

# Bulletin

Institute for  
Employment  
Research

## OCCUPATIONAL STUDIES

The results of the Institute's main labour market assessment for 1988/89, contained in the latest **Review of the Economy and Employment 1988/89 - Volume 1**, were summarised in **Bulletin No.2**. This report provided a detailed assessment of the changing occupational structure of employment in the UK economy, with projections up to 1995.

The overall review of the economic and occupational developments in Volume 1 of the **Review** is complemented by a number of separate occupational studies contained in Volume 2. These form a more detailed analysis of developments within individual occupational groups. Together the two volumes provide a detailed assessment of the way in which the labour market for each occupational group has been operating and what future developments are in store. The issues which are important vary from one occupational group to another, but they include such things as: the fragmentation of tasks and growth of part-time working; sub-contracting and the increase in self-employment; credentialism, screening, "filtering down" and the rise in the proportion of those in the workforce holding formal qualifications; and changing patterns of pay and hours of work.

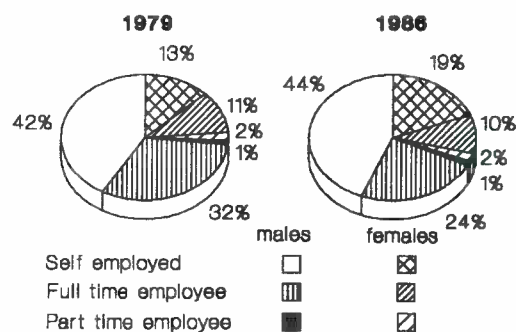
### Managers and Administrators

Managers and administrators accounted for almost 3.2 million jobs in 1987, of which 1.8 million were "corporate managers and administrators" and 1.3 million were "managers/proprietors in services and agriculture". Full-time male

employees make up the bulk of those in the corporate managers and administrators category whereas almost one-third of managers/proprietors in services and agriculture are female. A particularly notable feature of the latter category is the high and growing proportion of self-employed females. Qualification levels amongst managers are low, although there has been some improvement over recent years.

The main factors which have influenced recent trends in employment have been the changing industrial structure of the economy, changes in the strategies and structure of large

**Employment Status for Managers/Proprietors in Services and Agriculture, 1979-86**



organisations and a general growth in self-employment and small business activity, particularly amongst females. The prospects for the future differ significantly between the two categories. Corporate managers and administrators will continue to increase in number, become more qualified and better paid. Some 250 thousand additional jobs are projected by 1995, an increase of 14 per cent, double the growth forecast for employment in total. An increase in the relative importance of females in this category is projected. The prospects for managers and proprietors in the service and agricultural industries are less clear and depend upon the reaction of individuals and large organisations to the changed economic environment and relatively tighter labour market

**Review of the Economy and Employment  
1988/89**

**Volume 2: Occupational Studies**

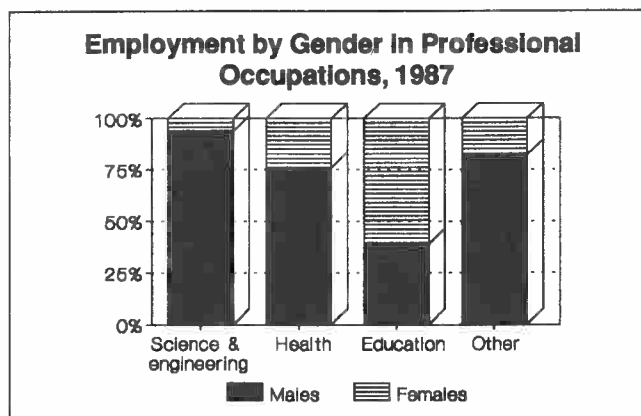
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conditions which are likely to prevail in the 1990s. On balance, trends towards subcontracting and the general trend towards a more risk-orientated "enterprise culture" seem likely to result in some further growth over the next few years. A modest increase of about 120 thousand is projected between 1987 and 1995 (9 per cent).

### Professional Occupations

The professions are often considered as a key occupation because of the high level of investment by individuals and society and because of their potential contribution to the dynamic performance of the economy. The group is comprised of occupations requiring a first degree or equivalent qualification, making additional supply heavily dependent on flows through the higher education system. In 1987, the group employed about 2.3 million individuals, of which about 34 per cent were women, although females were heavily concentrated in education professions and very poorly represented in science and engineering professions. Education professionals formed the largest category, followed by science and engineering, other and, finally, health professionals. The education category was about seven times the size of the health professionals in 1987.



All four main professional groups exhibited growth over the period 1971 to 1987, although this was most rapid amongst other professionals (this category includes business professions such as law and accountancy), followed by science and engineering professionals.

The major changes in the proportion of professionals within all occupations has been driven partly on the supply side, for example, by the growth in the higher education system in the 1960s, and partly by changes in demand, brought about by technological and organisational changes, the general growth of the economy and changes in industry mix. Significant increases in the number of professionals in the period 1971 to 1981 were brought about by the restructuring of industry. Such effects had declined to relatively insignificant levels by the mid-1980s, and are forecast to be even smaller during the period to 1995. Technological and organisational changes

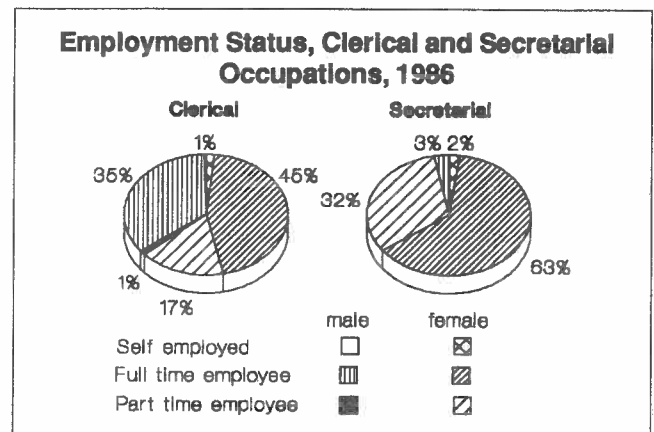
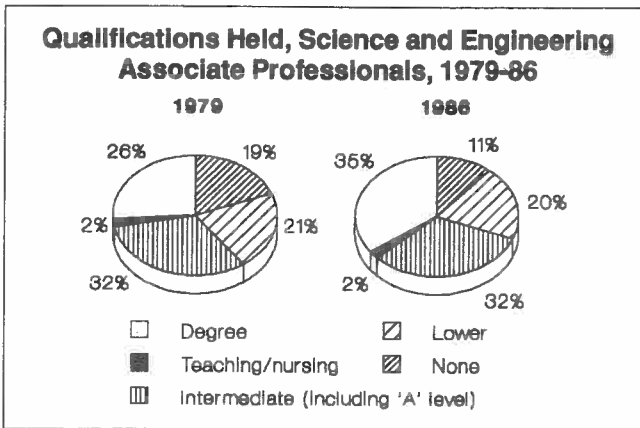
within almost all sectors have produced steady pressures in favour of the professional group. Such forces have produced major increases in the number of professionals over the period 1971 to 1987 as a whole, and are forecast to continue at only a slightly reduced rate over the period to 1995.

A number of pieces of evidence, including the information about earnings and hours, provide some indication of the extent and nature of skill shortages amongst professionals. The results suggest no evidence of general shortages in the period to 1981, although disaggregation reveals the case for specific skill shortages brought about primarily by technological and organisational changes. However, the subsequent growth of the economy has caused more widespread skill shortages. These problems look set to become even more acute in the light of the forecast future growth of the economy unless supply responds. In practice, OPCS forecasts suggest that new supply will tend to move perversely. Skill shortages are likely to be accentuated by the decline in the youth cohort in the mid-1990s. Further restrictions on supply are forecast because of the buoyant labour market for associated professional and technical occupations. The picture is further complicated by potential cobweb cycles, by likely changes in employer recruitment procedures and by the unification of the internal European market.

### Associate Professional Occupations

In 1987 approximately two million people were employed in associate professional and technical occupations. This group includes science and engineering associate professionals, health associate professionals and other associate professionals. Over three-quarters of the health associate professionals were nurses. Partly as a consequence, females comprise just under one-half of the workforce within the occupational group. There are substantial variations between the categories in gender composition, with the proportion of employment accounted for by females ranging from one-fifth of science and engineering associate professionals to four-fifths of health associate professionals. Full-time male employees dominate employment in science and engineering associate professionals, full-time and part-time female employees constitute the majority of health associate professionals. Self-employment is more significant in the other associate professionals category. There is a strong tendency for the proportion holding formal qualifications to increase in each of the categories.

Employment in the occupational group as a whole increased by 600 thousand between 1971 and 1987, an annual average rate of over 2 per cent per annum. The rate of job growth was slower for science and engineering associate professionals than for the other two categories. Between 1971 and 1981 health associate professionals boasted the highest annual average rate of employment increase, but there was a substantial slowdown in the 1980s with the impact of public expenditure cutbacks. Other associate professionals dis-



played the highest annual average growth rate (nearly 6 per cent per annum) between 1981 and 1987.

An increase of 400 thousand jobs in associate professional and technical occupations is projected in the period to 1995, making for a growth in employment of approximately 1 million since 1971. Females are expected to benefit disproportionately from this increase. All three categories are anticipated to share in the growth with health associate professionals and other associate professionals experiencing the highest rates of increase.

In the context of general economic growth, and with continued increases in the demand for associate professional and technical occupations, it is likely that recruitment and retention problems will increase. With the onset of a demographic downturn in numbers of young people, more attention will have to be devoted to considering new recruitment channels. Greater emphasis on computing skills is likely to be a feature across a wide range of occupations, and there are likely to be growing pressures to afford professional status particularly in the more specialist occupations.

**Clerical and Secretarial Occupations**

In 1987 there were 3.3 million persons employed in clerical and 1.2 million persons in secretarial occupations. This represented 18 per cent of the workforce. These occupational categories are disproportionately female - 64 per cent of clerks and no less than 97 per cent of secretaries were female. Females are much more likely to work part-time than males. The average level of qualifications in the group is low and the overwhelming majority of workers are not qualified beyond "O" level; the major exception is the male secretaries sub-group, in which 49 per cent had progressed beyond "O" level.

Employment in the group grew by 3 per cent between 1971 and 1987. This was the net effect of a slight decline in the clerical category and a 16 per cent increase in the secretarial category. Between 1979 and 1986 there was a 12 per cent increase in part-time employment and a 15 per cent decrease in full-time employment for the group as a whole. During the

same period there was an internal restructuring with an increase in computer and other machine operators and a decline in telephone operators.

To a large extent the growth of employment amongst these occupations during the 1970s and 1980s can simply be regarded as reflecting the overall expansion of employment for women. However, there were some changes in the industrial structure of employment such as the rapid growth of the service sector (in which clerks and secretaries are heavily represented), which also played an important role. This was to some degree off-set by the declining proportion of such occupations in many industries, caused by the introduction of job-displacing new technologies.

The pay of clerks and secretaries is well below average. Clerical pay increased at a slower rate than for all occupations between 1973 and 1987 but that of secretaries increased at a faster rate. Female clerical workers earned 22 per cent less than male clerical workers, on average, in 1987 and female secretarial workers earned 37 per cent less than male secretaries in the same year. This difference was partly due to lower overtime earnings, etc. but the bulk of the difference cannot be explained in this way.

Employment in the clerical and secretarial group is expected to grow by just under 300 thousand between 1987 and 1995. Female employment is expected to grow at a faster rate than male. The occupational group will therefore become even more female-dominated. It is anticipated that the increasing use and sophistication of computer technology in the period up to 1995 will produce major changes in the type of work undertaken and in the status of the occupations.

**Craft Occupations**

The craft and skilled manual occupations group comprises "skilled engineering trades", "skilled construction trades" and "other skilled trades". The largest single concentration of such workers is in manufacturing which accounts for two-fifths of the group. However, craft and skilled manual occupations constitute nearly three-fifths of the workforce in construction. Only one-tenth of those within the group are

females, of whom the majority are employed in textiles, garments and other related trades. About 90 per cent of those in "skilled engineering trades" are full-time male employees, but in "skilled construction trades" the self-employed make up just over half of the total. Between one-third and three fifths of those in the constituent WOCs possess no formal qualifications.

Employment in craft and skilled manual occupations declined by nearly one million between 1971 and 1987, representing a decrease of approximately one-fifth and an annual average loss rate of 1.4 per cent per annum. Females accounted for only a small proportion of total employment throughout the period, but self-employment increased while the numbers of full-time and part-time employees declined. Between 1979 and 1986 the proportion of self-employed in "skilled construction trades" rose from one-third to one-half. Approximately 70 per cent of employment losses in the occupational group between 1971 and 1981 may be attributed to changes in industrial structure, as industries such as mechanical engineering, motor vehicles, textiles, clothing, and timber and furniture saw large employment declines. Between 1981 and 1987 this was again the predominant influence for "skilled engineering trades" and "other skilled trades". However, over the same period, growth in "skilled

Employment in craft and skilled manual occupations is projected to increase during the period to 1995, although less than for many other occupations. It is likely that recruitment problems and skills shortages encountered currently will increase. Cutbacks in numbers of apprentices have outstripped the decline in total stocks. The increasing tendency towards "contracting out" to the self-employed also begs the question of the means by which future craftsmen are to be trained. Furthermore the demographic downturn in young people suggests that an important traditional recruitment channel will diminish in significance. As a consequence it seems unlikely that employers will be able to meet all their requirements without further improvements in the incentives for training in order to achieve skilled status.

### Construction Occupations

The Review also contains an additional study focusing on recent trends in the construction occupations, including changes in both direct and self-employment and changing patterns of growth/decline in individual occupations. Recent movements in the geographical location of construction employment are also assessed. In particular, the study highlights the growth in repair and maintenance activity and its implications for skill demand. The future requirements for repair and maintenance skills are reviewed.

The study describes the impact of an increasing concentration of construction demand on the South East region and especially on Greater London. Skill problems created by major projects such as London Docklands and the Channel Tunnel are briefly examined. Various data series are analysed to reveal the South East region's share of national construction output and corresponding labour skills; earnings differentials between this region and the rest of the country are also presented. An appraisal is made of how adequately the supply of skills can respond to continuing high construction demand in the South East. Regional training difficulties are discussed and the possibility of solving supply shortfalls by long-distance commuting for key craftsmen is considered. Short-term

#### Shift-share Analysis of Changing Occupational Structure, Craft Occupations 1981-95

Type of skilled trade:	Total change	Scale effect	(000s)	
			Net occ effect	Industry mix effect
<b>1981-87</b>				
Engineering	-215	-18	-41	-155
Construction	48	-8	49	7
Other	-157	8	-26	-139
<b>1987-95</b>				
Engineering	20	52	34	-66
Construction	92	28	34	31
Other	81	114	22	-55

construction trades" was almost entirely attributable to an increase in the proportion of such trades employed within the construction sector (the net occupational effect).

Average weekly pay for craft and skilled manual occupations moved closely with the trend for all occupations, but there has been a gradual slipping back in the rankings, suggesting that wages have not been used as an instrument for retaining workers. Wages have however kept in line with those for less skilled blue collar workers.

#### The South East Region's Share of Great Britain's Construction Output

	Percentage Share		
	1981	1986	1988 Quarter 1
<b>All Work</b>			
All of South East	36.8	39.4	40.7
Greater London	16.0	15.8	15.9
Kent/Surrey/Sussex	7.4	8.2	9.2
<b>All New Housing</b>			
All of South East	33.4	40.7	42.7
Greater London	9.8	10.1	10.8
Kent/Surrey/Sussex	8.5	10.8	11.5

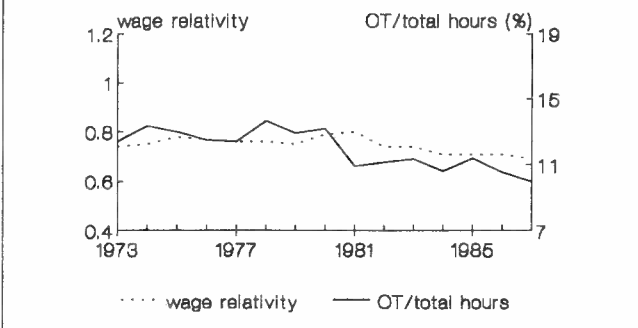
barriers to skilled operatives moving permanently into the South East are also discussed.

### Personal and Protective Service Occupations

Protective and personal service occupations together accounted for 1.8 million jobs in 1987, with the former having the lion's share. Most of those in protective service occupations are male full-time employees. In contrast the personal service occupation category includes a very large proportion of part-time employees. Just under half those in this occupational category are female. Employment has grown rapidly in both categories but especially for personal service occupations. This has primarily reflected changes in final demand patterns in favour of service related activities in tourism and leisure. This growth has benefited part-time females in particular. The proportion of those in possession of formal qualifications has also grown sharply in recent years. This seems to be primarily due to "filtering" down of qualifications and the fact that new entrants to the labour market typically possess more qualifications than the older workers they effectively replace. However there is some evidence of changing job requirements and a tendency for such work to be "professionalised".

Relative pay levels in protective services are heavily dependent on the government's attitude towards pay in the police and fire services. However for personal services they provide a much clearer indication of the state of the labour market. Together with information on the extent of overtime working

**Pay Relativities and Overtime as a Percentage of Total Hours, Personal Service Occupations, Males, 1973-87**



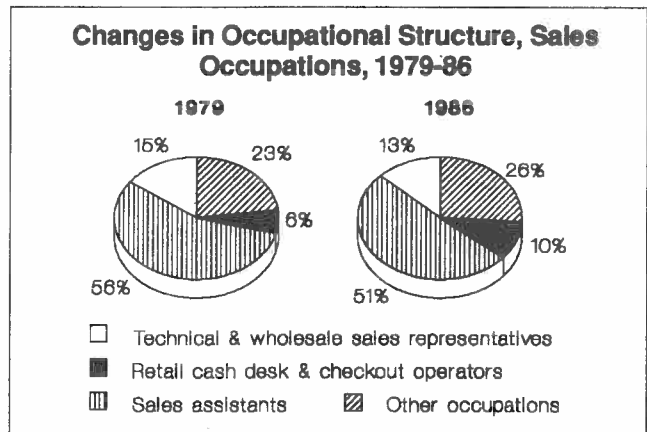
recent movements in relative pay suggest that employers have been able to obtain people for such jobs without great difficulty.

The overall number in both occupational categories is projected to continue to rise during the 1990s especially for females in personal service occupations. Total employment is projected to increase by 170 thousand. Given the anticipated growth in female labour supply, employers are not expected to face serious problems in meeting their labour

requirements. The main caveat to this relates to the impact of the declining numbers of young people aged 16-19 entering the labour market. This may pose particular problems for employers trying to maintain, or even raise, entry standards (as measured by the possession of formal qualifications). This seems more likely to be a problem for protective service occupations than for personal service occupations.

### Sales Occupations

The sales occupational group is extremely heterogeneous and is composed of workers such as buyers, brokers, sales representatives, check-out operators, sales assistants and street-sellers. It is dominated by the sales assistant group which comprised 51 per cent of the total in 1986. Over sixty per cent of the group were female. Female sales workers were predominantly part-timers (64 per cent) whereas male sales



workers were predominantly full-timers (70 per cent). The average level of qualifications is low; in 1986 46 per cent had no formal qualifications.

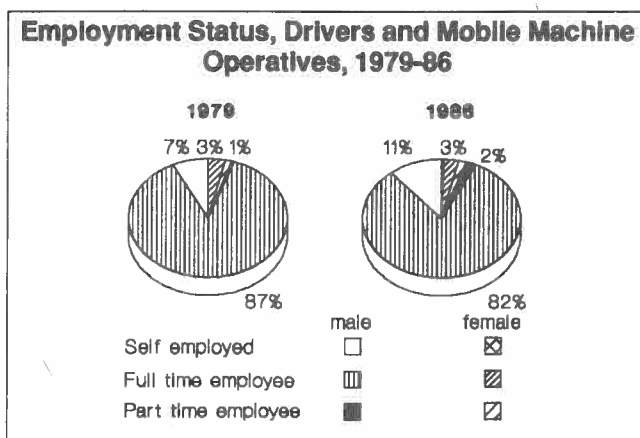
There has been strong employment growth in this occupation in recent years. In 1971 there were 1.6 million sales persons. By 1987 this had increased to 2.1 million. This growth was especially rapid after 1981 and among females. Between 1971 and 1987 female employment increased by 47 per cent and male employment by 6 per cent. The bulk of the growth was in part-time work. Between 1979 and 1986 the proportion of sales assistants and technical and wholesale sales representatives decreased and the proportion of retail cash desk and check-out operators increased. Sales assistants, however, still accounted for the bulk of the group. Sales persons earned below average pay. Recent increases in sales employment have occurred without a significant increase in full-time earnings. This would seem to reflect the fact that employment gains have been predominantly confined to part-timers.

It is projected that employment in the sales occupational group will increase by about 40 thousand between 1987 and 1995. This is the net effect of an increase of about 50

thousand for females compared with a decrease of 10 thousand for males. It is also predicted that the trend towards increasing part-time employment will continue for this occupation.

### Plant and Machine Operatives

The "plant and machine operatives" group accounted for 2½ million jobs in 1987. About a third of these were in the category "drivers and mobile machine operators", the remainder falling into "other operatives". The former category is predominantly male, whereas about a third of the latter are female. Self-employment has been of increasing importance amongst drivers and mobile machine operators. Part-time

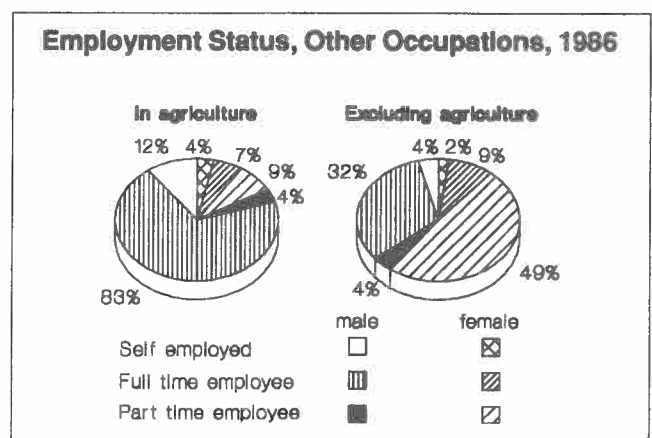


employment is of little consequence amongst this category, being more important amongst other operatives, for whom it has accounted for about 10 per cent of jobs (mainly females). Only a relatively small proportion have any formal qualifications although this has been increasing over time.

Both categories have experienced steady job losses during the 1970s and 1980s, with annual rates of decline of about 2 per cent per annum. This can be traced to declining employment levels in those industries in which they are concentrated, such as transport and manufacturing, and to technological and organisational changes. The latter have reduced the share in employment of such jobs within most sectors.

Relative pay has declined for both occupational categories during the 1980s and both have below average earnings. In contrast their hours of work, particularly overtime hours have traditionally been well above average. The latter has been used by employers as a means of adjusting labour input in a flexible manner and the time series show clear cyclical patterns. However the longer-term trends for both males and females appear to be downward, so there is little evidence from such indicators that employers have been having difficulty in meeting their labour input requirements.

The prospect for these occupations in the 1990s is for a further decline in employment, although the rate of job loss is expected to diminish compared with the 1970s and early 1980s. In total, a further 80 thousand jobs are expected to disappear, a decline of around 7 per cent. Both changes in the industrial structure of employment and further technological developments, such as the application of information technologies and increases in vehicle capacities, will result in fewer persons being required than in the past. Some further increases in the proportions of self-employment and those holding formal qualifications are expected. Given the overall state of the labour market some additional deterioration in relative pay seems in prospect.



### Other Occupations

"Other occupations" includes "other occupations in agriculture" (mainly farm workers), and "other occupations excluding agriculture" (which includes labourers and cleaners working in all other industries). In 1987 these occupations accounted for over 2 million jobs, about 10 per cent of total employment.

The two categories are different in many respects. The first is dominated by male employees working in farming and related industries. Even by 1986, very few people in such jobs had formal qualifications of any kind. Employment has been in steady decline for many years reflecting the reduction of total employment in agriculture, as a result of mechanisation, other technological innovations and reorganisation of the industry.

The second category is rather more heterogeneous, containing large numbers of both unskilled full-time male labourers and part-time female cleaners and domestics. An even larger proportion of persons in this category possess no formal qualifications than is the case with "other occupations in agriculture". Both categories have shown clear evidence of the "filtering" down of qualifications, as a result of relatively well qualified new entrants replacing less well qualified older workers retiring from work. The non-agricultural category

has experienced steady job losses in recent years, particularly for males. This has been partly a consequence of the decline of employment in certain industries such as manufacturing and construction, but more importantly due to declining proportions employed in labouring jobs in most sectors, as a result of a continuous process of mechanisation and other technological improvements. This decline for male labourers has however been offset to a considerable degree by the growth of females working part-time in cleaning jobs.

Hours of work are above average especially for farm workers, both as regards normal hours and overtime hours worked. In contrast pay is well below average and has fallen in relative terms during the 1980s. These trends are expected to continue into the future. Further job losses in the agricultural sector will impinge heavily on this category with a further loss of

around 25 thousand jobs. Relative pay levels are therefore also likely to continue to decline.

Further job losses are also expected in the 1990s for "other occupations excluding agriculture", employment falling by about 30 thousand by 1995. These losses are likely to affect males rather than females however, for whom some further growth in part-time employment opportunities is expected. Given the prospective growth in female participation in economic activity and the general state of the labour market it is however unlikely that employers will face recruitment problems. Indeed further downward pressure on relative pay levels seems on the cards.

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## THE INSTITUTE

The Institute for Employment Research was established by the University of Warwick in 1981. The fields in which the Institute aims to promote advanced study and research include

- the macroeconomic, industrial and spatial factors affecting employment
- the relationship between the labour market and the rest of the economy
- labour market behaviour and policy
- developments in population, education, training and household behaviour affecting the labour market
- comparative international research in relevant areas.

The Institute has grown out of the former Manpower Research Group which was created in 1975 with a major programme grant from the Manpower Services Commission. This followed previous research in the general field of labour economics and employment forecasting. Since 1978, assessments of the economy and employment at a highly disaggregated level have been prepared each year. This work gave rise to the publication of **Britain's Medium-Term Employment Prospects** (1978) and **Economic Change and Employment Policy** (1980). The **Review of the Economy and Employment** was first published in 1981 in order to make the findings of the assessment available more widely on a regular basis and to stimulate discussion about the changing structure of employment and its implications for policy.