sector expenditure was desirable, and would be achieved by the implementation of comparative competitive tendering of selected government services. On the other hand, conditions and pay arrangements in the public sector in Britain have been worsening (Escott and Whitfield, 1995; PSPRU, 1996, 1995). Previous research into the abolition of six wage councils (Craig et al. 1982) found clear evidence of a deterioration in both remuneration and conditions of employment for the lowest pay grades after abolition. However evidence from the recent Wages Council abolition suggests that there has been little effect on pay (Dolado et al, 1996). European attempts to reach the target deficits for monetary union means that in several countries, the reduction of the public-sector pay bill will be the only way of meeting these targets (Marsden, 1992).

In all countries and for all types and genders (apart from men in Germany) there were larger percentages of low paid workers in the private than in the public sector (Tables 9 to 11). The greatest disparities between the public and private were amongst Britain's part-time women employees (66% private and 36% public) and similarly in the USA (60% private and 45% public). Luxembourg also had a large gap for this group of women but very few part-time women employees. Although full-time women workers recorded lower percentages than part-time women of low paid, approaching one third of full-time women in Britain, Germany, and Luxembourg were low paid, and nearly half of these women in the USA (Table 10). Men, full-time women and part-time women in the public sector in Spain recorded the lowest percentages of low paid workers. More specifically, 5 per cent of employed men and 4 per cent of full-time employed women in the public sector in Spain were low paid. From 1986 to 1992, the Spanish public administration went through a period of decentralisation sometimes called 'the period of

multiplication' in which many secure well-paid civil servant jobs were created for men and women. This development probably explains Spain's superior public sector performance.

Only amongst German male employment was there hardly any difference between the extent of low pay in the public and private sectors. Germany contained the smallest proportion of low paid workers overall, as we have already seen. It is interesting to see that this extends across public and private sectors for men although not for women. In the other four countries Britain, Luxembourg, Spain and the USA, approaching 25 per cent of private sector workers could be classified as being low paid. Amongst public sector workers, the range was from 5 per cent in Spain to 20 per cent in the USA. The USA results are compatible with Miller's (1996) analysis of occupations which found that workers who were in low paid jobs were more likely to be paid better in the public sector, but workers in high paid jobs were more likely to be better paid in the private sector.¹¹ However, it is interesting to note that the gap between public and private sectors, in terms of their degrees of low pay, is not smaller in Britain than in the USA as current debates may lead us to expect. Privatisation may have reduced the pay of some former public sector workers, at the same time reclassifying them to the private sector.

9. Type of Contract Variations¹²

As the worker's employment flexibility increased there were greater percentages of low paid workers (Tables 12 to 14). In all cases where there was sufficient sample size, being low paid was far less likely for workers who had permanent contracts compared with workers who had been employed on fixed term or 'no contract' jobs. Germany had the lowest percentage of low paid men and full-time employed women who were employed on permanent contracts (9% for men; 27% for full-time women). Low pay was very high, often two-thirds or more, amongst men and full-time employed women who did not have contracts - although Germany is something of an exception in the case

of men (38% were low paid). Men in Britain and Luxembourg had approximately a fifth of workers who were low paid when employed on permanent contracts. The proportions of men who were low paid in these two countries were more than doubled for fixed term contracts, as compared with permanent contracts. The extent of low paid amongst women employed part-time is similar to that for women employed full time and men in being least for permanent and greatest where there were no contracts. However, British part-time women were an exception; the largest proportion of low paid was amongst women with permanent contracts (56%). This tends to confirm claims that British women's part-time jobs are disproportionately low skilled and low paid in Europe (Rubery and Fagan, 1994).

10. Size of Firm Variations

Comparisons between sizes of firm were complicated by each country adopting different categories of firm size in their national surveys. However, it is apparent that low pay was clearly more extensive in small firms in every country, and for all types of employee and gender (Tables 15 to 17). There were greater proportions of low paid male workers in the smallest sized categories of firms in Britain than in Spain, Luxembourg or Germany. This was 39 per cent in Britain (1-9 employees), 35 per cent in Spain (1-19), 27 per cent in Luxembourg (1-9 employees) and 23 per cent in Germany (1-19 employees) (Table 15). The decline in low pay as firm size increased was most pronounced in Germany where only 8 per cent of male workers in firms with 20-199 employees were low paid. Britain and Luxembourg by contrast had approximately a quarter of low paid male workers employed in firms of comparable size.

Despite the small number of valid cells it was clear that the ranking across the groups was maintained after controlling for size of firm, with men having the least amounts of low pay followed by women employed full-time and lastly women employed part-time. Part-time women in small establishments had the highest frequencies of low

paid. This amounted to two thirds of workers in Britain, and approximately half the workers in Germany, Luxembourg and Spain. The position of women part-time workers is partly explained by women disproportionately occupying part-time jobs in certain low paying industries such as wholesale and retail trade and restaurants and hotels; and community, social and personal services.

11. Conclusions

This paper has examined whether the extent of low pay was systematically related to the nature of the minimum wage system, and the type and extent of collective bargaining within Britain, Germany, Luxembourg, Spain, and the USA. By using the median wage rate of each country as the benchmark for calculating low pay and reflecting each nation state's earnings structure, we have been able to examine how effective the different regulatory systems are in influencing the distribution of earnings and in protecting low paid workers (CERC, 1992). We have also been able to examine gender differences and both full-time and part-time women employees in these respects.

Overall, the national averages and sectoral incidences of low pay were in line with our predictions. Germany's strong system of collective bargaining resulted in her possessing the lowest percentages of low paid workers. In the USA the presence of a very low minimum wage and weak bargaining was seen to have a minimal impact on reducing the number of low paid workers. Britain consistently was ranked second to the USA in terms of percentages of low paid workers; this rank is associated with uneven collective bargaining, no minimum wage and an emphasis on creating a deregulated labour market. Although Spain and Luxembourg both had weak and uneven systems of minimum wages, the presence of the legally binding collective agreements and minimum wages had contributed to Spain and Luxembourg recording lower percentages of low pay than Britain or the USA. However, strong collective bargaining and minimum wages did not appear to have eliminated the gender gap to any significant

degree. Also gender differences in the extent of low pay were at least as great as between country differences, especially in the case of women's part-time employment.

Some results were common to all countries. Low pay was found to be most prevalent in the wholesale and retail trade and restaurants and hotels; and transport, storage, and communication industries. Occupations with the highest incidences of low pay were sales, personal, and protective services, plant and machine operations, and unskilled labour occupations. There were significantly more low paid workers in the private sector than in the public sector for the countries examined in this article. Low pay was also found to have its strongest presence in the smallest size of firms. Fewer cases of low pay were discovered as the size of firms increased. Finally, the more secure a worker's employment contract the smaller the percentage of low paid workers. These similarities occurred despite differing economic conditions applying in our countries at the cross-sectional years examined. It was also the case that both the highest and lowest rankings of low pay came from countries, the USA and Germany, both with favourable economic conditions at the time. In this sense, we think the patterns observed are more to do with how jobs are structured in each country than they are to do with the economic climate.

The public sectors of all our countries played an important role in reducing low pay for men and women and for both full- and part-time employees. In part these benefits derive from collective bargaining being stronger within the public than the private sector in many countries. The benefits of the public sector employment on pay were most marked in Spain and least notable in Germany. However the gap in the strength of bargaining between the two sectors is probably less in Germany and in Spain particular policies have boosted the public sector pay more recently.

Our findings initially seemed to support the proposition that the presence of strong collective bargaining regimes and minimum wages reduces the percentages of low paid workers. However, closer examination of the evidence suggests that the benefits of strong collective bargaining and minimum wages policies are not equally distributed both between men and women or between full-time women and part time women. Indeed the benefits of strong collective bargaining and minimum wages were greatest for men and least for part-time women workers. Despite Germany's strong collective agreements to determine minimum rates for different sectors, full-time and in particular part-time women workers whether classified by employment sector, occupation, type of employer, contractual situation, or size of firm experienced more low pay than men.

Notes

1. The Royal Commission on the Distribution of Income and Wealth (1979) defined low pay as being pay below the bottom decile of the weekly pay distribution of full-time male median workers. The TUC in Britain has argued that low pay should be defined as earnings below two thirds of male manual mean weekly earnings.
2. In particular, given that in some instances workers will be discharged from their employment duties if they were reticent or unwilling to perform overtime, the number of hours of overtime work is included, and also overtime remuneration is included.
3. In Spain, since 1994 the payment of a statutory supplement to the minimum wage for overtime, night work and arduous work has been abolished.
4. The statutory minimum wage covers 13 per cent of the workforce in Luxembourg, and about 200,000 employees in Spain (Table A2). Both Spain and Luxembourg have procedures for extending collectively agreed industry minima to non-signatory parties.
5. In the UK the only form of legal minimum rates of pay exists for agriculture. This is the last vestige of the system of Wages Councils which set statutory minimum rates for more than 2 million workers, but was abolished on August 30, 1993.
6. The Federal US hourly minimum wage increased to \$5.15 in July 1997.
7. A special weight variable was employed for Luxembourg to take into account the inclusion of the extension in 1991.

8. The unification of Germany was accomplished remarkably quickly. July 1, 1990 monetary and economic union between the Federal Republic and the Democratic Republic. October 3, 1990 full political unification.
9. There was a 71.9% participation rate for women aged 25-54 years in 1987 in the USA (Herz, 1988). The participation rate in 1989 for women aged 25-49 years for the other countries in our study were as follows: Spain (47.9%), Luxembourg (51.6%), Germany (63.4%), and the United Kingdom (72.7%) (Meulders et al. 1993).
10. The PACO researchers divided workers into two categories - public employer, and private employer. A private sector employer was defined as all those companies which have the primary objective to attain profits. In contrast, public sector employers are interpreted as establishments which are run by the state and which have the primary objective to produce services. It does not necessarily follow that public employers need to make profits. The PACO team categorised 'nationalised industries' and other companies which are controlled by the state as private employer. Lastly, private non-profit organisations were viewed as public employers. In the Spanish data, private sector also includes private (non-governmental) institutions without any aim to make profits; public sector can include organisations which aim to make profits on behalf of the state.
11. Miller's research examined the Occupational Compensation Survey Programme data for 1993.
12. Three types of contract were recognised by the PACO databasae, firstly, permanent contracts, secondly, fixed term contracts, and thirdly, no contract.

TABLES

Table 1 Percentage of employed men with earnings below specified levels

Portion of male median earnings (%)	Britain		Germany		Luxembourg		USA		Spain	
	(%)	N	(%)	N	(%)	N	(%)	N	(%)	N
66	21	1978	11	2450 *	19	1072	27	3394 *	19	3445
				11242788				57186		
50	10	1978	5	2450 *	7	1072	16	3394 *	9	3445
				11242788				57186		
Difference between 66 and 50	11	1978	6	2450 *	12	1072	11	3394 *	10	3445
				11242788				57186		

Source: PACO, SEHP.

* unweighted data

Table 2 Percentage of full-time employed women with earnings below specified levels

Portion of male median earnings (%)	Britain		Germany		Luxembourg		USA		Spain	
	(%)	N	(%)	N	(%)	N	(%)	N	(%)	N
66	32	1152	30	1057 *	36	437	47	2509 *	27	1482
				4678383				41787		
50	16	1152	13	1057 *	12	437	29	2509 *	13	1482
				4678383				41787		
Difference between 66 and 50	16	1152	17	1057 *	24	427	24	2509 *	14	1482
				4678383				41787		

Source: PACO, Spanish SEHP.

* unweighted data

Table 3 Percentage of part-time employed women with earnings below specified levels

Portion of male median earnings (%)	Britain		Germany		Luxembourg		USA		Spain	
	(%)	N	(%)	N	(%)	N	(%)	N	(%)	N
66	55	708	38	418 *	36	176	57	448 *	39	265
				2096282				7626		
50	31	708	17	418 *	12	176	44	448 *	19	265
				2096282				7626		
Difference between 66 and 50	24	708	21	418 *	24	176	13	448 *	20	265
				2096282				7626		

Source: PACO, SEHP.

* unweighted data

Table 4 Percentage of low paid employed men in industry.

Source: PACO, SEHP. * unweighted data

Employment sector	Britain		Germany		Luxembourg		USA		Spain	
	(%)	N	(%)	N	(%)	N	(%)	N	(%)	N
Agriculture, Hunting, Forestry, and Fishing	(57)	35	(30)	16 * 63485	(26)	30	70	74 * 1552	70	165
Mining and Quarrying	(3)	33	(9)	28 * 56052	(27)	9	(13)	44 * 562	(7)	49
Manufacturing	17	627	6	1127 * 4603929	(2)	38	16	917 * 15715	14	898
Electricity, Gas, and Water	(4)	47	(10)	28 * 149098	5	114	13	106 * 1600	(3)	46
Construction	22	86	9	238 * 996308	12	88	40	304 * 4977	23	442
Wholesale and Retail Trade and Restaurants and Hotels	42	296	33	123 * 690572	44	119	37	538 * 8797	33	561
Transport, Storage, and Communication	23	196	17	153 * 716265	46	155	25	258 * 3983	16	289
Financing, Insurance, Real Estate, and Business Service	14	228	2	94 * 553537	13	146	27	279 * 4842	7	291
Community, Social and Personal Services	18	219	12	402 * 2365204	5	89	22	752 * 12905	8	683
Activities not adequately defined	-	-	14	189 * 800829	10	283	(5)	29 * 538	(49)	22
All	21	1768	11	2398 * 10995280	19	1070	27	3227 * 55653	19	344 5

Table 5 Percentage of low paid full-time employed women in industry

Source: PACO, SEHP. * unweighted data

Employment Sector	Britain		Germany		Luxembourg		USA		Spain	
	(%)	N	(%)	N	(%)	N	(%)	N	(%)	N
Agriculture, Hunting, Forestry, and Fishing	(74)	3	(100)	3* 14961	(0)	1	(85)	13* 283	(70)	24
Mining and Quarrying	(0)	6	(0)	0* 0	(0)	2	(0)	7* 108	(26)	4
Manufacturing	39	199	31	390* 20277	(20)	3	51	412* 7130	34	219
Electricity, Gas, and Water	(10)	8	(28)	6* 20277	(38)	5	(0)	13* 225	(0)	1
Construction	(44)	11	(74)	8* 60434	(56)	9	(58)	24* 384	(22)	19
Wholesale and Retail Trade and Restaurants and Hotels	63	173	44	131* 701639	(6)	10	76	411* 6475	52	290
Transport, Storage, and Communication	(32)	46	(30)	33* 172912	63	112	23	82* 1383	(14)	39
Financing, Insurance, Real Estate, and Business Service	23	190	14	84* 362414	(56)	21	34	299* 5040	19	191
Community, Social and Personal Services	26	407	22	299* 1648769	14	83	40	1112* 18845	7	627
Activities not adequately defined	-	-	43	80* 274649	29	192	(15)	14* 283	93	69
All	32	1043	30	1034* 4579586	36	437	47	2387* 40156	27	148 2

Table 6 Percentage of low paid part-time employed women in industry

Source: PACO, SEHP. * unweighted data

Employment Sector	Britain		Germany		Luxembourg		USA		Spain	
	(%)	N	(%)	N	(%)	N	(%)	N	(%)	N
Agriculture, Hunting, Forestry, and Fishing	(80)	4	(83)	4 * 21014	(0)	0	59	6 * 177	(100)	3
Mining and Quarrying	(0)	0	(0)	1 * 5206	(0)	0	(0)	1 * 36	(0)	0
Manufacturing	59	53	(44)	62 * 236737	(0)	0	(36)	18 * 338	(52)	27
Electricity, Gas, and Water	(0)	0	(0)	1 * 7633	(0)	0	(0)	0 * 0	(0)	0
Construction	(39)	7	(29)	10 * 60912	(100)	4	100	3 * 67	(0)	0
Wholesale and Retail Trade and Restaurants and Hotels	80	208	53	80 * 425294	(0)	1	72	103 * 2059	(38)	46
Transport, Storage, and Communication	(58)	18	(25)	23 * 98752	(76)	22	(15)	12 * 214	(27)	3
Financing, Insurance, Real Estate, and Business Service	33	58	(14)	32 * 160595	(0)	1	53	46 * 727	(40)	29
Community, Social and Personal Services	45	307	37	155 * 818993	(16)	10	51	218 * 3470	20	90
Activities not adequately defined	-	-	(36)	31 * 185461	28	116	(100)	1 * 1	58	68
All	55	655	38	399 * 2020596	36	155	57	408 * 7089	39	265

Table 7 Percentage of low paid employed men in occupation

	Britain		Germany		Luxembourg		USA		Spain	
	(%)	N	(%)	N	(%)	N	(%)	N	(%)	N
Managers and administrators	10	321	14	144 *	2	65	13	513 *	4	103
				858653				11364		
Professional Occupations	5	244	8	310 *	(8)	9	7	442 *	4	333
				1877078				9280		
Associate Professional Occupations	12	221	(4)	32 *	4	117	13	172 *	7	378
				188037				3276		
Clerical and Secretarial Occupations	63	222	8	123 *	(8)	11	28	159 *	9	293
				650279				2193		
Sales, Personal, and Protective Services Occupations	78	207	13	145 *	(100)	1	35	268 *	30	382
				930266				4610		
Craft and Related Occupations	22	369	9	802 *	(7)	31	33	570 *	18	919
				3238117				9048		
Plant and Machine Operations	26	286	16	290 *	(20)	34	36	602 *	18	446
				1276937				8534		
Unskilled labour Occupations	45	99	13	168 *	(33)	30	47	490 *	42	563
				489095				6287		
All	21	1968	11	2014 *	19	299	27	3216 *	19	3417
				9508461				54592		

Source: PACO, SEHP.

* unweighted data

Figures in brackets are based on small cell sizes

Table 8 Percentage of low paid employed full-time women in occupation

	Britain		Germany		Luxem-bourg		USA		Spain	
	(%)	N	(%)	N	(%)	N	(%)	N	(%)	N
Managers and administrators	17	143	(24)	40 * 190277	(4)	29	31	235 * 4422	(0)	10
Professional Occupations	7	151	19	87 * 563304	(0)	1	14	403 * 8463	1	297
Associate Professional Occupations	16	204	(16)	32 * 300249	21	151	52	282 * 4261	9	212
Clerical and Secretarial Occupations	28	337	19	197 * 930958	(36)	8	48	689 * 11632	18	289
Sales, Personal, and Protective Services Occupations	65	195	45	161 * 786586	(100)	1	75	303 * 4597	47	301
Craft and Related Occupations	(48)	27	46	103 * 303134	0	0	68	30 * 454	41	88
Plant and Machine Operations	59	66	54	83 * 225661	0	0	71	250 * 3688	(46)	37
Unskilled labour Occupations	(86)	27	58	64 * 181415	(27)	2	72	204 * 2623	51	247
All	32	1150	30	767 * 3481585	19	193	47	2396 * 40140	27	1481

Source: PACO, SEHP. * unweighted data Figures in brackets are based on small cell sizes

Table 9 Percentage of low paid employed men in type of organisation

Public or Private Employer	Britain		Germany		Luxembourg		USA		Spain	
	(%)	N	(%)	N	(%)	N	(%)	N	(%)	N
Public	11	469	12	512 *	6	286	21	634 *	5	816
				2824321				9977		
Private	24	1508	11	1857 *	23	777	27	2424 *	24	2629
				8141981				40840		
All	21	1977	11	2369 *	19	1063	27	3058 *	19	3445
				10966302				50817		

Source: PACO, SEHP. * unweighted data

Table 10 Percentage of low paid full-time employed women in type of organisation

Public or Private Employer	Britain		Germany		Luxembourg		USA		Spain	
	(%)	N	(%)	N	(%)	N	(%)	N	(%)	N
Public	13	393	20	264 *	16	132	29	561 *	4	527
				1509306				9445		
Private	42	759	35	756 *	44	300	51	1726 *	39	955
				3046606				28468		
All	32	1152	30	1020 *	36	432	47	2287 *	27	1482
				4555912				37913		

Source: PACO, SEHP. * unweighted data

Table 11 Percentage of low paid part-time employed women in type of organisation

Public or Private Employer	Britain		Germany		Luxembourg		USA		Spain	
	(%)	N	(%)	N	(%)	N	(%)	N	(%)	N
Public	36	263	21	134 *	14	74	45	78 *	(14)	44
				676707				1097		
Private	66	446	48	265 *	52	76	60	269 *	44	222
				1344602				4682		
All	55	708	38	399 *	33	150	57	347 *	39	265
				2021309				5779		

Source: PACO, SEHP. * unweighted data

Table 12 Percentage of low paid employed men with contracts

Contractual Situation	Britain		Germany		Luxembourg		USA		Spain	
	(%)	N	(%)	N	(%)	N	(%)	N	(%)	N
Permanent	19	1885	9	2183 *	17	954	NA		NA	
				9936209						
Fixed Term	(40)	42	30	138 *	(41)	41				
				654781						
No Contract	(79)	46	(38)	16 *	(61)	28				
				64440						
All	21	1973	11	2337 *	19	1022				
				10655431						

Source: PACO, SEHP. * unweighted data Figures in brackets are based on small cell sizes

Table 13 Percentage of low paid employed full-time women with contract

Contractual Situation	Britain		Germany		Luxembourg		USA		Spain	
	(%)	N	(%)	N	(%)	N	(%)	N	(%)	N
Permanent	31	1102	27	894 *	33	378	NA		NA	
				3990363						
Fixed Term	(39)	26	55	109 *	(37)	20				
				427326						
No Contract	(63)	24	(4)	3 *	(53)	15				
				7861						
All	32	1152	30	1006 *	34	141				
				4425550						

Source: PACO, SEHP. * unweighted data Figures in brackets are based on small cell sizes

Table 14 Percentage of low paid employed paid part-time women with contract

Contractual Situation	Britain		Germany		Luxembourg		USA		Spain	
	(%)	N	(%)	N	(%)	N	(%)	N	(%)	N
Permanent	56	640	38	341 *	25	118	NA		NA	
				1769536						
Fixed Term	(30)	21	(47)	28 *	(80)	10				
				124722						
No Contract	(61)	47	(100)	2 *	(73)	19				
				9292						
All	55	708	39	371 *	34	146				
				1903551						

Source: PACO, SEHP. * unweighted data Figures in brackets are based on small cell sizes

Table 15 Percentage of low paid employed men in firm of given size

Size of firm	Britain		Germany		Luxembourg		USA		Spain	
	(%)	N	(%)	N	(%)	N	(%)	N	(%)	N
1-9	39	248			27	200	NA			
1-19			23	362 *					35	1644
10-99	23	790		1812402						
10-100					23	427				
20-99									20	616
20-199			8	602 *						
100-499	15	566		2720130						
101-1000					14	308			10	338
200-1999			10	644 *						
500+	13	366		2701060					8	455
1001+					6	120				
2000+			7	788 *						
All	21	1971	11	3734181	19	1055			24	2611
				2396 *						
				10967772						

Source: PACO, SEHP. * unweighted data Figures in brackets are based on small cell sizes

Table 16 Percentage of low paid full time employed women in firms of given size

Size of firm	Britain		Germany		Luxembourg		USA		Spain	
	(%)	N	(%)	N	(%)	N	(%)	N	(%)	N
1-9	50	152			53	130	NA			
1-19			49	199 *					57	449
				878876						
10-99	35	513								
10-100					29	179				
20-99									23	244
20-199			33	293 *						
				1260922						
100-499	26	291							22	137
101-1000					28	96				
200-1999			25	314 *						
				1224809						
500+	19	194							17	114
1001+										
2000+			18	233 *	(34)	31				
				1224870						
All	32	1150	30	1039 *	36	436				
				4589477					38	944

Source: PACO, SEHP. * unweighted data Figures in brackets are based on small cell sizes

Table 17 Percentage of low paid part-time employed women in firms of given size

Size of firm	Britain		Germany		Luxembourg		USA		Spain	
	(%)	N	(%)	N	(%)	N	(%)	N	(%)	N
1-9	66	203			55	67	NA			
1-19			50	140 *					48	153
				746372						
10-99	54	316								
10-100					(33)	49				
20-99									(28)	29
20-199			39	124 *						
				637899						
100-499	54	125							(64)	14
101-1000					(22)	34				
200-1999			34	64 *						
				289424						
500+	29	62							(17)	18
1001+					(2)	3				
2000+			19	66 *						
				314170						
All	55	706	39	394 *	36	153			44	219
				1987865						

Source: PACO, SEHP. * unweighted data Figures in brackets are based on small cell sizes

References

- Bazen, S. (1994) 'Minimum Wage Protection in Industrialised Countries', *International Journal of Manpower*, 15: 2/3, 62-73.
- Bell, N.F., and Wright, E. (1996) 'The Impact of Minimum Wages On The Wages Of The Low Paid: Evidence From The Wage Boards and Councils', *Economic Journal*, 106 (May), 650-656.
- Card, D. and Krueger, A.B. (1995) *Myth and measurement: the new economics of the minimum wage*. Princeton, New Jersey: Princeton University Press.
- CERC (1992) *Low pay in the Countries of the European Community*, Report for the Directorate-General for Employment, Industrial Relations and Social Affairs of the Commission of the European Communities, Centre d'Etudes des Revenus et des Coûts, Paris.
- Cox, W and Brunelli, S.A. (1994) 'America's Protected Class III, the Unfair Pay Advantage of Public Employees', *The State Factor*, April, 1-34.
- Cox, W and Brunelli, S.A. (1992) 'America's Protected Class: Why Excess Public Employee Compensation is bankrupting the States', *The State Factor*, February, 1-32.
- Dex, S., Taylor, M. and Lissenburgh, S. (1994) *Women and low pay: Identifying the Issues*, Manchester: Equal Opportunities Commission.
- Dolado, J., Kramarz, F., Machin, S., Manning, A., Margolis, D. and Teulings, C. (1996) 'The economic impact of minimum wages in Europe', *Economic Policy*, 319-372.

- European Industrial Relations Review (1996) 'Current minimum pay rates', *EIRR*, 266, March, 16-18.
- Escott, K., and Whitfield, D. (1995) *The gender impact of CCT in local government*, Manchester: Equal Opportunities Commission.
- Fernie, S., and Metcalf, D. (1996) 'Low Pay and Minimum Wages: The British Evidence'. Special Report, Centre for Economic Performance, London School of Economics, September.
- Freeman, R. (1996) 'The Minimum Wage as a Redistributive Tool', *Economic Journal*, 106 (May), 639-649.
- Gosling, A. (1997) 'Minimum wages: possible effects on the distribution of income' in *Implementing a National Minimum Wage in the UK: Key Issues For The Low Pay Commission*, Employment Policy Institute, May.
- Grieve-Smith, J., Harcourt, G., Robinson, P., Trinder, C. and Wilkinson, F. (199) *Full Employment Without Inflation: A Policy for Pay*. Employment Policy Institute Economic Report, Volume 10, No. 6, May.
- IDS (1995) Minimum pay setting in the European Union, *Incomes Data Services*, 18-19, April.
- Herz, D. E. (1988) 'Employment characteristics of older women, 1987', *Monthly Labor Review*, Volume 111, No. 9, 3-12.
- Ingram, P. (1997) 'Movements at a minimum: periodic upgrading of the National Minimum Wage' in *Implementing a National Minimum Wage in the UK: Key Issues For The Low Pay Commission*, Employment Policy Institute, May.

- Machin, S. (1997) 'A National Minimum Wage: who would be affected and the effect on employment', in *Implementing a National Minimum Wage in the UK: Key Issues For The Low Pay Commission*, Employment Policy Institute, May.
- Machin, S. and Manning, A. (1996) 'Employment and the Introduction of a Minimum Wage in Britain', *Economic Journal*, 106 (May), 667-676.
- Manning, A. (1997) 'What variation should we have in the National Minimum Wage?' in *Implementing a National Minimum Wage in the UK: Key Issues For The Low Pay Commission*, Employment Policy Institute, May.
- Marsden, D. (1992) 'Incomes Policy for Europe? or Will Pay Bargaining Destroy the Single European Market?' *British Journal of Industrial Relations*, 30: 4 (December), 587-604.
- Meulders, D., Plasman, R., and Vander Stricht, V. (1993) *Position of Women on the Labour Market in the European Community*. Aldershot, Dartmouth Publishing Company.
- Miller, M. A. (1996) 'The public-private pay debate: what do the data show?' *Monthly Labor Review*, May, 18-29.
- Naylor, R. (1994) 'Pay Discrimination and Imperfect Competition in the Labor-Market', *Journal of Economics - Zeitschrift Fur Nationalokonomie*, 60: 2, 177-88.
- OECD (OECD, 1993) *Economics Surveys 1992/1993 United Kingdom*. January, 1993.
- OECD (OECD, 1992) *Economics Surveys 1991/1992 Belgium/Luxembourg*. July, 1992.

- OECD (OECD, 1991) Economics Surveys 1991/1992 Germany. July, 1991.
- OECD (OECD, 1990) Economics Surveys 1989/1990 Germany. June, 1990.
- OECD (OECD, 1988) Economics Surveys 1987/1988 United States. May, 1988.
- PACO (1996) *The PACO Project User Manual*, CEPS/INSTEAD.
- PSPRU (1996) *The Privatisation Network - the multinationals' bid for public services*. London: PSPRU.
- PSPRU (1995) *Private Corruption of Public Services*. London: PSPRU.
- Royal Commission (1979) *Royal Commission on the Distribution of Income and Wealth*. Report No. 7, Cmnd 6999. London: HMSO.
- Rubery J., and Fagan, C (1993) Wage Determination and Sex Segregation in Employment in the European Community, Report for the Equal Opportunities Commission.
- Rubery J., and Fagan, C (1994) 'Equal pay policy and wage regulation systems in Europe'. *Industrial Relations Journal*, 25:4, 281-292.
- Schechter, H.B. (1993) *The global economic mismatch: high technology and low pay*. London: Praeger.
- Shaheed, Z. (1994) 'Minimum Wages and Low Pay: An ILO Perspective', *International Journal of Manpower*, 15:2/3, 49-61.
- Sisson, K. and Edwards, P. (1997) Implementing a National Minimum Wage: coming to terms with the details' in *Implementing a*

National Minimum Wage in the UK: Key Issues For The Low Pay Commission, Employment Policy Institute, May.

Sloane, P. J. and Theodossiou, I (1996) 'Earnings Mobility, Family Income and Low Pay', *Economic Journal*, 106 (May), 657-666.

Sutherland, H. (1997) 'Minimum wages and in-work benefits' in *Implementing a National Minimum Wage in the UK: Key Issues For The Low Pay Commission*, Employment Policy Institute, May.

APPENDIX

Appendix

Table A1: The hourly minimum wage in a number of countries (translated into sterling using purchasing power parity exchange rates).

Country	minimum wage level (hourly rate) Own currency	At PPP exchange rates Sterling *
Belguim	BF 249.9	£4.32
France	FF 36.98	£3.61
Greece	Dr 667.2	£2.20
Luxembourg	LF 252.37	£4.07
Netherlands	HfL 12.6	£3.83
Portugal	Esc 300	£1.64
Spain	Pts 374.54	£1.99
USA	US\$ 4.25	£2.75
Japan	Y 554	£1.98
Canada	C\$ 6.25	£3.26
New Zealand	NZ\$ 6.25	£2.68

All minimum wages converted to hourly rates, assuming a standard 40 hour week, 8 hour day.

Source: Hansard 13 February 1996

* Wage rates converted to UK equivalents using 1994 purchasing power parities from OECD National Accounts, 1996.

Table A2: Countries with a statutory minimum wage *

Country	Coverage	How established	Updating mechanisms	Current levels
Belguim	Employees aged 21+ outside scope of industry minima. 8% of w/force.	national collective agreement made legally binding.	Linked to consumer prices. Updated every 2 years.	Monthly BF 41,660 for 21 yr olds; BF 42,808 for over 21's (Dec. '94)
France	Employees aged 18+ outside scope of industry minima. 8.6% of w/force	By statute	Linked to consumer prices. Reviewed annually	Hourly rate FF36.98 (July '94); monthly rate FF 6249.6
Greece	Legal minimum rates depend on marital status and service. 20% of wage earners	national collective agreement extended by decree	Renegotiated every 1-2 years	Min. blue-collar daily rate DR 4,934. Min. white-collar monthly rate DR 110,255 (July '94)
Luxembourg	Employees aged 18+ outside scope of industry minima. 13% of w/force.	By statute	Linked to consumer prices. Reviewed every 2 years	Monthly (Jan '95) unskilled LF 42,677; skilled LF 51,213
Netherlands	Employees aged 23+ outside scope of industry minima. 2.6% of w/force	By statute	Link with collectively-agreed wage rate index. Reviewed annually	Monthly adult rate FL 2,163.2 (Jan. '95)
Portugal	Employees aged 18+ outside scope of industry minima. 6.3% of w/force	By statute	Updated annually after tripartite consultation	Monthly rate: Esc 52,000, or Esc 35,700 for domestic staff (Jan. '95)
Spain	Employees aged 18+. 200,000 employees	By statute	Updated annually after tripartite consultation	Monthly adult rate: Pts 62,700 (Jan. '95)

Source: IDS April 1995 * All countries have binding indutry minima which can be extended to non-signatory parties.

Table A3: Alternative pay regulatory mechanisms across countries

Country	Mechanism	How rates are fixed	How/when rates updated	Groups covered
Austria	Binding minimum rates for some industries by decree	By collective bargaining	Normally annually by C/A	90% of employees
Denmark	Minimum wage system or wage system	By collective bargaining	Annually by C/A	80% of employees
Finland	Binding minimum rates by sector	By collective bargaining -can be extended	By C/A	c.85%-90% of employees
Germany	Binding minimum rates by sector	By collective bargaining -can be extended	Normally annually by C/A	ERO's cover 6% of employees
Irish Rep.	Employment Regulation Orders or Registered Employment Agreement	ERO rate by Joint Labour Committees. REA rate by Joint Industrial Councils	ERO and REA rates updated annually. Pay policy guarantees rises	All employees
Italy	Binding minimum rates by sector	By collective bargaining	Annually by C/A	All employees
Sweden	Binding minimum rates by sector	By collective bargaining	Normally annually by C/A	85%-90% employees
UK	None, except Agricultural Wages	By Agricultural Wages Board	Annually	0.5% of w/force

Source: IDS April 1995

**ESRC CENTRE FOR BUSINESS RESEARCH
WORKING PAPERS**

CBR Working Papers are widely circulated to libraries and research institutes. Single copies are available to individuals on request to the Publications Secretary, ESRC Centre for Business Research, Department of Applied Economics, Sidgwick Avenue, Cambridge CB3 9DE, UK, at a cost of £5 or \$10. Cheques/money orders should be made payable to University of Cambridge.

- WP1 Management Consultancy in Europe**
David Keeble and Joachim Schwalbach, February 1995
- WP2 Seedcorn or Chaff? Unemployment and Small Firm Performance**
Michael Kitson, February 1995
- WP3 Employment in the United Kingdom: Trends and Prospects**
Ken Coutts and Robert Rowthorn, February 1995
- WP4 Enterprising Behaviour and the Urban-Rural Shift**
David Keeble and Peter Tyler, February 1995
- WP5 Risk, Trust and Power: The Social Constitution of Supplier Relations in Britain and Germany**
Christel Lane and Reinhard Bachmann, February 1995
- WP6 Growth-oriented SMEs in Unfavourable Regional Environments**
Peter Vaessen and David Keeble, February 1995
- WP7 Capital Formation and Unemployment**
Robert Rowthorn, May 1995
- WP8 On the Size Distribution of Establishments of Large Enterprises: An Analysis for UK Manufacturing**
Paul Kattuman, May 1995
- WP9 A Simulation Model of North-South Trade**
Robert Rowthorn, May 1995
- WP10 Contracts, Cooperation and Trust: The Role of the Institutional Framework**
Simon Deakin and Frank Wilkinson, September 1995
- WP11 Korea at the Cross-Roads**
Robert Rowthorn, September 1995
- WP12 Manufacturing, the Balance of Payments and Capacity**
Andy Cosh, Ken Coutts and Alan Hughes, September 1995
- WP13 The Role of Manufacturing in the National Economy**
Robert Rowthorn, September 1995
- WP14 Britain's Industrial Performance Since 1960: Underinvestment and Relative Decline**
Michael Kitson and Jonathan Michie, September 1995