PROGRAMME FOR RESEARCH AND ACTIONS ON THE DEVELOPMENT OF THE LABOUR MARKET

NEW FORMS AND NEW AREAS OF EMPLOYMENT GROWTH

A COMPARATIVE STUDY

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A comparative study

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Document

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ABSTRACT

NEW FORMS AND NEW AREAS OF EMPLOYMENT GROWTH

This study examines the evidence available on the development of new forms and new areas of employment growth in France, Germany, Italy, the Netherlands and the United Kingdom. It does so in the light of an assessment of changes in the pattern of employment which have occurred since the mid-1970s and prospects for further change into the 1990s. A distinction is made between the different forms in which job opportunities arise and the different areas of economic activity in which they appear. The first is concerned with how the characteristics of jobs are evolving, notably regarding the essential skill mix required to do them, and the contractual and organisational arrangements within which they are offered to members of the labour force. The second is concerned with the functions of the economy which appear to be increasing and explores where in the industrial-occupational structure they are principally located: i.e. where people are being employed to carry out those functions. Both of these aspects of employment change tend to be neglected in the mainstream analysis of employment growth which concentrates upon the more conventional dimensions of 'industry' and 'occupation' as defined in the relevant national classifications. The study investigates the qualitative and quantitative significance of changes in 'form and area' of employment growth. It assesses the adequacy of the existing information system for monitoring them and considers the need for further research. Finally, it explores the implications of these changes for labour market and educational policies.

CONTENTS

LIST OF TABLES

PREFACE

This study is a summary and analysis of the findings of a five-country review of evidence on the emergence of 'new forms and new areas of employment growth'. The brief for the study precluded carrying out research which would create new primary data, estimate econometric relationships, or develop the theoretical framework. The aim was pragmatic and strongly empiricist, concentrating upon examining the signs which could be found in a range of sources covering aggregate statistical data, sample surveys and case studies. Thus, the project has not produced and tested an economic theory of the demand for and supply of new forms and new areas of employment. Nor has it been a sociological study of changes in the social division of labour or an analysis of the legislative and industrial relations aspects of change in internal and external labour markets. The authors of the individual country studies have, however, attempted to make judgements about the most important developments over a very wide area of the labour market. It is for further research to consider whether or not the judgements are borne out by more detailed analysis of the determinants of change and by the passage of time and production of better evidence than is at present available.

The review has been funded by the Commission of the European Communities (Directorate General for Employment, Social Affairs and Education, DGV). The present study examines, from a comparative perspective, the main findings of the separate country investigations. I am grateful for helpful discussions with fellow participants: Henri Nadel and Laurent Schwab (France); Kurt Vogler-Ludwig (Germany); Bruno Contini (Italy); Tammo Oegema and Chris Van der Vegt (Netherlands); Rob Wilson and Derek Bosworth (United Kingdom); Andrew Chapman, John Morley and Klaus Kaeding (Commission DGV); and Anne Houtman (Eurostat). The views expressed in this comparative study are, however, my responsibility and should not necessarily be attributed to the other participants. For ease of identification, each of the country studies is cited in the text according to country rather than author(s) with the full details given in the list of references.

Finally, I should also like to thank Christine Winnett for research assistance and Jane Lowell for dealing with the task of word-processing.

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Study Co-ordinator

1. SUMMARY

This study examines the evidence available on the development of new forms and new areas of employment growth in France, Germany, Italy, the Netherlands and the United Kingdom. It does so in the light of an assessment of changes in the pattern of employment which have occurred since the mid-1970s and prospects for further change into the 1990s. A distinction is made between the different forms in which job opportunities arise and the different areas of economic activity in which they appear. The first is concerned with how the characteristics of jobs are evolving, notably regarding the essential skill mix required to do them, and the contractual and organisational arrangements within which they are offered to members of the labour force. The second is concerned with the functions of the economy which appear to be increasing and explores where in the industrial-occupational-organisational structure they are principally located: i.e. where people are being employed to carry out those functions. Both of these aspects of employment change tend to be neglected in the mainstream analysis of employment growth which concentrates upon the more conventional dimensions of 'industry' and 'occupation' as defined in the relevant national classifications.

The study investigates the qualitative and quantitative significance of changes in 'form and area' of employment growth. It assesses the adequacy of the existing information system for monitoring them and the need for further research. Finally, it explores the implications of these changes for labour market and educational policies. The main conclusions are summarised below.

1. The growth of new forms and areas of employment will fail to compensate sufficiently for the loss of jobs elsewhere and the growth of labour supply. Assuming that national policies remain broadly on the lines adopted during the mid-1980s, the most optimistic outcome is that European unemployment will decline only slowly.

2. The industrial structure will continue to change in favour of the service sector as conventionally classified but this change will not be as marked as that experienced over the 1975-85 period. First, after the adjustments made during the recession, European manufacturing industry is more competitive and overall will experience a slower decline in employment. Second, the growth of services will be hampered by the effects of restrictive budgetary policies upon the development of public services.

3. The main projected areas of employment growth common to all five countries are business and related services, tourism and leisure activities, and health care. There are significant differences between countries in the prospects for manufacturing employment.

4. The occupations most likely to expand are the more highly qualified groups: those particularly associated with industrial growth - financial and business specialists, recreation professions, and health care professions; those likely to increase their employment in many industries - managers and supervisors; and those whose employment is fairly concentrated in less buoyant industries but where occupational shares within those industries are rising - engineers, scientists and the intermediate technical occupations.

5. Associated with these projected industrial and occupational changes are further increases in the employment of women and further (modest) reductions in hours worked per year by full-time employees. Self employment is expected to rise in three of the countries, tending to stabilise in the other two.

6. The skill content of jobs has changed and will continue to change quite substantially for particular industrial-occupational groups. However, further account needs to be taken of the growth of qualifications and its interaction with the age-structure of different occupations. The balance of employment between main functions, such as production, maintenance, distribution etc., has shifted away from production. The principal impact on the job content of occupations has been to require multi-skilled and multi-functional people at the intermediate occupational level and amongst skilled manual and non-manual workers. At higher levels, the study identified the need for managers to have a broader range of competence and a capacity to cope with more complex combinations of capital equipment and personnel. Supervisory jobs are also being affected by the latter change in particular.

7. Although the emergence of quasi-self-employment as a substitute for employee status is not as yet a major phenomenon, different forms of self employment and off-site working are likely to develop. These could well raise the levels of skill used in such employment and this would have particular implications for women.

8. More 'flexible' contractual forms and working patterns will probably increase, involving different degrees of attachment between employees and employer and more temporary work. The principal restraint upon their growth is likely to be the capacity of management to identify opportunities for <u>lasting</u> organisational change and arrange corresponding new work systems, rather than the resistance of the labour force.

9. Supply-side effects are, however, potentially important, given the reduction in European fertility rates and the high level of unemployment of males seeking full-time jobs. The extent and duration of labour market imbalance is likely to lead to behavioural changes which in some countries could alter the occupational preferences of males and the patterns of work of men and women.

10. The main changes in the location of functions within the industrial structure will be (i) the continuing (though ultimately limited) contracting out of service functions within production industries to the service sector, especially business services, and (ii) the growth of small relative to large enterprises. Perceptions of the likely scale of the first effect do seem to differ greatly between countries, however. The case for expecting a substantial shift in the balance between home provision and market provision of services is much less clear.

11. The monitoring of 'form' in all countries suffers from a basic lack of periodic measurement of both job content and contractual arrangements. This is exacerbated by the absence of regular monitoring of changes in occupational structure by industry. The position on contractual arrangements is more easily improved but that on job content does raise technical difficulties. The latter would, however, benefit from the regular provision and analysis of qualification and/or educational and training experience by occupation, industry, age and gender.

12. The monitoring of 'area' is undermined partly by presentational inadequacies which could be remedied by alternative aggregations of the detailed industrial data and partly by the lack of occupational data. However, the disproportionate attention paid to collecting and presenting data on manufacturing as opposed to service sector employment is now glaringly obvious. Disaggregation of employment be size and type of enterprise should become a regular feature of the presentation of employment trends even if this is at the expense of the collection and presentation of industrial detail.

13. Three main areas of research are proposed in order to provide a better overall understanding of the nature of growth in new forms and new areas of employment and a better point of departure for more detailed survey and case-study research in a comparative context. The areas are: 'qualitative aspects of employment growth', 'employment structure and functional re-location', and 'the economics of new forms of employment and functional re-location'.

14. The main implications for policy concern the relationship between the quality of jobs, the role of job creation schemes, and policy on investment in adult training. The tentative evidence of over-ability and over-qualification of people in less skilled jobs suggests that the further creation of such jobs, generally with even lower skill levels and poorer conditions of employment, will merely increase competition amongst the weakest members of the labour force.

15. At the same time, there are shortages of skills which discourage employers from adopting the high skill/job enrichment option when introducing new production technology. This forces more able people with obsolete or irrelevant skills to filter down the occupational hierarchy. State intervention to support adult training and the development of a much more effective market for education and training would help to avoid the shrinking of the intermediate skill base which may well be a prospect.

2. CHANGING PATTERNS OF EMPLOYMENT: AN INTRODUCTORY VIEW

The conventional analysis of employment growth concentrates upon the familiar dimensions of 'industry' and 'occupation' as captured in the standard national and international classifications. This section reviews the evidence on recent and prospective changes in employment as it emerges from statistical analysis and formal modelling with such data. The first part examines briefly one aspect of modelling the labour market: the treatment of technology and labour demand. The judgements made are rather sweeping, given the variety of models and ad hoc methods used and the special circumstances in which most medium-term employment projections are carried out. The mainstream approach is described rather than the range of practice in the field.

The second and third parts of the section examine, respectively, employment trends since 1970 and the available projections of employment for 1990 and beyond.

2.1 Modelling the Labour Market

In contrast to the many short-term macro-economic models and forecasts available for European countries, there is only a small number of models which deal with the medium term and yield macro-economic results built up from a full multi-sectoral treatment of the economy. There are even fewer which go on to generate projections of the structure of industrial employment by broad employment status (self-employed, employee, family worker, employed full-time, employed part-time) and fewer still which give employment projections by industry and occupation.(1)

Medium-term multi-sectoral models tend to pay more attention than do short-term aggregate models to both demographic and technical change but the treatment of these aspects is still quite limited. The projections provide a framework for considering how both socio-economic behaviour and policy might change to bring about different outcomes. The greater the behavioural content of a model, as expressed in the relationships between different variables, the greater the insight obtainable from simulation exercises. These may involve changing the values of exogenous variables or changing certain parameters in the equations or a combination of the two.

The treatment of demographic change and labour supply and their

principal components are, in effect, usually determined in advance of running the model.(2) This is done by fixing the future profile of the total population and a corresponding set of sex-age specific population figures from which payments and receipts of transfers such as retirement pensions and child benefits will be derived within the model. Labour force participation rates projected exogenously are applied to the population figures. Participation rates may be made to vary with the level of unemployment as a 'net discouraged worker effect'. It is worth noting that the disaggregation of labour supply is confined to sex-age groups. No attempt is usually made to differentiate labour supply by qualification, experience, or preferred occupation or to deal in a more derivative fashion with occupational or industrial mobility.

The treatment of technology and productivity

It is perhaps not surprising that the processes of household decision-making with respect to family formation, educational participation and labour supply are far removed from the specifications of multi-sectoral econometric models. The treatment of technology would seem to be central, however, to their representation of industrial structure yet, here too, much is left to be desired. The invention-innovation-diffusion process which underlies expenditure on research, design, development and investment is merely a shadow behind the equations which model investment and production inputs for each of the industries indentified in the model. In the last decade this shadow has begun to loom large and some modellers have sought to take account of it not so much in the way they build their models but in using them more flexibly.

The medium-term multi-sectoral models may well have anticipated better and provided much more insight into the major recession and partial recovery of recent years than have short-term macro-economic models. But their capacity to cope with economic developments in the 1990s has come under considerable fire. The problem lies in the nature of technical change. As long as it is predominantly a process of incremental innovation the econometrics of investment and employment modelling can be left to the relatively minor controversies of whether or not, for example, robust relative price effects can be identified in addition to output effects. Even where radical innovations take place but are mainly specific to a particular industry or product market their

impact can be handled by re-estimating equations periodically and making judicious residual adjustments in the light of the behaviour of the model in tracking the recent past and the evidence of case studies and industry reports. If resources permit, reference can be made to industry experts and surveys of firms' medium-term investment and employment intentions.

Freeman and Soete (1985) distinguish such radical innovations which may well represent a very marked break with the past for the sector concerned from technological revolutions where the principal characteristic is its pervasiveness. Cost reductions, new products and services, and major technical enhancements of existing products and processes occur on a grand scale. So significant are the potential effects that they can only be fully exploited if the wider society recognises, accepts and facilitates the introduction of the new technology. According to this view, steam and electric power gave rise to revolutionary change: more important, it is argued that we are currently in the early phase of such a revolution arising from the development of information technology. The concept of information technology goes well beyond that of the production and use of micro-electronic components. Freeman and Soete (1985, p.46), for example, see it as: 'a new techno-economic paradigm affecting the management and control of production and service systems throughout the economy'.

The implications of this view for economic forecasting are quite profound. Models incorporating a treatment of technical change which exploits the incremental aspects of its nature, combined with selective intervention to deal with radical innovations will eventually prove to be unreliable. They may perform well enough for medium-term projections in the early stages of a technological revolution but as the forecasting horizon extends from five to ten or fifteen years and as the revolution gets under way, these models will become increasingly irrelevant. This is because the nature of the diffusion process is such that it tends to follow a sigmoid (S-shaped) curve involving a period of very rapid innovation after a very gradual start. Cumulative innovations taking place in and across different sectors as part of pervasive technical change may smooth out the process at the aggregate level. Ironically, this could help the short-term macro-economic models to adjust progressively (through re-estimation) to the change, whereas the multi-sectoral models will be faced with the need for continually introducing

residual adjustments for an increasing proportion of industries in both intermediate and final demand equations.

In theory, the way to cope with this position is to deepen the behavioural content of the models by introducing explicit treatments of the diffusion of technology and its relationship to R & D expenditure, investment, profitability, industrial structure and employment. The data available permit this approach for very few industries and such work is extremely resource intensive. In practice, therefore, another route suggests itself. This involves intervening more speculatively by altering the input-output, productivity, investment and trade parameters industry by industry in the light of what the case study evidence on particular technologies and sectors seems to indicate. The resulting synthesis has been quite revealing.(3) It has been possible to show the potential extent of different effects which help to compensate for the direct displacement of labour (i.e. assuming output is constant) caused by the introduction of new technology. Once price, domestic demand, and trade effects are taken into account, the overall impact of major technical change upon the aggregate level of employment is much less dramatic and may lead to increased employment. The simulations, nonetheless, show how much structural adjustment would be needed and its implications for the labour market.

Apart from its consequences for employment modelling, the view that information technology represents a new 'techno-economic paradigm' also has implications for the monitoring of economic and industrial change. The search for early evidence of the build up of pervasive technical change and a prior warning that an econometric model is likely to go off track because it is 'following the wrong paradigm' rather than for more familiar technical reasons will, therefore, be undermined by flaws in the basic information system. Notwithstanding this, the rest of this section looks at the conventional statistical measures of employment change together with selected projections.

2.2 Employment Changes since 1970

The first half of the 1970s was marked by a reduction in German employment which represented by far the severest of European reactions to the oil crisis (Table 1: figures relate to persons employed, not full-time equivalents). The second half recorded rapid growth in Italy and the Netherlands and the 1980s opened with large declines in Germany

Table 1 Employment Growth in the Five Countries 1970-84

% p.a

	1970-75	1975-80	1980-84
Total			
France	0.54	0.41	-0.47
Germany	-0.65	0.38	-1.09
Italy	0.23	0.85	0.19
Netherlands	0.17	1.35	-0.16
UK	0.23	0.21	-1.34
EUR 5/6[a]	0.07	0.47	-0.71
EUR 10	0.08	0.51	-0.63
Males			
France	-	-0.16	-1.13
Germany	-1.06	0.32	-1.34
Italy	-0.06	0.06	-0.10
Netherlands	-0.20	0.51	-1.44
UK	-0.55	-0.29	-2.00
EUR 5/6[a]	-0.44	-	-1.20
EUR 10	..	..	-1.15
Females			
France	1.52	1.36	0.58
Germany	0.05	0.47	-0.67
Italy	0.99	2.72	0.81
Netherlands	1.19	3.48	2.63
UK	1.57	1.01	-0.37
EUR 5/6[a]	1.02	1.32	0.12
EUR 10	..	..	0.26

Source: Employment and Unemployment 1986. Eurostat. Table 11/4.

Note: (a) EUR 5/6 consists of France, Germany, Italy, Belgium, UK for 1970-75, plus Netherlands for 1975-80 and 1980-84.

and the UK. For Europe as a whole, the net gains of the 1970s were lost in the recession following the second oil crisis.

The burden of adjustment fell mainly upon male employees. The growth of female employment which had more than compensated for this in the years following the first oil crisis, failed to do so during the second crisis and female employment actually fell in Germany and the UK. Throughout the fifteen years, Italy stands out as having been least affected, with male employment fluctuating only slightly and female employment growth remaining substantial. France also recorded significant improvements for women throughout and the Netherlands managed the remarkable growth of 3.5 and 2.6 per cent per annum during the last two sub-periods.

At the broad sectoral level (Table 2), the familiar pattern of declining agricultural and industrial employment is common to virtually all sub-periods and both sexes. In industry, quite similar declines for males and females were recorded in the case of each country, though Dutch women were markedly better off in 1980-84 than their male counterparts. In services, however, the disparity between the sexes is greater than is the case for industry, whereas that between sub-periods is less. On average women record growth rates of about 1-2 per cent per annum faster than those for males.

A more detailed industrial pattern of change for employees is shown in Table 3 (see Annex tables A1 and A2 for separate male and female information cited below). During the past decade or so the table indicates those manufacturing industries where performance is quite similar across countries with perhaps one country being the exception: for example, large declines in metal extraction and manufacture, textiles, and leather, footwear and clothing. Italy is the exception most often, achieving more modest declines and even some growth in the miscellany of industries concerned with leather etc., timber and furniture, paper etc., and other manufacturing (joined in the last case by the Netherlands). The growth of German employment in motor vehicles and slight increases in the French food and drink industry are the only other examples of employment gains in this sector.

For the other production industries, a pattern of decline to a lesser or greater extent is shown in building and civil engineering, and in solid fuels and coke ovens; the picture for primary energy is more

Table 2 Sectoral Employment Growth in the Five Countries 1970-84

		Males plus Females			Males			Females		
		1970-75	1975-80	1980-84	1970-75	1975-80	1980-84	1970-75	1975-80	1980-84
Agriculture	France	-4.75	-2.99	-2.74	-4.67	-3.42	-2.90	-4.93	-2.11	-2.42
	Germany	-4.75	-4.13	-1.17	-4.71	-2.84	-1.01	-4.79	-5.36	-1.34
	Italy	-3.41	-2.33	-4.36	-4.01	-3.00	-3.85	-2.17	-1.07	-5.27
	Netherlands	-1.87	-1.49	0.41	..	-1.76	-0.12	..	-	3.06
	UK	-3.09	-0.87	-1.02	-3.05	-0.82	-0.63	-3.26	-1.08	-2.69
	Eur 5/6[a]	-4.08	-2.75	-2.76	-4.24	-2.81	-2.55	-3.80	-2.63	-3.15
	Eur 10	-3.81	-2.66	-2.32	..	..	-2.39	..	..	-2.20
Industry	France	0.19	-1.00	-2.53	-0.12	-1.02	-2.65	1.21	-0.95	-2.13
	Germany	-2.31	-0.17	-2.58	-2.22	-0.08	-2.50	-2.57	-0.44	-2.80
	Italy	0.12	0.16	-2.20	0.27	-0.24	-2.22	-0.40	1.54	-2.14
	Netherlands	-2.03	-0.73	-3.83	..	-0.82	-4.24	..	-0.10	-1.24
	UK	-1.69	-1.20	-4.69	-1.61	-1.12	-4.49	-1.92	-1.45	-5.31
	Eur 5/6[a]	-1.13	-0.63	-3.09	-2.55	-0.66	-3.08	-3.15	-0.55	-3.11
	Eur 10	-1.12	-0.54	-3.01	..	..	-3.01	..	..	-2.99
Services	France	2.05	1.95	1.06	1.48	1.38	0.49	2.72	2.59	1.68
	Germany	1.77	1.43	0.12	1.10	1.18	-0.06	2.59	1.73	0.33
	Italy	1.87	2.43	2.99	1.23	1.31	2.61	3.29	4.64	3.66
	Netherlands	1.76	2.70	1.41	..	1.78	0.19	..	4.24	3.22
	UK	1.90	1.20	0.56	0.83	0.57	0.11	3.11	1.86	0.99
	Eur 5/6[a]	1.90	1.75	1.06	1.16	1.14	0.69	2.88	2.51	1.50
	Eur 10	1.91	1.79	1.11	..	..	0.71	..	..	1.58

Source: Employment and Unemployment 1986. Eurostat. Tables 11/6 and 11/7.

Note: (a) Eur 5/6 consists of France, Germany, Italy, Belgium, UK for 1970-75, plus Netherlands for 1975-80 and 1980-84.

Table 3 Employment Growth in More Detail: 1975-85[a]

Males plus females

NACE	Division or Class	France	Germany	Italy	Netherlands	UK
0.	Agriculture, forestry, fishing	--	+	---	o/-	o/-
11/12	Solid fuels, coke ovens	(----)	(o/-)	-	(----)	---
13/14/15	Petroleum, oil, nuclear fuels	(+++)	(o/-)	o/-	(o/+)	(++++)
16/17	Electricity, gas, water	+	o/+	+	o/+	o/-
21/22	Extraction/prep. of metals	----	---	o/-	(---)	----
23/24	Mineral extraction	--	--	-	(---)	---
25/26	Chemicals	-	o/-	---	-	---
31	Metal manufacture	-	-	o/-	----	----
32	Mechanical engineering	--	-	o/-	--	-
34	Electrical engineering	-	-	o/-	o/-	-
35	Motor vehicle manufacture	o/-	+	--	(o/-)	----
36	Other transport manufacture	o/-	(-)	o/-	----	----
33+37	Office, DP, instrument eng.	o/-	o/-	o/-	(---)	(--)
41/42	Food, drink, tobacco industry	o/+	o/-	o/-	-	-
43	Textile industry	----	----	--	(----)	-
44/45	Leather, footwear, clothing	---	---	o/+	(----)	----
46	Timber and furniture	-	o/-	o/+	(----)	(--)
47	Paper, printing, publishing	-	o/-	+	o/-	-
48/49	Other manufacturing	-	o/-	o/+	++	---
5.	Building and civil eng.	--	o/-	o/-	-	--
61/62/63	Wholesale/scrap/agents	o/+	o/-	++	o/-	+
64/65	Retail distribution	+	o/-		++++	o/-
66	Hotels and catering	++	++		++++	++
67	Repair of goods and vehicles	(++)	+		---	(o/+)
71	Railways	o/-	---	+	(+)	(---)
72	Other land transport	+	o/+		o/-	--
73-76	Other transport	(++)	(-)		+	(----)
77	Travel agents etc.	(+)	o/+		(++++)	(-)
79	Communication	++	o/+		++++	o/+
81	Banking and finance	+	+	++++	o/+	++
82	Insurance	(+)	o/+		++++	+
83	Business services	++	+++		++++	+++
84/85	Renting, leasing, letting	(+)	(++)		(++++)	(o/+)
9.	Other services	++	+	++++	+++	o/+

Source: Employment and Unemployment 1986. Eurostat. Tables III/3 and III/6 and unpublished Eurostat material.

Note: (a) The base and final years for the growth rates differ between countries and industries because of lack of consistent data (employees only) for the full period.

Key:

(i)

	% p.a.		% p.a.
o/+	0 to 0.9	o/-	0 to -0.9
+	1.0 to 1.9	-	-1.0 to -1.9
++	2.0 to 2.9	--	-2.0 to -2.9
+++	3.0 to 3.9	---	-3.0 to -3.9
++++	4.0 and over	----	-4.0 and over

(ii) Parentheses denote employment in the final year amounting to less than 1 per cent of the total number of employees in the economy.

mixed; whereas, except for the UK, the utilities show modest growth.

In the case of services, the Netherlands and Italy stand out for the strength and broad base of employment growth, though the latter characteristic also applies to France. The UK position is, in contrast, extremely diverse with large proportionate declines in transport. All countries, however, record significant growth for hotels and catering, communication, financial and business services (and their components (81-85) shown in Table 3) and the large 'other services' category which covers many services to persons, including education, health and public administration. Inter-country differences are most noticeable for retail distribution where job losses resulted in Germany and the UK.

The growth of female employment (Tables 4 and A2) at the more detailed level reveals (excluding Italy because of lack of data) the large extent to which the main growth areas in services have intensified the employment of women. There are very few cases where female employment has not increased relative to that of males, notably in wholesale distribution (UK), hotels and catering (France), insurance (UK) and renting, leasing and letting (Netherlands). Particularly significant increases in female employment proportions arise in communication, banking and finance, business services and other services.

In fact, with few exceptions, female employment has changed proportionately more than has male employment in expanding service industries and proportionately less in the few declining service industries. This is also true for agriculture, energy and water, and building and civil engineering; here, employment is in overall decline but, for building and civil engineering, female employment actually increases.

In contrast, for manufacturing, the poor fortunes of the sector are as likely to be shared by women as men. For certain industries the position is the same across the four countries. In electrical engineering, motor vehicles and textiles, leather etc. women are relatively worse off than men; only in food, drink and tobacco are women better off. For the other industries the country-industry pattern is very mixed.

This analysis of movements in employee jobs between the mid-1970s and mid-1980s needs to be considered together with changes in the extent

Table 4 Female Employment Proportions 1975-85[a]

NACE	Division or Class	Females as % total[b]					Change in females as % total change				
		France	Germany	Italy	Netherlands	UK	France	Germany	Italy	Netherlands	UK
0.	Agriculture, forestry, fishing	17	28		17	23	0	47		-233	5
11/12	Solid fuels, coke ovens	4	3		0	4	-1	-6		-6	0
13/14/15	Petroleum, oil, nuclear fuels	18	13		9	13	25	31		25	12
16/17	Electricity, gas, water	19	15		10	20	26	27		85	10
21/22	Extraction/preparation of metals	11	10		7	9	6	11		8	16
23/24	Mineral extraction	17	20		8	16	12	19		6	41
25/26	Chemicals	33	27		14	28	21	46		14	27
31	Metal manufacture	18	21		9	23	18	31		7	23
32	Mechanical engineering	17	16		8	16	9	21		-4	21
34	Electrical engineering	38	35		16	33	78	60		37	82
35	Motor vehicle manufacture	18	15		5	11	29	1		16	14
36	Other transport manufacture	14	13		6	10	-3	9		0	12
33+37	Office, DP, instrument engineering	34	38		18	30	100	54		11	51
41/42	Food, drink, tobacco industry	34	43		23	41	266	-19		20	38
43	Textile industry	55	53		26	28	57	56		27	173
44/45	Leather, footwear, clothing	75	77		58	72	77	80		64	72
46	Timber and furniture	25	20		9	20	19	41		10	14
47	Paper, printing, publishing	35	38		21	33	25	44		-12	31
48/49	Other manufacturing	35	35		19	34	59	250		22	43
5.	Building and civil engineering	8	10		6	12	-6	-16		-18	-7
61/62/63	Wholesale/scrap/agents	34	36		23	31	58	3		-29	13
64/65	Retail distribution	52	68		58	62	68	-186		70	39
66	Hotels and catering	51	61		44	66	46	63		61	72
67	Repair of goods and vehicles	14	16		11	22	24	25		2	100
71	Railways	14	6		12	6	-49	9		54	7
72	Other land transport	13	15		7	13	26	51		-34	10
73-76	Other transport	22	19		11	18	45	-24		27	13
77	Travel agents etc.	32	29		29	42	83	78		38	-21
79	Communication	44	34		19	25	70	56		31	117
81	Banking and finance	50	53		44	58	55	61		130	70
82	Insurance	57	45		31	43	73	67		43	11
83	Business services	50	52		34	48	55	63		40	51
84/85	Renting, leasing, letting	39	43		17	33	68	77		11	200
9.	Other services	60	53		55	63	70	67		82	132

Source and Note (a) as for Table 3. (b) In the more recent year available.

of part-time working among employees on the one hand and in self employment on the other hand. These will be taken up in section 4.2 when discussing developments in forms of contractual arrangements.

No further analysis of the detailed industrial differences between countries will be given here but the above figures do imply other dimensions of interest in addition to the productivity and competitiveness issues usually provoked by international comparisons of industrial employment growth. To what extent could the different rates of industrial growth derive from different rates of contracting out service functions with a corresponding effect upon the inter-country variations for services? Why does Italian male service employment grow so rapidly during the recent recession? Is this connected with the lack of part-time working among women even though full-time (and part-time) female employment in fact increased very rapidly? Would Dutch male employment have grown much faster in the absence of the large increase in female part-time jobs there? More generally, what has happened to the average quality as opposed to the quantity of employment?

These questions will not be answered here (see, however, the separate country studies for further discussion) but they do suggest another axis for research namely that concerned with demographic change, degrees of labour force participation and the potential impact of new technology upon working patterns over the medium and long run under different supply-side conditions. This will be pursued in Chapters 3 and 4.

2.3 Projections of Employment

In none of the five countries studied does there appear to be any realistic prospect of achieving full employment before the end of the century. The most optimistic outcome is that unemployment will decline only slowly, if at all.(4) This conclusion applies where employment projections are accompanied by endogenous labour supply responses which reduce supply when unemployment is high (as for the UK) or where variant supply projections are made in order to compare them with independently produced variants of labour demand (as for Germany).

Whilst the overall labour market imbalance may not be expected to change very much, this in itself implies a major change for the labour market environment. The fact of a prolonged failure to bring down

unemployment to more acceptable levels is all the more significant if viewed from the perspective of the year 2000. By that time, a quarter of a century of very low unemployment will have been followed by a quarter of a century of very high unemployment. This would seem to represent a large and sustained enough change of regime to cause long-run changes in social attitudes and behaviour.

Ironically, the feature most immediately associated with the earlier period is likely to reassert itself. The outlook for employment appears against a background of prospective growth in GDP which would not compare unfavourably with the achievement of post-war years. The rate of inflation is also likely to be closer to that of the pre-1975 period than to its average over the last decade. Growth in real national income is being achieved, however, largely through the rationalisation of production rather than the expansion of capacity sufficiently to create more jobs or even maintain the level of employment.

The gains in efficiency from overhauling organisation and introducing new technology are enough to achieve large cost savings per unit of output but not enough to regain much lost ground in Europe's net trade position. Employment in the traded goods sector has thus declined because the growth in productivity has exceeded the growth in output and there is every prospect of this trend continuing. Employment in the non-traded goods sector is much more sheltered and prospects are affected particularly by government attitudes towards maintaining and modernising the economic and social infrastructure. Where such public spending is given priority, the growth of output may well exceed that of productivity, given the relatively slow productivity growth envisaged for the construction sector which dominates this area of activity. But public spending in this area is likely to reflect the continuing fiscal restraint practised by all five governments.

The industrial structure will continue to change in favour of the service sector as conventionally classified but this will not be at the same rate as experienced over the 1975-85 period. This is partly because the decline of manufacturing employment will be slower or even absent. The growth of services will continue to be hampered by the effect of a restrictive budgetary policy upon the public services and the fact that the dominance of the public sector tends to constrain the growth of the private sector in its place. The industrial projections

available (summarised at the aggregate industry level in Table 5 - there are no such published results for Italy) suggest that the main growth areas for employment over the next five years which are common to all five countries will be in the business and related services; tourism and leisure activities; and health care.[5] Where the medium-term assessments differ most is in their view of manufacturing employment, with the Netherlands and Italy facing a stable or increasing number of jobs, Germany a modest decline and France and the UK facing somewhat greater declines. There is also some disparity in the projections for distribution. However, additional comment at this stage will be confined to the main features of occupation and employment status associated with the projections. Further comparisons will be given in Chapter 5 on new areas of employment growth.

The somewhat slower medium-term structural change will moderate the pace of occupational change. However, shifts in economy-wide occupational structure depend on shifts not only in industrial patterns of employment but also in the occupational structure within industries and the interaction between the two (Germany (p.16), Italy (p.28), the Netherlands (p.63) and the UK (pp.41-2). Over the medium term, the occupational effects within industries are likely to be comparable with those of the previous decade. These were large in all countries and the overall impact on occupational structure is also large despite more modest industrial effects.

The disparities in occupational classifications used in the available forecasts make international comparisons even more hazardous than is the case for industrial projections. Those occupations most likely to expand are the more highly qualified groups: those particularly associated with the industrial expansion mentioned above (financial and business specialists, recreation professions, health care professions); those likely to increase their employment shares in many industries (managers and supervisors); and those whose employment is fairly concentrated industrially but where occupational shares within those industries are rising (engineers, scientists and the intermediate technical occupations).

Associated with these projected industrial and occupational changes are further increases in the employment of women and further (modest) reductions in the hours worked per year by full-time employees. Self employment is expected to rise in three of the countries, tending to

Table 5 Selected European Industrial Employment Projections[a]

% or % p.a.

Industry (rough NACE equivalent)	France 1985 - 1991		Germany 1982 - 2000		Netherlands[a] 1982 - 1990		UK 1984 - 1990	
	Share in base year	% p.a growth	Share in base year	% p.a. growth	Share in base year	% p.a. growth	Share in base year	% p.a growth
Agriculture (0)	7.5	-3.3	5.5	-1.3	7.0	-0.5	2.5	-1.7
Mining (11-15)	0.4	-3.4	2.0[b]	-0.8[b]	..	..	1.3	-3.1
Food, drink and tobacco (41-42)	2.8	-1.3	3.4	0.2	4.3	0.2	2.5	-1.5
Chemicals (2)	1.5	-1.1	2.5	-1.3	3.3[c]	1.4[c]	1.7	-1.2
Metals (31)	0.9	-1.9	1.7	-1.4	0.9	-	1.1	-1.5
Engineering (32-37)	9.6	-0.8	16.2	-0.4	9.5	1.5	11.0	-1.7
Textiles and clothing (43-44)	2.6	-2.6	2.5	-2.3	1.3	0.5	2.4	-3.4
Other manufacturing (45-49)	5.2	-1.4	5.9	-0.9	4.6[c]	-0.1[c]	4.9	-0.8
Construction (5)	7.0	-0.7	7.5	-0.9	9.2	-0.5	6.3	0.3
Public utilities (16/17)	1.0	0.2	..[b]	..[b]	1.2	0.5	1.3	-1.3
Transport and communication (7)	6.6	-0.1	5.7	-0.1	8.1	0.5	6.2	-
Distribution (6)	12.2	0.3	13.1	-0.4	18.8	1.5	14.5	-
Professional services (8)	8.5	0.2	3.0	0.5	4.5	-0.5	9.4	1.8
Miscellaneous services (96-94)	14.6	1.3	11.6	1.1	12.5	2.0	13.2	2.7
Other services[d] (91-95,98)	19.7	0.2	19.3	0.9	14.7	1.0	21.6	-0.1
Production industries (1-5)	31.0	-1.1	41.7	-0.7	34.4	0.2	32.6	-1.3
Services (6-9)	61.5	0.5	52.8	0.5	58.7	0.7	65.0	0.8
Total	100.0	-0.3	100.0	-0.1	100.0	0.8	100.0	0.1

Sources: Country studies (Chapters 2 and/or 5) and INSEE (1986), IAB (1986), CPB (1986) and IER (1985/86), respectively.

Notes: (a) Definitional differences between the projections are considerable and the comparisons given in this table are only preliminary. Note especially that the results for the Netherlands relate to 'labour years' and, if measured in persons, the growth rates would be 1.0 and 0.5 per cent per annum higher for total and manufacturing employment, respectively. (b) Public utilities are included in mining. (c) Rubber and plastics are included in chemicals. (d) These include education, health and public administration which cannot be distinguished separately in all of the sources.

stabilise in the other two. Part-time employment is expected to rise but its extent will vary greatly between countries: the predominance of women in this category and its concentration in certain service industries will continue, largely unaffected by modest increases in male part-time work. Hours of work for part-time employees are likely to remain roughly constant in spite of the downward pressure on the hours of full-time employees.

While the macro-economic policy response to the labour market situation will be insufficient to reduce unemployment very much, the use of special employment and training measures is likely to increase in all countries in an attempt to cut unemployment or to ameliorate the circumstances of particularly disadvantaged groups, including the long-term unemployed. In some countries, notably the UK,(6) the scale of intervention has major implications for the relationship between 'conventional' employment in both private and public sectors and 'special' employment within those sectors (through employment subsidies) or through job creation schemes. The latter may either be associated with the conventional labour market (through project management provided by employers operating there - typically local authorities and other public or private non-profit-making institutions) or be quite separate, drawing on a special management infrastructure set up by the state.

Against the above background, the study has gone on to make the distinction between the different <u>forms</u> in which job opportunities arise and the different <u>areas</u> of economic activity in which they appear. The first is concerned with how the characteristics of jobs are evolving, notably regarding the essential skill mix required to do them, and the contractual and organisational arrangements within which they are offered to members of the labour force. The second is concerned with the functions of the economy which appear to be increasing and explores where in the industrial-occupational structure they are principally located: i.e. where people are being employed to carry out those functions.

3. A SUPPLY-SIDE PERSPECTIVE

There has been considerable debate about the notion of and need for greater flexibility in the labour market and its implications for the pattern of work. Much of the debate has been set in terms of the combined effects of fiercer international competition and the major opportunities emerging for organisational and technological and change. However, certain supply-side issues are inextricably linked to the development of new forms and new areas of employment growth and these are considered below.

3.1 Labour Force Participation

For all countries except the Netherlands, the growth of the population of working age (15-64) built up from the early 1970s, peaking in 1980-82 for France and Germany and in 1984 for Italy and the UK.(7) For the Netherlands the growth rate has been much more stable, though declining slightly in the 1980s. During 1975-85, aggregate participation rates declined in the case of France and Germany, remained roughly stable for Italy and the UK, and rose for the Netherlands. In all countries the participation rate for males fell substantially, ranging from about 8 percentage points in France and Germany to 4 percentage points in the UK. For females it rose by as much as 10 points in the Netherlands but not at all in Germany, with the other three countries in the 4-6 percentage points range. Whilst some international convergence in participation rates for females has taken place in the last decade, the differences between the five countries remain very large (19 points compared with 24 in 1975). They are also still quite marked for males (11 points compared with 9 in 1975). The UK is at the top of both ranges; France, Italy and the Netherlands are at the bottom for males (with Germany joining them by 1985), and Italy and the Netherlands are at the bottom for females. The outcome for the labour force has been steady growth of one per cent per annum or so for Italy and the Netherlands and fluctuating (though positive on average) growth for the other countries.

Labour force participation rates by age have also changed markedly but as with the aggregate figures the differences remaining are still large (Tables 6 and 7). The UK maintains its position at the top end for both sexes and three of the main aggregate age groups but is placed second (with Italy) to Germany for males aged 25-49 and to France for

Table 6 Labour Force, Employment and Hours Worked: Males 1985

% or thousands

	France	Germany	Italy	Nether-lands	UK	EUR 10
Total population	25,556	28,430	27,266	6,989	27,176	129,279
% in labour force	67.6	69.6	67.1	65.7	72.9	69.0
% 14-24 in labour force	50.0	56.2	47.8	42.1	69.0	54.7
% 25-49 in labour force	96.9	94.9	96.2	94.0	96.2	95.8
% 50-64 in labour force	60.7	71.7	67.4	61.4	76.6	68.9
% 65+ in labour force	4.2	5.4	8.1	4.2	8.5	7.0
Labour Force	13,594	16,945	14,883	3,728	16,076	72,690
% aged 14-24	14.9	17.2	14.8	15.1	21.6	17.0
% aged 25-49	65.1	59.6	60.6	67.3	55.4	60.4
% aged 50-64	19.2	22.0	22.9	16.9	21.3	21.2
% aged 65+	0.8	1.1	1.7	0.7	1.7	1.4
% employed	91.5	94.2	93.8	90.5	88.2	91.9
% unemployed	8.5	5.8	6.2	9.5	11.8	8.1
Employed	12,439	15,958	13,959	3,375	14,173	66,791
% full-time	96.8	98.0	97.0	92.3	95.6	96.6
% part-time	3.2	2.0	3.0	7.7	4.4	3.4
% employers and self-employed	17.1	11.7	28.0	11.6	14.7	18.4
% employees	81.8	87.6	69.4	88.0	85.3	80.5
% family workers	1.1	0.7	2.6	0.4	-	1.2
% agriculture	8.9	4.5	10.7	6.4	3.1	7.4
% industry	41.7	50.8	37.8	36.7	45.5	43.0
% services	49.4	44.7	51.4	56.9	51.4	49.6
Average hours normally worked						
All employed	42.1	42.6	41.2	42.4	44.5	42.7
Employees	39.8	40.8	39.6	40.5	43.3	40.8
Full-time	40.2	41.2	39.8	42.1	44.4	41.4
Part-time	24.0	18.5	32.4	20.9	15.8	20.7
Agriculture	41.2	44.3	40.7	42.8	47.4	42.8
Industry	39.8	40.2	40.4	40.1	43.5	40.9
Services	39.6	41.6	38.7	40.6	42.8	40.7

Source: Labour Force Sample Survey 1985 - Eurostat. Tables 01,05,15,27, 28,34,47,55,56

Table 7 Labour Force, Employment and Hours Worked: Females 1985

% or thousands

	France	Germany	Italy	Nether-lands	UK	EUR 10
Total population	27,373	31,429	28,996	7,114	28,593	137,998
% in labour force	45.7	40.6	32.4	34.1	47.9	40.9
% 14-24 in labour force	43.5	51.9	37.9	43.4	58.6	47.3
% 25-49 in labour force	70.5	60.9	49.0	47.7	68.0	60.8
% 50-64 in labour force	37.3	32.4	21.2	18.6	44.7	32.2
% 65+ in labour force	1.9	2.2	2.2	0.7	3.0	2.3
Labour Force	10,139	11,154	7,801	1,997	11,358	47,046
% aged 14-24	18.8	24.0	23.0	28.9	25.1	23.0
% aged 25-49	63.4	57.4	61.1	60.7	55.0	59.3
% aged 50-64	17.1	17.5	14.7	10.1	18.5	16.7
% aged 65+	0.7	1.1	1.2	0.3	1.3	1.1
% employed	87.4	91.5	85.0	87.6	89.0	88.3
% unemployed	12.6	8.5	15.0	12.4	11.0	11.7
Employed	8,858	10,209	6,631	1,749	10,110	41,526
% full-time	78.2	70.4	89.9	48.4	55.2	71.2
% part-time	21.8	29.6	10.1	51.6	44.8	28.8
% employers and self-employed	6.4	5.4	15.8	4.3	6.9	8.1
% employees	85.0	88.5	73.6	89.6	93.1	85.1
% family workers	8.5	6.2	10.6	6.2	-	6.8
% agriculture	7.1	6.3	11.5	3.1	1.3	6.7
% industry	19.3	25.6	24.5	11.9	19.5	21.2
% services	73.6	68.1	64.0	85.0	79.2	72.1
Average hours normally worked						
All employed	36.3	35.8	36.9	28.9	30.1	34.5
Employees	35.0	34.9	35.8	28.5	29.8	33.3
Full-time	38.6	40.6	36.8	40.0	39.6	39.0
Part-time	20.9	20.8	24.2	17.3	17.6	19.4
Agriculture	35.0	40.7	35.5	26.7	27.5	35.4
Industry	37.5	35.5	38.9	31.8	34.5	36.3
Services	34.4	34.5	34.4	28.0	28.7	32.3

Source: Labour Force Sample Survey 1985 - Eurostat. Tables 01,05,15,27, 28,34,47,55,56

females aged 25-49. The differences are especially great for those aged 14-24 (17 percentage points between the UK and the Netherlands for males and 21 percentage points between the UK and Italy for females) and females aged 25-49 and 50-64 (about 20 and 25 percentage points, respectively, between the UK on the one hand and Italy and the Netherlands on the other).

The relative importance given to supply and demand-side factors in explanations of the changes in participation rates, notably the rise for women, is still a matter for debate. But the international variations suggest that there is still scope for major supply-side adjustments for certain countries. Notwithstanding cultural differences, the trends towards longer delays before initial entry of both sexes to the labour market and towards earlier retirement for men are of a long-term socio-economic nature and suggest that the UK in particular has substantial further adjustment ahead of it. Similarly, Italy and the Netherlands are likely to experience further strong upward pressures on participation rates for females in the 25-49 and 50-64 age groups.

How these underlying supply trends will interact with the demand side will depend on the structure of job opportunities. The role of women in the continued growth of the service sector is obviously important but the nature of that involvement could alter in response to further potential changes in participation and part-time work among males.

Broadly speaking, the main groups having greatest quantitative discretion over 'whether or not but if so how' to participate in the labour market are young people, married women and those in the retirement age band. The 'participation/part-time' axis of choice affects all three. Arguably, their qualitative discretion is less than other groups because of their more limited human capital in terms of amount and/or vintage. In addition, the demand factor tending to associate part-time opportunities with low human capital requirements drives down the degree of human capital utilisation achievable even by those who are skilled (notably, women).

Thus, from the long-run supply-side perspective, the developments of new forms and new areas of employment growth may be judged according to how far they create skilled jobs offered on more flexible terms than in the past. This positive aspect is stressed particularly in the

Italian study (Chapter 4). In the short and medium run, however, there is a further issue. This follows from the decline in jobs in which males working full-time have predominated. Fitting a large increase of unemployment and enforced early retirement into the longer-term supply/demand scenario confuses the picture greatly. The rise in numbers of quantity-constrained suppliers of labour is accompanied by others who are principally quality-constrained (working below their optimum skill level).

The evaluation of the medium-term implications of new forms and areas of employment growth will then be profoundly affected by the degree of disequilibrium evident in the so-called primary labour market. The creation of large numbers of jobs with, for example, modest office-related skill content and contractual arrangements which make them suitable only for those who are seeking part-time work may well be seen as constructive in the Italian context. In that country unemployment is relatively low for males and high for females and there is a dearth of part-time employee jobs in the formal sector (see below). But for the United Kingdom, with the reverse situation, this outcome would be seen as inadequate by redundant male manual workers seeking full-time employment with or without re-training. In that respect the fact that the Netherlands and the UK in mid-1986 had male unemployment rates of 13-14 per cent compared with 7-8 per cent for France, Germany and Italy, provides a rough indication of how different in scale is the problem faced by those two countries.

However, the persistence of high male unemployment could begin to induce long-run behavioural changes. First, the labour supply of prime-aged men could become more responsive to high unemployment leading to changes in the intra-family division of work within the home and the labour market: a possible consequence would be the further absorption of women into the labour force and the partial 're-integration' of men into the home. Second, the occupational preferences of men could alter to move more into line with the availability of jobs, not only as regards the choice between part-time and full-time work but also in terms of the actual skills in demand. The latter would help to break down occupational segregation (though by males encroaching upon female territory) but there is little evidence of this happening so far.

3.2 Part-time Employment

Although a parallel has just been drawn between the situations facing the Netherlands and the UK, it is usual to distinguish between them in discussions of labour supply. This is because of the striking differences observed in female labour force participation mentioned earlier. But, in relation to the proportion of employed females working part time and their average hours of work, the two countries are in fact much closer to each other than to the remaining three of the study. Moreover, whilst the last decade saw relatively little change in aggregate labour force participation and part-time employment rates recorded for the UK (Table 8), for the Netherlands there were major increases in both rates (though the figures for the part-time rate are especially affected by definitional changes). Despite this convergence, however, the outcome for the unemployment rate amongst women is very different. For the Netherlands it follows the male rate fairly closely, amounting to 14 per cent or so in 1985 (OECD definition), whereas for the UK it is much less at about 9 per cent.

The experience of the other three countries is also of interest in this context. Germany has maintained relatively stable labour force participation and part-time employment rates, only the former having increased slightly. The female unemployment rate tracks the male rate at a slightly higher level. In France, both participation and part-time rates for women have risen more noticeably and the female unemployment rate is considerably higher than that for males (13 against 8 per cent in 1985, OECD definition). The participation rate is not much different from that of the UK or Germany but the part-time rate (Table 7) is roughly 20 per cent compared with 30, 45 and 50 per cent for Germany, the UK and the Netherlands, respectively.

Italy provides the special case for the female part-time employment rate: at 8 per cent in 1983 (Table 8) it is only slightly more than that recorded for males in the Netherlands. Both countries, having experienced a similar growth in the participation rate (reaching 40 per cent in 1983), diverge enormously over the composition of employment growth and the unemployment outcome. Only 7 per cent of female employment growth was in the form of part-time jobs in Italy. Female unemployment (OECD definition) in Italy reached 17 per cent in 1985 compared with 7 per cent for males.

Table 8 Selected Employee Characteristics 1975-83

		France	Germany	Italy	Nether-lands[a]	UK	EUR 9
Males							
% part-time	1975	2.1	1.1	2.4	2.2	2.2	1.9
	1979	1.9	0.9	1.9	2.6	2.2	1.8
	1983	2.0	1.1	1.5	6.7	3.1	2.3
Females							
% part-time	1975	13.5	25.8	8.1	26.6	41.9	25.2
	1979	14.6	27.2	7.7	30.5	40.8	25.9
	1983	18.7	29.6	7.5	49.2	41.0	28.0
Females - industry							
% part-time	1975	7.0	21.2	6.8	22.5	30.5	17.8
	1979	6.8	21.8	3.9	22.5	28.0	17.3
	1983	9.2	23.0	4.6	37.2	24.7	17.0
Females - services							
% part-time	1975	15.9	28.3	8.6	27.4	46.2	28.7
	1979	17.1	29.8	7.5	31.5	45.5	29.2
	1983	21.1	32.1	7.3	51.2	45.1	31.4
Labour force participation rates (labour force as % population aged 15-64)							
Males	1975	84.3	87.0	84.5	83.2	92.1	..
	1979	82.8	84.5	82.6	79.0	90.5	..
	1983	78.4	80.6	81.0	80.0	87.5	..
Females	1975	51.2	49.6	34.6	31.0	55.1	..
	1979	54.1	49.6	38.7	33.4	57.9	..
	1983	54.3	49.7	40.7	39.8	57.0	..

Source: Employment and Unemployment 1986. Eurostat. Table V1/2. Employment Outlook 1986. OECD. Table G (labour force participation rates).

Note: (a) Definitional changes for the 1983 Labour Force Survey exaggerate the increase in part-time employment rates.

It is not, therefore, surprising that much attention has been paid in Italy to the apparently very limited scope for part-time employment in the formal sector (see section 4.2 below). At such levels it is perhaps reasonable to speculate that some women will be working longer hours than they wish and others are unable to take a job at all because of the lack of part-time opportunities. Moreover, this is likely to be at least one important explanation for the high female unemployment rate relative to that of males in Italy. As noted above, the UK would seem on the face of it to provide a mirror image of the Italian situation. Large-scale opportunities for part-time work have facilitated the absorption of many more women into the labour force whilst keeping the female unemployment rate far below that of males. A further consequence appears, however, to have been the challenge to the faster growth of male full-time employment in the UK service sector.

3.3 Reductions in Working Hours

A subtler form of supply-side response stems from preferences for jobs at different points in the distribution of hours (holding the hourly wage constant), rather than simply as full-time or part-time workers. Information about preferences has to be used with care, especially in an international context. The CEC survey (European Economy, Supplement B, no.10, October 1985) of employees indicated that, for those with jobs, the principal area of dissatisfaction came from those working 35 hours or more and a move towards 30-34 hours per week was clearly desired. This effect was particularly strong in Italy, where there was also a large unsatisfied preference for the 25-29 hours range, and in France. Of the five countries considered here, these were the two with the lowest proportions of part-time workers. Part-timers were generally satisfied with their hours, though for the Netherlands there was some evidence of fewer wanting to work less than 20 hours than was the case.

Survey results for 1977 and 1985 indicate, however, that employees are now less inclined to seek shorter working hours rather than increased pay. British employees were particularly reluctant to do this; the Dutch were evenly balanced between the two. Together with the previous results, this suggests that the reductions in full-time average hours that have been made have reduced the desire for further cuts. Other explanations may be seen in more collective rather than

individualistic terms: the worksharing motive behind trade union action on reducing hours of work is undermined by the lack of strong evidence that this is capable of reducing unemployment very much (Germany, p.69; Italy, pp.72-3; Netherlands, p.35).

As regards flexibility, the same European survey suggests that current employees are quite willing to be flexible in the allocation of hours during the month and year. In return for reduced annual hours they would also be willing to work evening and weekend shifts. Manual workers are more likely to prefer standard arrangements than are other employees. Differences between the five countries under study are not very great, with the UK and the Netherlands being somewhat more wedded to the same working hours per day. Shiftworking appeals least to the Dutch. Unemployed respondents broadly reflected the views of the employees.

The results indicate that there is considerable scope for management to introduce changes in the pattern of hours of work within the framework of full-time employment. Other purely national surveys cited in the country studies (e.g. Germany, p.21) tend to confirm the European findings. Any future changes are, however, likely to be gradual though the restraining influence appears more likely to be the capacity of management to arrange new work systems (e.g. the rolling four day week) rather than labour force resistance (Germany, pp.70-71).

3.4 Labour Supply to the Informal Market Sector

Finally, in terms of the supply side, can we draw out any strong links between the situation in the formal labour market and the extent of activity in the informal market sector or vice versa? The simple answer to this is no. The evidence adduced by all the country studies relates to estimating roughly the size of the informal sector. The methods used are not reliable enough to produce consistent estimates of the change in formal employment over time. (Germany, pp.57-9; Netherlands, pp.50-52; UK, pp.80-88; but see Italy, pp.15-18.) However, given what is known about the conditions of work in that sector and the knowledge that the best opportunities will be exploited first, any relative growth in informal work will require at least a continuation and probably a further rise in open unemployment. This will drive more people out of the formal sector in search of work (including second jobs) in the informal sector. This seems to be the dominant process

rather than any association between growth in the informal economy and a revival of entrepreneurial spirit or responses to changes in the real costs of small-scale capital equipment or in the tax advantages of being invisible. So, to the extent that some country studies suggest that the informal sector is growing, this will have been stimulated by a cyclical response to falling overall demand rather than increases in the supply of people preferring to work in that sector.

4. NEW FORMS OF EMPLOYMENT GROWTH

The analysis of industrial-occupational change given in Chapter 2 ignores changes taking place in job content within occupations and in the relationships between occupations. It omits reference to the conditions of employment attached to the jobs being generated and the possible connections between the occupational outcomes of organisational and technological change and the job content/contractual arrangements which are emerging. The present section turns to these issues.

The net effect of new organisational and technological developments upon the work that people do in an economy has to be examined carefully. At the level of the employing establishment, the impact will be seen in terms of the number of people (and full-time equivalents) employed, the proportions of them in different functions and their conditions of employment. At the industrial level, the impact will emerge in the 'corporate employment structure', consisting of the numbers and sizes of establishments, how they are grouped together into different companies, the relationships between the companies in the 'same' industry, the extent to which they engage in multi-product activities, and the resulting patterns of work. At the national level, the impact will encompass the development of new industries and decline of the old; the links between domestic industries; the extent of international sub-contracting; and, more generally, the penetration by foreign firms supplying intermediate and final demands.

Furthermore, the government response to the economic situation is also a potentially important factor, especially as it affects the tax-subsidy regime facing companies and in its impact on public services and other non-marketed services in the formal sector. More broadly still, there may be changes affecting the boundary between the formal and informal sectors of the economy and between those and the voluntary and household sectors.

Thus the eventual economy-wide consequences for the availability of work and the job content and contractual conditions involved cannot be settled by reference only to case studies of particular establishments. There will remain the problem of how to add up or assess the aggregate implications of developments which initially can only be revealed at the micro or case-study level. Nonetheless, only case studies come close to the social reality of occupational change and

evidence from them is reviewed in the country studies, alongside the available national employment data and results from more specialised sample surveys.

4.1 Job Content

In order to examine changes in job content, it is helpful to make three sets of distinctions between:

(i) function and occupation;

(ii) shifts in the way a function is organised which alter jobs sufficiently to be recorded as changes in the occupational data (as conventionally classified) and those where much significant change in job content is not captured in such data;

(iii) skills actually employed, entry requirements for a job, and qualifications held by the individual doing a job.

The functions should then represent the underlying activities rather than the way in which they are carried out via occupations. The skills should represent the abilities and experience needed to do the jobs created in the occupational hierarchy rather than the formal educational qualifications or other vocational training conditions used as minimum entry requirements or held by the 'average person' in the occupation. The most easily obtained information at national level is, however, occupation by qualification and this blurs all three distinctions made above. Only for Germany is there an analysis of function by occupation and only for the Netherlands is there an analysis (now dated) of skill content by qualification.(8)

The examination of changes in job content first looks at the 'function by occupation' and 'occupation by function' data, then highlights the main points which emerge from case-studies, and finally considers the implications of 'qualification by occupation' and related data.

Function and occupation

The evidence of the German labour force survey (Table 9) suggests that certain skilled trades most associated with manufacturing industries have become increasingly devoted to the setting up, adjustment, maintenance and repair of capital equipment used in

Table 9 Occupation by Function for Germany

Occupational groups and selected occupations	Year	Total employment (000s)	Production	% engaged in[a] regulation and maintenance	repairs	other
Agricultural trades	1973	1,967	90.6	-	-	9.4
	1982	1,386	93.4	1.0	-	5.6
Miners, quarrymen, and related workers	1973	156	87.2	-	-	12.8
	1982	127	80.4	9.9	-	9.7
Manufacturing trades	1973	9,717	61.8	7.8	13.1	17.3
	1982	8,731	52.9	14.5	18.4	14.2
- mechanics	1973	896	52.8	14.4	24.5	8.3
	1982	858	45.3	18.5	32.0	4.2
- electricians	1973	688	40.2	6.3	35.0	18.5
	1982	680	34.5	22.7	33.1	9.7
- textile and clothing trades	1973	638	76.0	2.1	12.0	9.9
	1982	397	72.8	7.3	11.4	8.5
- building trades	1973	1,257	88.4	0.8	8.1	2.7
	1982	1,013	80.2	2.0	13.2	4.6
Technical trades	1973	1,399	15.6	3.8	5.0	75.6
	1982	1,559	8.1	10.4	4.3	77.2
- engineers and scientists	1973	474	10.6	1.9	2.1	85.4
	1982	536	3.9	6.2	1.3	88.6
- technicians and technical specialists	1973	925	18.2	4.8	6.5	70.5
	1982	1,023	10.4	12.6	5.9	71.1
Service trades	1973	13,489	2.6	1.1	1.2	95.1
	1982	14,843	2.3	1.8	1.4	94.5
- entrepreneurs and managers	1973	574	13.0	-	1.7	85.3
	1982	750	6.7	1.6	2.6	89.1
All occupations	1973	27,066	31.5	3.6	5.6	59.3
	1982	26,774	24.2	6.5	7.1	62.2

Source: Vogler-Ludwig (1986), p.36.

Note: (a) Rows sum to 100 per cent.

production rather than with the production tasks themselves. The change has been particularly marked for electrical and mechanical engineering trades. For the more specialised skilled manufacturing trades and in mining etc. the same phenomenon can be seen, though the proportion engaged in production activities is much higher and the numbers in total (i.e. in all functions) have fallen much more significantly than is the case for the engineering trades.

For more highly qualified technical occupations (engineers, scientists and technicians - all of which are expanding) changes in the functional distribution of work have also been substantial: the proportion engaged in production has almost halved. In addition, there have been marked reductions in the proportions involved both in planning, design, testing and research (on the face of it a rather surprising result) and in transportation and control. The functional distribution has moved towards the setting-up, adjustment and maintenance activities on the one hand and the office-based technical activities such as programming on the other hand.(9)

Amongst other white collar occupations, it is more difficult to interpret the functional evidence unambiguously, though a tendancy to specialise further on the functions which previously exemplified these occupations can be seen, i.e. the reverse of the situation for blue collar workers. Thus the data suggest a concentration upon the mainstream office functions at the expense of ancillary activities which are either reduced in aggregate or transferred to more specialist functions (Germany, p.35).

The industrial classification of German employment from 1973 to 1982/83 indicates a decline from 47 to 42 per cent for the goods producing industries; the occupational classification gives a decline from 37 to 33 per cent for production trades; and the functional classification yields a decline from 27 to 20 per cent for the production function (excluding agriculture). From this perspective, therefore, both the industrial and occupational data overstate the proportion of people employed directly in production activities and understate the decline in that proportion. However, it is worth noting that if we consider the production context to include the regulation, maintenance and repair functions, then the decline in the numbers employed in the production context is only from 37 to 35 per cent.

Similarly if we include the more highly qualified technical occupations alongside the production trades the decline is from 42 to 39 per cent.

The function by occupation data can also be analysed in order to see which occupations gain at least in relative terms from the changes in production organisation and technology (Table 10). The German results suggest that the occupational composition of production per se has not in fact changed very much. It is the increasing importance of regulation, maintenance and repair at the expense of direct production activity which is the main factor. But this is then further reinforced in its effects upon occupational employment by shifts within the regulation and maintenance function[10] away from mechanical engineering trades towards the electrical trades and technician trades.

Case-study evidence

Against this rough aggregate picture for one country it is possible to consider the case-study evidence for Germany and also the other countries for whom function by occupation analyses are not directly available. It is worth stressing, however, that case studies are difficult to set into perspective. Moreover, in an international comparative context the danger of making too much out of unrepresentative cases is compounded by the danger of emphasising the inter-country differences when in fact the intra-country differences, i.e. the inter-case differences, are of equal or more significance.

The range of evidence considered by the individual country studies (Chapter 3 in all cases) varies quite markedly and this, to a considerable degree, is due to variations in the evidence available. It also reflects the different national debates about new technology, flexibility and employment. However, all the country studies refer to the qualitative changes in job content of those industrial-occupational categories mostly affected by the introduction of new technology in production. The planning, control, adjustment, maintenance and repair functions have been greatly affected by the progressive reduction of employment in the production and materials handling functions. It is clear, moreover, that very real choices face management in devising occupational structures to implement even the same production technology. An analogous situation arises in the impact of information technology on office-based activities concerning general administration through to highly specialised technical work in engineering research, design and development.

Table 10 Function by Occupation for Germany (excluding agricultural trades)

%

Occupational groups and selected occupations	Year	Production	Regulation and maintenance	Repairs
Miners, quarrymen, and related workers	1973	2.0	-	-
	1982	2.0	0.7	-
Manufacturing trades	1973	89.1	77.8	84.0
	1982	89.1	73.3	84.5
- mechanics	1973	7.0	13.2	14.5
	1982	7.5	9.2	14.4
- electricians	1973	4.1	4.5	15.9
	1982	4.5	8.9	11.8
- textile and clothing trades	1973	7.2	1.4	5.1
	1982	5.6	1.7	2.4
- building trades	1973	16.5	1.0	6.7
	1982	15.7	1.2	7.0
Technical trades	1973	3.2	5.5	4.6
	1982	2.4	9.4	3.5
- engineers and scientists	1973	0.8	0.9	0.7
	1982	0.4	1.9	0.4
- technicians and technical specialists	1973	2.5	4.6	4.0
	1982	2.1	7.5	3.2
Service trades	1973	5.2	15.2	10.9
	1982	6.6	15.5	11.0
All occupations above (subject to rounding in source)	1973	100.0	100.0	100.0
	1982	100.0	100.0	100.0
All occupations above (000s)	1973	6,744	974	1,516
	1982	5,185	1,726	1,901

Source: Derived from Vogler-Ludwig (1986), p.36.

It is probably fair to say that governments in France, Germany and the Netherlands have acknowledged rather more directly the need to encourage employers to adopt strategies which enhance the quality of jobs over as wide a range of the occupational spectrum as possible. The British and Italian authorities have been more preoccupied with labour market flexibility and the legislative changes which might increase it. However, over the last decade, even in the first three countries, concern for the quality of jobs has still been characterised mainly by a commitment to improvements in the physical working environment and (to a lesser extent) the avoidance of stressful patterns of working hours. Little policy momentum has built up in favour of improving the skill content and 'psychological conditions' within which skills are exercised.(11)

Turning to the case-study evidence on changing job content, a combination of 'stylised facts and related issues' emerges rather than clear international contrasts. These are quite consistent with the analysis of more aggregate data and are summarised briefly below. Specific reference to a particular country will only be made where there seems to be either a marked divergence from the position being adopted or an especially strong example of the point being made.

(i) Occupations concerned with planning, monitoring and control - notably, managers and supervisors

Changes in job content which will accompany the further expansion of management jobs will reflect the wider range of competence expected of managers and the need to take responsibility for a more complex process. The latter will use more capital and fewer people but with personnel engaged on more demanding tasks and involving greater autonomy. The requirement for broader expertise will affect general managers and specialists alike with the former acquiring greater technical knowledge and the latter, more business skills.

Responsibility for a greater mix of capital equipment and skilled employees will also characterise the supervisory occupations where greater emphasis will be laid upon communication with and the motivation of employees. This aspect has been ignored by some commentators who have expected supervisors to decline simply with the number of semi-skilled and

unskilled personnel under them.

(ii) The relationship between higher and intermediate professions

This issue concerns the relationships both between long-established occupations (doctor/nurse, scientist/laboratory technician, etc.) and between relatively new occupations (software engineer/programmer, design engineer/technician/draughtsman, manager/data processing specialist). In many of these linked occupations, changes in product demand, labour market conditions, and vocational education are creating situations in which significant adjustments are already taking place in some countries. Relative salary costs and shortages of certain higher-level skills combined with the development of technological aids to decision-making indicate the potential for further changes (eg. in health care) subject to institutional restraints.

In addition, in certain areas of the economy there seems to be scope for the emergence of new higher and intermediate professional groups. For example (Italian study, pp.45-6), the development of tourism and leisure activities need not be associated with a continuation of temporary, sometimes seasonal, low skilled and low paid employment. Aiming at higher quality and a wider range of service generates a demand for more professionally qualified entrepreneurs, managers and local administrators, supported by a cadre of skilled personnel. The latter may work behind the scenes or be in direct contact with the customer (eg. in providing tourist/travel information, instruction in recreational pursuits, supervision of customer relations in hotel, catering and recreational establishments). The speed with which such service industries move towards the 'high value added' end of their product market clearly determines the rate of growth of these more skilled occupations. It is also, however, determined by the rate at which appropriate new professional roles are identified and the relevant training is provided.

(iii) Other non-manual occupations

This group is dominated by clerical, secretarial and sales occupations. Some of these personnel are directly involved with customers in areas where attempts are being made to improve the quality of customer service. There the job content is placing greater stress on the combination of a higher level of product knowledge, inter-personal communication skills, keyboard skills and software knowledge needed to use the financial/sales information system, and wider commercial awareness.

In other respects, though, there seems to be some uncertainty about the net impact of organisational and technological change upon these occupations. It is generally agreed that many routine clerical tasks and the supervisory roles attached to them will be abolished with the widespread establishment and use of machine-readable data bases. The entry and interrogation of data will be organised much more efficiently but just how far supervisors, managers and other intermediate and higher professional staff will reduce their need for clerical and secretarial assistance remains to be seen. The scope for more complex analysis and presentation of data and the ability to create higher quality documentation is likely to increase the demand for certain clerical/secretarial staff. These will have higher levels of literacy and numeracy, greater knowledge of the business and its information system, and skills in the use of software for word-processing, statistical analysis and graphics.

The above developments must also be considered in the light of two further factors. First, employment in these occupations is likely to benefit from the continuing growth of the service sector where the nature and size of many of its enterprises limit the economies of scale obtainable. Second, the quality considerations mentioned above in relation to customer service combine with efficiency arguments to create a demand for more flexible personnel. These should be able to switch from counter service to liaising with suppliers to carrying out supporting clerical and secretarial tasks. This is an emerging form of multi-skilled and multi-functional office-based occupation which receives less attention than does its manual craft counterpart (see below).

Thus whilst the net effect of these changes upon the numbers of clerical, secretarial and sales staff is highly uncertain, the content of the average job will tend to rise quite substantially (UK, p.59).

(iv) Skilled production occupations

The fate of skilled craftsmen seems to be the crucial issue in considering the implementation of new technology. The possible consequences are (a) abolition of the job; (b) de-skilling to a large degree (eg. to a machine-minding or materials handling function); (c) re-skilling where previous knowledge is transferred to a new context requiring some re-training (eg. transfer to maintenance from production); (d) multi-skilling where, typically, the need for a wider craft-based competence involves the acquisition of complementary skills in electronics; and (e) up-grading to the status of technician/programmer/complex keyboard operator which exploits previous knowledge but involves substantial re-training or recruitment of new qualified staff.

The development of the multi-skilled, multi-functional, worker is highlighted in the case-study evidence for all countries (see, especially, France, p.30; Italy, pp.41-2; Netherlands, p.31; UK, p.60). A worker who deploys, for example, mechanical and electronics skills and deals with production, regulation of equipment and minor repairs would fall into this category. Similar attention is paid to the specialised maintenance and repair functions employing highly skilled craftsmen. However, the introduction of new technology generally creates far fewer such jobs than it destroys or de-skills traditional craft jobs engaged in production (Germany, pp.37-42). The extent of up-grading has evidently become the litmus test of enlightened management: how the numerically controlled machine is programmed and by whom is the example usually cited. But the evidence on the relative costs of alternative strategies as opposed to their feasibility in terms of the technical and training requirements is extremely limited. The emerging division of labour between skilled manual workers and more highly qualified technical personnel at the point of technological transition is insufficiently monitored and understood at national level to allow for a satisfactory explanation of international

differences.

(v) Management control versus technological necessity as determinants of job content and occupational structure

The last point implies that it would also be premature to generalise on the much debated issue of how far employers seek, choose and implement technologies which increase their control over labour as the principal aim. Nonetheless, the introduction of information technology (in its widest sense) does present a particularly important opportunity for examining this issue. Its flexibility would seem to offer the potential for a much greater variation of economically acceptable management choices than with other major technologies.

Qualification and occupation

As noted at the beginning of this section, nationwide quantitative information on job content is extremely limited even for those occupations which have not been at the frontier of change. No country systematically collects data on the changing skill content of occupations and many do not even provide adequate data on changes in qualifications held by people employed in different occupations.

Only for the Netherlands (pp.19-25) is it possible to cite a job content analysis which distinguishes content from qualification. Despite the crude nature of the data, they do provide tentative evidence (at least for the period 1971-77) for the view that changes in the overall job content of the Dutch economy were very small both absolutely and relative to the increase in average qualifications. Note also that the increase in average educational level during this period was roughly comparable with that during 1979-85. Is it conceivable that the same result regarding job content holds for the more recent period? The figures also indicate a polarisation in job content during 1960-77 in favour of higher and lower levels of job content at the expense of the intermediate level (roughly equivalent to skilled manual and clerical work).

During a period of increasing labour surplus, the better qualified filter down the occupational hierarchy to take jobs at lower levels at the expense of those with fewer qualifications. The gap between qualifications possessed and qualifications used will widen at such

times. In the Netherlands, between 1960 and 1977, those employees working below their level of education increased from 7 to 26 per cent and those working above fell from 36 to 21 per cent. During the 1971-77 period alone the changes in these figures were of the order of 10 percentage points in both cases. Simulations with the Dutch stock/flow model (VOSTA) of labour market and educational changes in the population actually show that the relatively high rates of unemployment amongst the less well qualified are due not to a shortage of low-skilled jobs but to a form of 'educational crowding out'.

This line of reasoning can, of course, be taken too far. But the Dutch analysis is an effective antidote to exaggerated claims, based upon extrapolation from special cases, about the burgeoning job content of the economy as a whole and the need for educational levels to rise to keep pace with the increasing sophistication of the modern world of work.

The information on occupation and qualification for the other countries does not benefit from even the rough job content analysis available for the Netherlands. Two particular features are taken up by the German and UK studies: the importance of supply-side explanations for rising qualification rates and the evidence on polarisation.

Shifts in skill content have to some extent been obscured by the waves of better educated people joining the labour market in the last two decades or so. The relationship between occupation and qualification is partly supply determined even when the occupation is very precisely defined from the demand side to take into account the full technological and organisational context of the job and the cognitive and manipulative skills required. For example, UK research suggests that roughly half of the growth in highly qualified persons (with a university degree or equivalent) between 1971 and 1981 can be attributed to the growth of those occupations where qualified people tend to be concentrated (the occupational effect) and half to the growth of qualification rates within occupations (the certification effect).[12] Assuming that the start of the period represents a good match of education to occupation, the occupational effect might be associated with changes in demand and the certification effect with changes on the 'supply-side', including the formalisation of entry requirements and the 'filtering down' process. However, the UK study (p.56) proposes that at least some of the certification effect will be

due to demand-side influences reflecting genuine changes in job content. The latter require specific higher qualifications rather than the use of higher qualifications to screen for general ability and should also be distinguished from the activity of the professions in defending their status by increasing the educational restrictions on entry.

Whilst the polarisation in job content appears clearly in the available economy-wide Dutch data, the German study emphasises (p.49) that, in industry, this represents the phase of mechanisation through 'Taylorisation' of the production process. Tasks are divided into less demanding components which can be done by less skilled operators working in environments created and controlled by employees requiring higher qualifications than the skilled worker. With the automation of production, the transformation of qualification/occupational structures then enters a second phase which dispenses with many of the less skilled jobs. These include for example, areas of materials handling which hitherto have been too expensive to automate compared with the costs of unskilled labour. Polarisation would thus become an increasingly inappropriate metaphor. At the same time, however, it is apparently still too early to observe a reduction in polarisation. This is despite the fact that the increasing educational certification of the labour force would probably distort the pattern in that direction regardless of whether or not certification implied utilisation.

The reduction of polarisation is also recognised, guardedly, as a possibility in the French study (p.39). Here, though, the main concern is with the emergence of new intermediary occupations involving multi-skilled and multi-functional workers. The quantitative significance of this development is, however, uncertain in relation to the decline in conventional manual jobs. What characterises the French situation is, of course, the whole nexus involving relationships between qualification, work organisation, employment and socio-economic life styles - the rapport salarial. This encompasses contractual arrangements as well as job content or qualifications and the rest of this section examines the evidence on the contractual forms associated with the main areas of employment growth in the five countries.

4.2 Contractual Arrangements

While the analysis of job content is very badly served by the available data, the position for contractual forms is rather better. Apart from the usual monitoring of employees in employment, past trends for major groups like those self-employed who operate well within the boundary of the formal or 'measured' economy and similar groups of regular part-time employees can generally be established and there is sometimes scope for distinguishing cyclical from secular change. However, beyond that there is a dearth of information especially about changes over time in a variety of contractual forms.

There are three basic questions of interest on the subject of contractual arrangements. These relate to the forms of possible contract, the changes in numbers of people covered by each form, and the principal explanations for the movements over time. European governments have become increasingly interested in the scope for manipulating contractual forms in order to stimulate higher employment. To date, however, there is insufficient evidence either to determine the success with which governments can influence the distribution of people among contractual forms (other than through 'special schemes') or to establish the effect of the changing distribution (however produced) upon the aggregate level of employment in the economy. This section is concerned principally with examining the possible contractual arrangements and the statistical evidence on recent trends rather than with a full explanation of changes over time and differences between countries.

Forms of contract

International discussions of contracts of employment must negotiate a minefield of terminological difficulties compounded by problems of translation. For the purposes of discussion in this section, however, the typology of contractual form shown in Table 11 will be used.

Individuals belonging to any of the first eight categories may regard themselves as being 'self employed'. Ambiguity as to the perception of self-employed/employee status is particularly high among off-site workers. Firms may regard their contracts with individuals in these categories as covering the purchase of a product or service rather than the purchase of labour as supplied by an employee. In terms of the legislative framework they may be self employed but in terms of the

Table 11 A Typology of Contractual Forms

(a)	owner of small incorporated business
(b)	owner of small unincorporated business
(c)	member of partnership (the person being a principal in an unincorporated business)
(d)	member of cooperative enterprise
(e)	labour-only sub-contractor (self employed person with sub-contract for supplying labour involving others working on the site of the purchasing organisation)
(f)	self employed working on own account
(g)	family worker
(h)	off-site worker (outworker/freelance, home-based worker - working at home or from home)
(i)	casual worker
(j)	worker engaged through an employment agency
(k)	employee with short-term fixed period contract (up to and including one year)
(l)	employee with medium-term fixed period contract (more than one year)
(m)	employee with regular employment contract
(n)	formal life-time employment contract
(o)	participant in special employment, work experience or training scheme.

firm's personnel policy such contracts could be treated as very close substitutes for the recruitment or retention of employees. The nature of the regulation of the contract by the purchasing organisation may approach that of the employment relationship.

Contractual forms do not represent a linear spectrum in which one form shades into another; they comprise collections of characteristics under which are to be found concentrations of people in employment. It is convenient to think of contractual forms as having three main dimensions: (i) the commodity stipulated in the contract (ranging from the product of the small-scale supplier through to labour services provided by the conventional employee); (ii) the length of contract; and (iii) the nature of the contract in terms of its legal, economic and social basis. The last of these dimensions is, of course, a composite one and is perhaps most effectively encapsulated in the French rapport salarial.

There are really only two candidates for consideration as new contractual forms of employment in the sense that they may amount to significant qualitative departures from past forms as well as having acquired a quantitative significance which was absent a decade ago. The first is common to all five countries and is concerned with the rise in special employment, work experience, and training measures. Depending on the scheme, these have now blurred the status distinctions between two or more of the following categories: self employed, employee, trainee, student, unemployed and voluntary worker. They have also blurred the process distinctions between employment, work experience, community service, training and education.

The second candidate is more embryonic and contentious and is emerging (or more likely to emerge) in those countries which do not have very strong institutional limits on the employer's pursuit of flexible employment strategies. This is a form part way between self employment and employee status, involving more flexible work arrangements between the employer and employee. It might be seen as a more positive, higher status form of off-site working affecting not only clerical and secretarial workers but also professional and management staff. Alternatively, it may be represented as the launching of employees in small businesses linked umbilically to the 'mother' company. It has been suggested that the catalyst for such a development is the availability of information technology and the popular form has been

termed 'teleworking'.

Here, however, the evidence for the emergence of a new distinctive form (especially along the commodity and 'nature of contract' dimensions noted above) is much weaker. In particular, it is not always clear whether researchers and other commentators are being prescriptive or are actually describing the evolution of a major new phenomenon. Most attention has perhaps been given to this in the UK as part of the debate about the core-periphery model of a company (UK study, pp.62-3). But there are no national statistics which help to distinguish the phenomenon.

Aside from whether or not sufficiently different contractual forms are emerging to deserve the label 'new', there is also the question of whether or not old forms are being found in new industrial/occupational locations. This concerns, especially, the extent to which more 'precarious forms' of contract have been introduced into hitherto fairly protected areas of employment in order to achieve greater flexibility and risk sharing. Some comment on this aspect will be made below.

The owners and partners of small enterprises which also themselves have employees or comprise cooperatives are included in the list of contractual forms given above. However, the remainder of this section will concentrate upon those forms which are more closely related to the personnel policies of firms as opposed to their overall employment policies. The latter derive from decisions about their main products, the degree of horizontal and vertical integration sought and the extent to which they wish to contract out work to other enterprises at different stages of the process of production or service.

Although reference will be made to some of the specific contractual forms listed in Table 11, the key issues arising out of the country reviews are concerned with (i) the nature of 'self employment' and prospects for its future growth, (ii) the forms of 'off-site working' which straddle the boundary between self employment and employee status, and (iii) the 'flexible use of employees' through contracts which, whilst retaining the formal employment relationship, tend to reduce the commitment of employers to their employees.

The five countries begin from different positions with regard to the balance between labour market freedom and institutional or legislative restraint in the determination of employment contracts. Moreover, for item (ii) in particular, the country studies combine an

uncomfortable mixture of mentioning those contractual forms which have become the subject of current policy debate and those for which there is some quantitative information to report (at least about their scale relative to other forms if not about changes in their coverage of the labour force over time). This is inevitable but does not, of course, address the issue of whether or not they are actually growing or declining very much. Given this situation, the remarks made here are extremely tentative and it is not possible to do justice to the complexity of legislative, economic and social differences between countries in this area. What can be said, though, is that whilst these forms of work may be marginal relative to the mainstream patterns of full-time and part-time employment, they are certainly not small, taken together, and changes in their rates of growth will make a substantial difference to the quantity and quality of paid work in the economies concerned. This is especially true when considering their concentration on certain socio-demographic groups.

Self employment

Agricultural self employment has continued to decline during the period circa 1973-84 in France and Italy but for Germany and the Netherlands it stabilised in the early 1980s. For the UK there has been little change for some time. Non-agricultural self employment in France, Germany and the Netherlands has remained roughly constant with the Netherlands exhibiting a counter-cyclical increase in 1979-82, followed by an offsetting decline. In the UK and Italy it has grown at almost 1½ and 2 per cent per annum, respectively. By 1984, Italy had by far the highest share of self employment in total non-agricultural employment at 25 per cent whilst the Netherlands had barely 5 per cent: the other three countries fell in the 8-10 per cent range (Table 12).(13)

The country studies do rather reflect these magnitudes in the relative significance they attach to self employment. Little reference is made to this area of employment in the Dutch study. In France, the stabilisation of self employment in the first half of the 1980s is seen as an indication that the encroachment of employee status has reached a limit rather than as a prelude to future expansion and recovery of lost shares by self employment. The small rise in 1980-85 for Germany (mainly in tourism, recreation, health and education) and the moderation of the decline in manufacturing are expected to continue. But the

Table 12 Self Employment by Industry

ISIC.	FRANCE			GERMANY			NETHERLANDS		
	% total self employment (a)	% total industry employment (b)	% growth p.a (c)	% total self employment (a)	% total industry employment (b)	% growth p.a (c)	% total self employment (a)	% total industry employment (b)	% growth p.a (c)
Mining and quarrying	-	3.2	-	-	0.2	-	-	-	-
Manufacturing	12.4	5.0	-1.8	21.5	4.8	-0.7	7.7	2.6	-3.0
Construction	16.0	18.6	0.5	7.3	8.8	-1.4	8.7	7.6	-3.8
Distribution, restaurants etc.	41.5	23.7	-1.2	29.3	17.7	-0.1	42.0	17.2	-0.9
Transport and communication	3.3	4.2	0.4	4.2	5.5	0.5	3.1	3.2	-3.6
Financial and business services	9.1	9.3	1.5	2.2	5.4	2.6	11.9	9.3	5.9
Community, social and personal services	17.8	9.0	1.3	35.5	9.1	1.5	26.6	5.1	5.2
All non-agricultural industries	100.0	9.9	-0.4	100.0	8.2	0.3	100.0	4.9	0.5

ISIC	ITALY[d]			UK		
	% total self employment (a)	% total industry employment (b)	% growth p.a (c)	% total self employment (a)	% total industry employment (b)	% growth p.a (c)
Mining and quarrying	-	-	-	-	-	0.4
Manufacturing	16.3	14.2	0.4	2.2	3.3	4.5
Construction	6.5	18.2	1.6	21.1	32.3	-0.6
Distribution, restaurants etc.	55.1	58.0	2.3	36.4	16.4	0.6
Transport and communication	6.9	25.5	1.2	5.4	8.4	3.0
Financial and business services	0.1	1.0	4.2	10.3	10.8	4.3
Community, social and personal services	15.0	12.6	3.6	18.3	5.9	3.7
All non-agricultural industries	100.0	25.0	2.0	100.0	9.6	1.3

Sources: OECD (1986) (a) Table 16, (b) Table 17, (c) Table 18. Italian data are taken from Contini (1986), Statistical Annex, Table A1.

Notes:
(a) Self-employment by industry as a percentage of total non-agricultural self-employment (1983/84).
(b) Self-employment as percentage of total employment in each industry (1983/84).
(c) Growth rate in % p.a (France, Germany and Italy: 1973-84, the Netherlands: 1975-83, UK: 1973-83).
(d) These estimates are more up-to-date for (c) than those reported (1972-80) by the OECD but show significant differences in percentage shares (a) and (b) from the OECD figures. The construction share (a) shown in the table is 6 percentage points lower than the OECD figure, with the distribution share apparently compensating.

process is seen as an essentially conventional growth in small enterprise/self-employment activity accompanying structural shifts towards the service sector, supplemented by some recession-induced movement into self employment.

For the UK there has been more growth largely because of an increased penetration of self employment within individual industries but also reinforced by industrial change in favour of employment in the service sector. However, the structural shifts do themselves arise partly through changes in contractual arrangements involving producers contracting-out some service activities and production-related work to smaller enterprises, including unincorporated businesses and the self employed with no employees. The growth of franchising in the service sector is also an example of self employment increasing at the expense of employee jobs.

The case of Italy is clearly distinctive simply because of the scale of self employment and its rate of growth during the last decade or so. In 1985, almost 17 per cent of employment in industry and over 30 per cent of that in services was in the form of self employment (Italian study, p.6). However, Italy also provides a warning over the interpretation of past evidence and its implications for the future. This applies to the other countries but is most apparent for Italy, given the scale of current self employment and the uncertainty about whether recent growth rates will persist. First, the measurement of self employment is difficult to do unambiguously. It can encompass widely different proportions of the contractual forms (a) - (g) identified earlier (Table 11). The interaction between real changes in the extent and pattern of self employment and an incomplete statistical coverage of the different forms makes confident assertion quite out of place for one country and extreme caution the most appropriate rule for international comparisons. Second, the association of some areas of self employment with the informal economy compounds the difficulties of statistical coverage for the formal economy. Third, the rise of certain forms of self employment or, at least, the break with a previous declining trend has been so noticeable during the last decade of relatively poor overall economic growth that great interest now attaches to distinguishing between cyclical, once-and-for-all and long-run trend increases. The first will go into reverse if output and employment recover sufficiently, the second is a gain which will remain but not repeat itself in future periods, and the third reflects more underlying

dynamic developments.

Perhaps the most important issue concerns the extent to which the growth in small unincorporated businesses, as measured by the numbers of self employed, will lead to the growth of small incorporated businesses. At the point of incorporation, employers (ie. the self employed with paid employees) in most countries become employees of their respective businesses. This will depress the estimate of self employment and confuse the analysis of entrepreneurial activity and its job creation effect.

Arguably, the growth of the self employed working on their own account might be expected mainly to be a response to high unemployment and the diminution of better opportunities. The growth of self employment where the person becomes an employer of others is more likely to be a response to improvements in the entrepreneurial climate. It is worth noting, for example, that whilst UK self employment grew at four times the rate for Germany during the decade up to 1983/84, by the final year only 36 per cent of the former had paid employees compared with 62 per cent of the latter. Even with the numbers of 'employers' however, increases may be more associated with the problems faced by larger firms leading to greater contracting out than with a rise in entrepreneurial momentum. This could be said of both unincorporated and incorporated activity. It is, for example, likely to be the main explanation for the growth of self employment in British manufacturing industry, at 4½ per cent per annum during 1973-83, by far the fastest rate observed for the 21 countries covered in the review by the OECD (1986, Table 18). Indeed, in most countries manufacturing self employment declined between (very roughly) the mid-1970s and early-1980s.

Essentially, the growth in employment among small enterprises rather than in the number of small entrepreneurs is likely to be a better long-run guide to the intensity of job-creating entrepreneurial activity. It is easier to create small businesses than to make them grow. If regular statistics were available on the employment size distribution of all enterprises, it would be possible to examine the extent to which the rises in self employment and in employment in small enterprises were cyclical rather than secular phenomena. The data available on self employment suggest that the cyclical factor is all but non-existent in OECD countries (including France, Germany and the UK in the analysis); cyclical sensitivity of self employment as a proportion

of total (non-agricultural) employment is greater because of the sensitivity of the denominator.(14) Unfortunately, a similar exercise cannot be performed for employment in small enterprises.

Assuming that the data on self employment consist mainly of the owners of unincorporated businesses and the self employed working on their own account,(15) the above seems to suggest that those countries where self employment has risen are not likely to show a cyclical decline; only where noticeable increases have taken place in manufacturing (UK) and construction (Italy) is there probably much danger of this happening because of the extent of contracting out.

Thus, to sum up, the evidence for Italy, the UK and, to a lesser extent, Germany (but not France and the Netherlands) suggests that self employment will continue to rise faster than total employment. This reflects a combination of increasing self employment proportions within industries and a projected change in industrial mix which is favourable to self employment, together with a continuation of high levels of unemployment which encourage people to try self employment in both the formal and informal economies. Compared with these factors, the likely effect of moves by employers to increase the engagement of self employed people rather than employees, particularly in certain administrative, clerical and specialist functions, will be small.

Off-site working

Turning to the area where the distinction between the own account self employed and the employee is the problematical one, there are several groups of off-site workers who have been traditionally associated with certain industries, for example, textiles and clothing. But the range of industries and occupations is now very wide, involving large numbers in services and in professional, clerical and sales occupations. The research cited in the UK study (Chapter 4) is especially illuminating in the distinctions it draws between working at home and working from home: the former comprise mainly women working part time and the latter, men working full time. It identifies the much higher than average levels of human capital embodied in home-based workers than in the labour force as a whole; the low level of multiple job-holding involved (fewer than 10 per cent of home-based jobs are secondary jobs); job tenures which are quite similar to those of employees in corresponding industries and occupations and who are engaged on comparable patterns of working hours; and considerable

confusion among home-base workers as to their legal status as employees or self employed (and consequent rights under employment protection legislation).

But on the subject of recent and future trends, even the UK research provides only a very slight guide. It suggests that there have been substantial increases, captured partly in the self employment figures, and growth has been concentrated in white-collar occupations. Whether much of this growth has been at the expense of conventional jobs carrying employee status is uncertain. The results of British case study material on large companies suggesting that new forms of quasi-self-employment are emerging have yet to be confirmed at the aggregate economy level or for smaller enterprises. For the future, however, it is likely that the numbers of manufacturing off-site workers will continue to decline. Thus the main questions are, first, will the market for home-based workers expand; second, how far will future home-based jobs be designed to take more advantage of the skills of those available for such work; and, third, how much will they be designed as part of organisational reforms incorporating new technology and involving the transfer of existing employees to a new status and location for their work. The implications for well-qualified women wishing to work part time are especially great.

To summarise, the growth of contractual forms which fall between the complete independence of self employment and complete dependence of the employee is more difficult to assess. The trend for off-site workers is positive and mainly associated with the service sector. The pressure of high unemployment will maintain and probably increase the supply of people willing to take on such work as a second best. In that case, the likelihood is that a rise in off-site working will provide mainly part-time jobs for women. Improvements in communications and information technology do open up new possibilities for extending off-site working which could well raise the skill level required. But this will take considerable time to develop.

Flexible use of employees

Turning to the formal employment relationship, flexibility can be achieved by varying hours of work and/or varying the numbers employed under different working time schedules. All contractual forms (i)-(o) in Table 11 will involve stipulations about hours of work and other

conditions of employment of a statutory nature or agreed voluntarily by the employer, normally through collective bargaining. The country studies concentrate their remarks largely on the hours of work conditions: hours per period, pattern of work, and the degrees of formal flexibility from employer and employee points of view. The general question of work sharing through reducing hours of full-time employment has been covered in Chapter 3. Although there are likely to be some further reductions in the average hours worked per year by full-time employees, trade union members who observe that unemployment is still very high may act on the 'declining returns to continuing solidarity'. If major employment increases cannot be brought about through overall reductions in working time, however, there is still the question of what approach existing regular full-time employees will take towards negotiations affecting the contracts of other employees. Workers who are seeking employment or are in low skilled jobs may be left exposed to management strategies imposing work patterns on marginal groups which aim for a flexibility from the employers' point of view only. This would apply less to regular part-time jobs than to employment involving short-term contracts and forms of 'quasi-self-employment' mentioned above: both incorporate a reduction in the employer's usual range of obligations to the employee.

High levels of unemployment are hardly conducive to worker resistance especially where the collective bargaining framework is weak. But the most striking implication of core-periphery models of the development of contractual arrangements is that the main change to be observed will be in the so-called primary segment of the labour market. The outcome for firm-specific flexibility agreements will then depend more on collective bargaining. This may or may not improve the quality of jobs on offer relative to a situation in which firms resort to greater contracting out.

The development of other forms of 'hours flexibility' is unlikely to be very important in future. Changes in the extent of casual work are not really known, given its close association with the informal economy; some labour force surveys appear to record a relative decline in casual work during the last decade in both agriculture and services where it is concentrated (Germany, p.69). The use of variable time contracts range from the 'on call' arrangements which make the worker available if needed by the employer to those 'min-max' contracts with quite high levels of minimum hours stipulated. The use of 'min-max'

contracts may have increased but the evidence is weak and does not suggest any major change (Netherlands, p.48; Germany p.69).

More regular forms of 'flexibility' include the use of shiftworking (see especially the UK study, pp. 23-8 and 72-8). However, to the extent that the growth of employment occurs in those services where part-time employment is easily arranged, this will inhibit the spread of shiftwork amongst full-time employees. Employers will find it cheaper, given both the statutory social security charges and the collectively agreed shift premia, to opt for part-time workers. This appears to be quite possible for the UK (pp. 77-8) where there has been a slowdown in the growth of shiftworking accompanied by an increase in unsocial hours of part-time work. For other countries, the position is less clear whether we consider Germany (p.72) with stable shiftwork proportions or France (p.52) with declining proportions.

The other flexibility option is to vary the numbers employed under different working time schedules which may or may not themselves be flexible. This can be done, in principle, by redeploying people from one schedule to another (for which no direct evidence is presented in the country studies) or by giving employees short-term employment contracts or engaging temporary staff through employment agencies. The choice between the last two strategies depends on the occupational groups concerned and the urgency of the demand for labour. Most agencies deal only with office staff and manual occupations and offer contracts normally of shorter duration than the short-term labour contract. They also aim to be able to respond to demand more quickly. Short-term employment contracts are similarly concentrated among the intermediate and less skilled occupations but include a significant proportion of managers, administrators and professional staff (taking, for example, 6 per cent of such contracts in France (French study, p.58)).

Whereas members of the labour force who are regularly employed part time generally do so as a matter of preference, most full-time and part-time workers on short-term employment contracts or agency contracts accept the position as a second best. The prospects for employment in these more precarious jobs seem to depend on two main factors: first, the extent to which they may substitute for the regular forms of full-time or part-time work and, second, the impact of any legislation to alter the employment rights of these groups. The French study (p.60),

for example, points out that the 1982 order, bringing the rights of agency workers more into line with employees, appears to have caused a fall in employment through agencies and a rise in short-term contract appointments - one substituting to some degree for the other.

Essentially, the devising of flexible work schedules and provision of broader-based training for multi-skilled (at various levels) and multi-functional employees are elements of internal labour market policy devoted to increasing flexibility from those already employed. The shortening of contracts and use of employment agencies are elements of external labour market policy; flexibility is achieved by recruiting in the external market at the same time as increasing the opportunities for reducing employment levels simply by not extending contracts.

Substantial recent growth of more precarious forms of contract, basically of shorter duration, is confirmed in France, Germany, Italy and the Netherlands but there is somewhat conflicting evidence for the UK (pp.63-4). Changes in industrial structure and the cyclical upturn favour its increase, as does the slower growth anticipated for the public sector where greater job security tends to be found. (Note, however, the German study p.64.) Meanwhile, the propensity of employers to experiment with those contractual forms which do shift the burden of cost and insecurity towards the employee has undoubtedly increased during the last decade, largely because of the much greater pressure on costs through international competition. But it should be emphasised how small are the current proportions of employment covered by such contracts even though inter-country comparisons are undermined by the treatment of casual and seasonal workers. On balance, for all countries, very modest projected growth is expected, beginning from a low base. Perhaps the most important aspect is the increasing use and legitimation of short-term contracts for young people as part of the normal process of entering the labour market (eg. Germany, p.64; Italy, p.72) or involving a special government scheme.

So, the spread of work done on a temporary basis and during unsocial hours at the convenience of employers has not been the main phenomenon of the last decade. This has been the decline of full-time employment in manufacturing and the rise of regular part-time employment in services. The latter often provides what might be called 'fractional' rather than 'flexible' employment because part-time employees have other commitments which cannot always be jettisoned

easily in the face of an increase in the labour requirements of their employer. Only by appropriate planning of contract dates for a group of temporary part-time employees can flexibility be assured. Moreover, the Dutch study (pp.43-4) argues against the presumption that labour costs of part-time employees are necessarily lower than those of full-time employees working at the same levels of skill and function. Theories about the emergence of a 'core-periphery' model of employment do seem to be applicable to certain large companies but their significance at the aggregate level is rather limited. Indeed, the factor most likely to affect the pattern of employment contracts over the next decade is the degree of legislative intervention and its permissive, regulatory or fiscal nature with respect to short-term employment relationships of various kinds and regular part-time employment. This applies particularly to Italy.

5. NEW AREAS OF EMPLOYMENT GROWTH

The broad pattern of potential industrial and occupational growth was reviewed in Chapter 2. Changes in job content and contractual arrangements were examined in Chapter 4. There the emphasis was on the form of employment rather than the particular part of the 'industrial-occupational-organisational' structure in which it is located. The latter is the subject of the present chapter which begins by commenting upon new areas of employment growth within the service sector.

5.1 Service Sector Employment

The projections (see Table 5) for France, Germany, the Netherlands and the UK produce quite similar growth rates for the service sector, falling between 0.5 and 0.8 per cent per annum. The composition of that growth, however, and its relationship to changes in the production sector indicate substantial differences. Wholesale and retail trade is, for example, expected to decline by 0.4 per cent per annum in Germany and rise by 1.5 per cent per annum in the Netherlands, remaining roughly constant in the UK. Communication employment in France and the UK is projected virtually unchanged compared with a rise of 1 per cent per annum in Germany. Transport and storage is expected to decline at 0.5 per cent per annum in Germany and rise at the same rate in the Netherlands (remaining stable in France and the UK). Financial institutions are expanding employment in the German and the UK scenarios and contracting in the French and Dutch assessments. The other producer services appear to be declining in the Netherlands and expanding at almost 2 per cent per annum in the UK, with more modest growth in France and Germany. Services to persons (excluding public administration, education and health) show growth of 2.7 per cent per annum for the UK projection and 1-2 per cent per annum for the other countries. Growth in public administration, education and health is within a narrower range from zero to 1 per cent per annum.

Clearly some of these variations will relate to discrepancies between classifications and time periods chosen for the projections, to the exogenous assumptions made and the projection methodologies adopted. On the face of it, though, they also indicate structural differences. In the Netherlands a modest rise in manufacturing employment is associated with a modest decline in financial and business services, whereas in the UK a decline of 1 per cent per annum in the

former accompanies a rise of almost 2 per cent per annum in the latter. France and Germany fall between these two extremes. Such results cannot be explained without much more detailed analysis of the output, productivity and employment projections concerned. But they do raise an issue mentioned first in section 2.1. There have been claims that quite marked shifts of economic function from production establishments to service sector establishments have taken place. Our knowledge of the anatomy of such changes is very poor but there are some clear indications that this has happened to some degree.

There are three principal ways of examining the phenomenon. The first involves analysing movements in input-output transactions over time; the second uses the industrial-occupational structure to detect changes in occupational employment in the production and service sectors which might indicate a transfer of functions (as reflected by occupations) between industries in these sectors; and the third method involves survey or case-study work intended to monitor directly the practices of particular companies and enquire about their future intentions or expectations.

Transfers of functions between establishments within the industrial sector also take place and these too may involve a change of company. The typical cases are sub-contracting the production of a finished or near-finished product for a third party customer and the contracting out of the production of a particular component of a much more extensive product assembled by the principal company. The extent of contracting out (including sub-contracting as an extreme form) varies cyclically as well as over the long term. During the recession at the beginning of the 1980s, there is evidence of reduced contracting out as large companies sought to minimise low capacity working and redundancies by putting less work out to other producers. Beyond this traumatic period of rationalisation, however, the long-term trend appears to be in favour of greater contracting out of production accompanied by a closer relationship between the companies concerned.

The notion of contracting out functions previously performed by the principal organisation has also affected the public sector. Some governments have sought to promote greater efficiency this way and in certain cases have also seen the reduction of direct public sector employment virtually as an end in itself. Financial restrictions on the growth of the public services have, however, provided both a stimulus to

and a restraint upon this development. The lack of growth has made trade unions particularly resistant to contracting out and managements have expressed concern about the real efficiency gains to be had in return for the industrial relations and other organisational turmoil it can create.

Ultimately the issue of contracting out and the relationship between companies and between establishments within them becomes the wider one of developments in corporate and product market structures. The focus here is more specific, however. How far has the growth of the service sector derived from goods-producing establishments contracting out service functions which they previously provided internally? How far is it due to an overall increase in the service function activity required by the economy?

The input-output data have not yet been fully utilised to explore this issue, partly because of the delays in obtaining reliable input-output tables for the 1980s. Results cited in the Italian study (p. 85) do show, however, a large increase from 1975 to 1981 in the ratio of the indirect labour input from producer services to the sum of all direct and indirect labour inputs to the production industry sub-system. More limited analysis of UK data partly confirms this.

Use of the industrial-occupational data is illustrated in the Dutch study (pp. 59-60) where the industrial and occupational effects from the conventional shift-share analysis are decomposed into production and service sector elements. It is suggested that if a negative occupational effect for the production sector co-exists with a positive effect for services, this is prima facie evidence of increased contracting out. Where the reverse occurs, this is interpreted as a case of the production sector integrating rather than contracting out the function with which the occupation is associated. Such analysis could be particularly illuminating if carried out in conjunction with input-output analysis and at a more detailed industrial and occupational level.

Some case study evidence and results of employer opinion surveys tend to suggest that the effects of service sector growth through shifting functions could have been as important as growth due to an overall increase in requirements for service functions by the production sector and the rest of the economy. Moreover, this phenomenon is expected to continue. However, the shifting of the service function in

question must eventually be complete or reach a practical upper limit. Contracting out has particularly affected support services like catering, cleaning and payroll administration; distribution activities relating to wholesale trade, transport, storage and international transactions; leasing of capital equipment and real estate; and business services, such as office support, advertising, marketing and the use of consultant advice and research. The significance of the process varies according to the period covered, the service concerned and the country but the greatest increase over the last 5-10 years appears to have been among business services. It is extremely difficult to quantify this effect even for one country and especially for comparative purposes. However, for the UK, Rajan and Pearson (1986) suggest that 'anything up to 60 per cent' of a projected growth of market service employment of 600 thousand between 1985 and 1990 (derived from a survey of employers' opinions) could be due to this shift of functions from the manufacturing sector. At the margin of change, therefore, its effect would be proportionately very great but ultimately of limited duration because of the once and for all adjustment involved.

Thus the most striking evidence has inevitably come from case studies of large manufacturing companies. These firms are under pressure to reduce employment for several reasons: reduction of capacity through scrapping of capital stock and redundancy among those previously operating it; replacement of existing capacity with new labour-saving technology requiring less labour per unit of output; and contracting out. The last of these becomes an attractive option where companies face uncertainty about future demand (especially after a period of decline); where economies of scale no longer apply to the same extent as before and so sub-contracting substantial parts of the product or contracting out the production of components becomes cost-effective; or where economies of scale/specialisation are great enough to warrant contracting out producer service functions to specialist enterprises in the service sector.

In contrast to the admittedly piecemeal evidence in favour of 'shifting functions' cited for Italy, the Netherlands and the UK, the French study (pp. 73-5) is much more sceptical about the significance of service sector growth attributed to contracting out service functions. Little comment is made on this point in the German study where the main focus in this respect is on shifting functions within enterprises and its implications for job content.

5.2 Small Enterprises

The second development involves the growth of small firms. The 'newness' and 'nature' of this phenomenon do vary considerably across countries but qualitative as well as quantitative aspects of the change justify including it under new areas of employment. The ethos and operating environment of small firms differ from those of large firms in the same industries. Their appearance in new markets where the barriers to entry are low will be fostered in a period of marked economic adjustment. Changes in technology which involve significant reductions in capital costs do not, however, seem to be especially associated with small business growth: the use of new technology in such enterprises is not very great. Nor does the entrepreneurial momentum extend much to participating in export trade. Increased sub-contracting from large to small firms is a particular stimulus but direct competition from the more flexible small company is also thought to be important. The significance for employment structure is that a disproportionate number of the jobs being created by established small firms are for females working part time and for operatives. New firms favour the creation of managerial and professional occupations, principally reflecting the entrepreneurial input required to begin with.

The growth of small firms is also partly connected with the shifting of functions from manufacturing to services. The latter enterprises tend to be smaller on average. Meanwhile, rationalisation and sub-contracting within the manufacturing sector have reduced the average size of manufacturing establishments. Section 4.2 has already considered the difficulties of interpreting the statistics on self employment and small businesses and monitoring the employment effects of the births and deaths of new enterprises and the growth of existing ones. Indeed, strong doubts are expressed in the German study (p. 79) about the adequacy of the data used by some authors to show that employment growth in small enterprises is generally greater than that in large enterprises. Similar problems face the other countries although the Italian study (pp. 30-4) shows that net job creation has occurred principally in small enterprises. Italy not only has the highest proportion of employers and self-employed in the non-agricultural labour force in Europe, apart from Greece and possibly Turkey, but also contains 80 per cent of the European Community's co-operatives. These combine relatively small-scale activity with a contractual form which differs from that of the employee or employer. Although co-operatives

are seen by some as being likely to create more jobs, other things being equal, than a conventional small enterprise, the Italian study argues (pp. 60-5) that this is not so and neither their resilience to economic cycles nor their long-term performance is superior.

Discussion of the conditions under which small enterprises, whether co-operatives or not, are most likely to grow will not be pursued here (see the Italian study, however). It is enough to conclude that there is some uncertainty over the extent of future growth in small enterprise employment, (i) beyond the period of retrenchment and rationalisation undertaken by many larger companies in the first half of the 1980s and (ii) over and above what might be expected from the continuing structural change in favour of the service sector. This uncertainty is all the greater because of the poor statistical basis for analysing the dynamics of enterprise life-cycles.

5.3 Market, Non-market and Domestic Activities

Finally, there is the possibility of change in the distribution of work between market, non-market and home-based activities. There are two principal issues of concern here. The first relates to the provision of education, health and other social welfare support. This is dominated by the public sector but also involves private non-profit-making (including so-called 'voluntary') bodies and commercial organisations. The scope for meeting consumer demand through different mixes of public/non-profit/commercial provision has become an increasing point of debate in several European countries. Where a greater degree of market-orientation is being advocated, a distinction between financing and directly providing the service needs to be made. Present arrangements already differ significantly between countries and types of service. All the country studies, however, envisage continuing public expenditure restraint: the main point at issue seems to be how far the existing pattern of finance and provision will influence where the growth of employment devoted to these services will be generated. The prospects for private sector health will depend especially on the future extent of joint public-private provision.

Health and social welfare services are likely to expand in response to demographic change resulting in larger numbers of elderly people throughout Europe. In contrast, very low fertility rates will tend to reduce the demand for schooling over the medium term. However, in

countries where the funding and provision of both services are dominated by state intervention, it can be argued that the demand for these services is being artificially repressed (UK study, p. 110). This is because the markets for private sector health and education are under-developed.

The second issue relates to the division of labour between the home and, in the main, the market rather than non-market sector of employment (though, as regards the health and social welfare services, the role of carers within the family has also come under review). Becker's (1965) analytical framework for dealing with this matter is still the obvious starting point but, more recently, sociologists like Gershuny (1983) have sought to re-cast the model. In the present context it is enough to stress just how important substitution between home and market in the provision of services could be as a factor influencing the level and structure of service sector employment and also how tentative is the evidence that major shifts are beginning to occur. It is much easier to point to past changes affecting, for example, domestic cleaning, laundry, preparation of meals, and entertainment than it is to identify new changes. The principal market opportunity for diversification of these activities should arise from community-wide access to information technology. But progress in this area is still slow. Moreover, such wider access is as likely to stimulate jobs in the market and non-markets sectors under new organisational and contractual arrangements as it is to induce greater self-provision of services.

Where there is evidence of change is the rising employment of people in the maintenance and repair of consumer durables. The increasing sophistication of these goods is such that, whilst some may facilitate the household provision of a service previously purchased from the market, they are unsuitable for household repair.

The reverse process to that of increasing self-provision of services should also be recognised. An aspect of this is the development of high value added services to consumers, not just to businesses. For example, section 4.1 has already mentioned the scope for qualitative improvements in recreation and tourist amenities and the emergence of new standards of personal service relating to them. Financial and other business-like services for consumers may well increase but the efficiency gains from new technology will tend to hold down the employment effects. Recreation and tourism are much less

likely to suffer from this aspect but their development will require the support of the public sector in creating the conditions (in relation to both human and physical capital) which will encourage movement towards the high value added end of the spectrum of provision.

6. DATA, RESEARCH AND POLICY

6.1 The Adequacy of the Existing Information System

Considerable comment has already been made upon the lack of data and the problems of interpreting what is available. Only the main points will be summarised here.

The monitoring of 'form' in all countries suffers from a basic lack of periodic measurement of both job content and contractual arrangements. This is exacerbated by the absence of regular monitoring of changes in occupational structure by industry. The position on contractual arrangements is probably more easily remedied: there would seem to be scope for making progress by developing existing European-wide surveys (see below) as well as by attempting to harmonise national data. In contrast, comparisons of job content over time and across countries do raise major technical difficulties. These would, however, benefit from the regular provision and analysis of qualification and/or educational and training experience by occupation and industry, age and gender. This would be quite feasible and there is scope for producing roughly comparable data across member countries from which the main trends could be deduced.

The monitoring of 'area' is undermined partly by presentational inadequacies which could be dealt with by alternative aggregations of the detailed industrial data and partly by the lack of occupational data. However, the disproportionate attention paid to collecting and presenting data on manufacturing as opposed to service sector employment is now glaringly obvious.

The provision of more up-to-date input-output data and employment and output data by industry and size of establishment would significantly improve the analysis of new areas of employment and their location within the industrial-occupational-organisational structure.

At the European level the Labour Force Sample Survey and the Labour Costs Survey could, in principle, be extended periodically to provide harmonised data on new forms and new areas of employment. This would involve collecting data from the perspective of the member of the labour force in the first case and from that of the employer in the second case. It would require the development of new classifications for certain aspects, notably, contractual arrangements.

6.2 Future Research

One aim of international comparisons is to find out the differences between countries in some area of policy or behaviour. These differences may provoke reflection and produce ideas for policy innovation but their extent can severely limit the relevance of the results even if they add to their general interest. Another aim is to exploit the additional experimental variation provided by the international cross-section, not so as to compare inherently different situations but to examine essentially similar processes in which certain variables differ. In the latter case, the findings of such research can be as illuminating to national governments as to international agencies. For, in effect, they provide behavioural experiments at no cost other than that of careful comparative research. Moreover, the experimental variation may sometimes be extended by recognising spatial units below that of the nation.

At present the art of European labour market comparisons is still fairly primitive. This will continue to be the case while the basic statistical tools remain crude so that even the main shapes in the labour market landscape are none too visible.

There is a considerable need for case studies of selected enterprises in an international comparative context, especially case studies which examine the financial, as well as technological and organisational context within which employment relationships and occupational structures have evolved.

The actual and potential emergence of new mixes of occupational and contractual forms and new balances struck between production or provision within the enterprise and contracting out make it important to recognise the industrial perspective and strengthen understanding about labour market - product market interactions: for example, as in the cases of quasi-self-employment or contracting out to smaller enterprises working within economic regimes which differ from those of the principal organisations.

The research proposed is intended partly to improve the acuteness of comparative observation of the shapes of national labour markets because those shapes are what we should know. It is also designed to facilitate better targeting of case-study work so that this will illuminate features of the labour market which cannot be revealed by the analysis of international or harmonised national data.

It is, of course, possible to advocate a number of lines of enquiry in the light of this study. The proposals summarised below, however, stay within the main field of new forms and new areas of employment growth as covered in previous chapters. One subject in particular has been omitted, namely, the individual and collective (i.e. industrial relations) implications of possible changes in legislation on employment protection. This refers especially to the options of either extending the legislation to cover the emerging more precarious forms of employment, on the grounds of equity, or cutting back on the range of protection currently offered to members of the labour force, on the grounds of flexibility. A second subject not pursued below is the study of relative movements in activity within the formal and informal economies and the household sector.

The three research themes proposed are 'qualitative aspects of employment growth', 'employment structure and functional re-location among industries', and 'the economics of new forms of employment and functional re-location'.

Qualitative aspects of employment growth

Further research is needed in order to clarify the effects of organisational and technological innovation upon the content of jobs and the conditions of employment attached to them. Aspects of the quality of work which are amenable to statistical monitoring and analysis are pay, non-wage financial benefits and income in kind (if any), the pattern of working hours, leave entitlement, and form of tenure. Evaluation of the working environment is more problematical, especially in relation to what might be termed the 'psychological' as opposed to physical environment: this would include, for example, the scope for career development and the extent of discrimination.

The above factors combine to produce an effect upon the individual amounting to a sense of a job's quality, leading to broad judgements about whether or not it is a 'good' or 'bad' job. Part of the psychological environment will concern the job content: the skills required and other less definable and measurable abilities and attributes. There will be 'hiring standards', minimum conditions usually stipulated in terms of qualifications and experience, but these may exceed or fall short of what is required in practice. In addition, even well-defined 'jobs' vary themselves with the person undertaking

them and with external circumstances.

Against that background, it would nonetheless be possible to produce sharper international statistical comparisons than those currently available. This would help to provide both policy debates and scientific discussions (including the design of cross-national survey and case-study research) with better points of departure. The main areas would involve comparisons of (i) the quantifiable measures of quality of jobs (pay and conditions as listed above), (ii) qualifications and jobs, and (iii) gender and occupational concentration in new forms and areas of employment. All three cases would require common groundwork on the use of national industrial and occupational classifications.

Employment structure and functional re-location

This subject is concerned with the location of economic functions within the industrial-occupational-organisational structure of the economy. The main aspects of it have already been discussed in sections 2.1, 4.2 and 5.1. As in the previous research area, it should be possible to improve the comparability of existing national data to complement those that have already been harmonised. This would similarly provide a European statistical perspective against which to consider the findings of survey or case-study work whether or not it involves international comparisons.

Research should concentrate particularly in the following areas: (i) an analysis of input-output data to identify shifts in the pattern of intermediate and final transactions which are most likely to be associated with functional re-location among industries; (ii) an examination of the employment implications of changes in size of firm, together with a study of the involvement of different size groups in the process of re-location mentioned in (i); (iii) an international comparison of the nature of self employment and small enterprise activity, with special reference to prospects for self employment in the formal economy; and (iv) a study of new forms of relationship between the principal enterprise and contractor and their implications for employment.

The economics of new forms of employment and functional re-location

Whilst one task is to monitor what is happening to the structure of

employment, another is to explain why it is happening. Part of the reason will be economic and this research area is concerned with four principal questions seen largely from the demand-side perspective: (i) what are the implications of functional re-location among industries for the measurement and international comparison of productivity and unit labour costs in the production and service sectors; (ii) how do the economics of contracting out compare between countries and what effective cut in labour costs can be obtained by doing so; (iii) how do the unit cost implications of selecting different occupational structures to match similar technological environments vary between countries; and (iv) how do the unit cost implications of opting for different contractual forms vary between countries?

The first of these topics is concerned mainly with the explanation of differences in measures of industrial performance in terms of differences in organisational structure (i.e. the relative roles played by the different sectors with respect to the principal economic functions). The second seeks to identify the measurable economic gains, from the labour cost side, in favour of contracting out and how these differ between countries. The third topic effectively examines the labour cost incentives to firms of pursuing a 'functional re-location' among current occupations within the enterprise, i.e. in terms of occupational pay relativities, training costs, and other non-wage costs. The final topic looks at the economics of contractual forms as opposed to the economics of job content. Together these two may be seen to comprise the 'economic construction of skill' within the enterprise as opposed to its social construction.

6.3 Implications for Labour Market and Educational Policies

Notwithstanding the need for further research, this section considers some of the policy implications that emerge from the present study. The nature and scale of probable employment growth is likely to leave Europe with a continuing and enormous unemployment problem. All sorts of schemes with very long pedigrees have been resurrected over the last few years. These attempt to deal with the fundamental problem of how to distribute income and employment opportunities in labour surplus economies so as to boost employment without depressing the long-run rate of growth of national income. In the present context it is more appropriate to confine the discussion to labour market policies covering employment, training and related industrial relations matters and

educational policies concentrating upon the post-compulsory provision. There is of course a considerable overlap between education and training. No reference will be made to policy on social security benefits, though these have potentially strong effects upon the labour market and vice versa.

All European governments have to some degree experimented with a variety of job creation schemes (through special work experience programmes or subsidies to employers), investments in education and training (by subsidising the individual, the employer and/or the independent supplier of the educational or training opportunity), and legislative innovations governing the employment relationship or the context in which collective bargaining takes place. These will be discussed in the light of the study findings for the five countries.

Job creation schemes

Running along the boundary of the formal labour market are several schemes designed to provide limited employment opportunities for unemployed people. Some step over into the formal sector through seeking to induce more jobs by manipulating employers' labour costs through subsidies which may be targeted on the personal characteristics of the individual, aspects of his or her labour force record, or the characteristics of the potential employer. The subsidies are for limited duration and may be offered conditional on the pay of the individual remaining within certain limits.

Other schemes involve work outside the formal economy under conditions designed to avoid encroaching upon the preserves of either the formal market or non-market sectors of employment. Projects are managed usually by local authorities but voluntary organisations with relevant expertise also participate and there is some use of private and public sector employers in the market sector. In the face of continuing large-scale unemployment, the pressure to expand these schemes will increase but at some stage in that process the management capacity of existing sponsors will be insufficient and greater call on the market sector will be required. If, at the same time, the contractual conditions of low skilled employment are also worsening, there is the prospect of creating a blanket of very unattractive work opportunities covering what was previously more clearly the boundary of the conventional labour market.

Work concerned with environmental improvements, energy conservation and the provision of social facilities may be extended to include more substantial building improvement schemes in urban centres. Existing employment schemes providing jobs in community welfare may be supplemented by creating similarly low-skilled jobs but in the public social services and health service. Advocates of such expansion point to the scope for creating more labour-intensive employment opportunities in market and non-market sectors where barriers to entry are low and major social needs are unmet. Relatively modest incremental capital costs and low skill requirements would keep down the net cost per job created.

It is, however, likely that this would eventually intensify competition amongst the weakest members of the employed labour force, largely because of the difficulty of avoiding the partial displacement of conventional employment activity by scheme-related activity. This will tend to reduce the status of the former and create a downward pressure on costs; the level of demand may increase in aggregate but so will supply together with distortions in favour of target groups. It is, of course, a feature of such schemes that their cost-effectiveness in budgetary terms depends upon minimising supervisory and other skilled jobs which complement the majority of less skilled employment generated. The problems of feasibility of much further expansion of this kind of scheme have already been highlighted. If it were possible to turn this into a major European growth area over the medium term, there would be substantial ramifications for the conditions of employment in a wide spectrum of construction-related and service sector jobs.

Investment in education and training

There are two broad conclusions with major implications for educational and training strategies. The first derives from the (admittedly very tentative) evidence on the relationships between occupation, job content and qualification. This suggests that there is a problem of over-qualification at the low skill end of the occupational spectrum (this is clear in the case of women) which co-exists with a more specific (and internationally variable) problem of under-qualification and skill shortages in certain intermediate technical occupations (technicians and multi-skilled craftsmen), the more highly qualified technological specialists, and management.

The implication is that there is a smaller shortage of unskilled and semi-skilled jobs for the less able members of the workforce than appears from the unemployment statistics. The main shortage could well be for skilled manual and non-manual jobs for those in the intermediate and higher ability ranges. Note that this is expressed in terms of ability rather than qualification. A shortage of skilled jobs for able people co-exists with a shortage of those skills which are most efficiently acquired by able people. The response to the latter shortage is to limit the growth of such jobs in the development of new occupational structures which further exacerbates the former shortage. The only way out of this vicious circle is for the state to invest heavily in adult training. Employers individually will not have sufficient incentive and voluntary collective action will not meet the scale of the problem nor approach it sufficiently from the wider socio-economic point of view.

The second broad conclusion of the study as far as it concerns education and training relates to how this function is itself organised. In particular, there is likely to be increasing pressure to externalise activities in this area, particularly those which were once seen as part of the philosophy of 'the place for training is in industry'. This reflects the needs of an increasingly fluid or flexible labour market from both employer and employee perspectives. The creation of a much more developed market for educational and training opportunities would widen the scope for providing individuals with much greater discretion in preparing themselves for the forms and areas of work of the future. It would involve an increasing separation of the provision of vocational education and training from the possession of an employment contract. But it would require the wider certification of training in order to create marketable 'commodities' recognised by both employers and workers.

Finally, if the 1980s have indeed seen the birth of a technological revolution, its rate of growth will depend on the extent to which much wider support from society at large and the education and training system in particular is forthcoming. Increases in continuing education and training for adults would play a crucial role in this process as well as reducing the short-run effective supply of labour, and hence, recorded unemployment. But the issues of access and equal opportunities arise very strongly when the stimulus for change comes from a labour market faced with skill shortages amidst an overall labour surplus. This particularly applies to the situation affecting women. Moreover,

with the large decline in European fertility rates, there is a real prospect of a coincidence of major demographic and technological changes, if not revolutions, coming on top of a persistent and large labour market disequilibrium. In some countries, where the latter has affected the so-called primary labour market to a very great extent, as in the Netherlands and the UK with high male unemployment, there is the prospect of long-run behavioural adjustment on the part of men and women. Policies on education and training could facilitate this change but shifts in the occupational and hours of work preferences of men and in the opportunities for women will need to be accompanied by changes in policy on taxation and social security.

Legislation over the employment relationship

Any movement in the statutory provisions governing pay and conditions of employment will have a wider industrial relations context to consider. At its most basic level, whatever the freedom of action given to employers, strong trade unions in a buoyant labour market should be able to defend their members' interests. In a slack labour market, the maintenance of a high level of employment protection and the collusion of unions and employers in imperfect product markets may serve to push the burden of adjustment onto those areas of the labour market which are already open to greater competition and 'flexibility'. The crucial point for the future is that the focus should shift from a concern with industrial relations legislation *per se* to an attempt to develop *labour market* legislation more cognisant of the structure of the labour market and the positions of different labour force groups. The enabling legislation introduced to promote flexibility in Italy is of an entirely different kind to the reductions in employment protection in the UK. Both concern the formal economy but the former seeks to create an environment in which a greater range of opportunities will be provided, benefiting both employers and employees, whereas the latter seeks to facilitate greater control at lower cost from the employers' point of view. Each, however, is advocated as a means of ultimately creating more jobs.

Finally, how might *legislation* encourage the high skill/job enrichment option for the introduction of new technology in its effects upon existing manual workers? There is probably little scope for direct intervention here. The trade unions would stress the importance of strengthening their hand through far greater employee involvement and

opportunities to bargain over the design of and control over occupational structures. Employers in some countries firmly resist this notion, arguing that the pressures of international competition require rapid action under management's traditional prerogative. Combining the latter strategy with a failure to attend properly to adult training (which exacerbates skill shortages) does produce, however, a built-in bias towards making choices of technology and organisation which tend to cause a depletion of jobs for intermediate skills and a filtering down through the occupational hierarchy of able people with obsolete skills. Legislation to underpin the adult training effort may not be a substitute for better consultation and negotiation between the industrial partners but it would help to slow down the shrinking of the intermediate skill base which may well be in prospect for all five countries covered in this study.

NOTES

(1) The development of models of the economy and the labour market is beset by numerous technical and data problems. See, for example, Lindley (1984) for a discussion of the strategy adopted by the Institute for Employment Research.

(2) See, however, the stock-flow demographic-labour force model, VOSTA, developed by the SEO (forthcoming).

(3) See, for example, Boyer and Petit (1981), BMFT (1979), Rathenau (1980), and Whitley and Wilson (1982,1986).

(4) See the country studies (Chapters 2 and 5) and also Commission of the European Communities (1985) for simulations under alternative policy assumptions.

(5) The classification used in Table 5 is that adopted for aggregate industry groups in the UK projections. Public utilities cover gas, electricity and water. Distribution includes wholesale and retail trade but excludes hotels and catering which are included in miscellaneous services along with other services to persons (e.g. recreational activities; laundries, dry cleaning and footwear repairs; and garages). Professional services include insurance, banking and finance; business services; and other professional and scientific services. 'Other services' covers education, health and social welfare services and public administration - this is dominated by the public services. The other titles are self-explanatory.

(6) UK special employment and training measures cover about 700 thousand people and probably reduce measured unemployment by about 500 thousand.

(7) All figures in this paragraph are derived from OECD Employment Outlook, 1986, Statistical Annex. This section uses both OECD and Eurostat data though their definitions can differ quite significantly. The availability of published aggregate annual time series of labour force participation together with corresponding unemployment figures from the OECD on a harmonised basis is especially useful because of the change in definition affecting measurement of the labour force in the European Labour Force Sample Survey from 1983 onwards.

(8) To some degree, by exploiting the most detailed level of the occupational and industrial classification it may be possible to produce a form of 'quasi-function' by occupation tabulation and a corresponding one for 'quasi-function' by qualification. This is because at that level some occupations can be attributed roughly to functions (eg. maintenance rather than production) even though at the more aggregate level they are combined in such a way as to cut across functions. It would be necessary to re-aggregate to preserve functional integrity; the feasibility of this depends especially upon the extent to which function is distinguished in classifying occupations at the most detailed level.

(9) Disaggregated information for the functional category 'other' and for service trades are shown in the German study (p.36). The definitions of functions in the survey do, however, make the analysis of these less straightforward than is the case for the production and related activities.

(10) The results for the repairs function actually suggest a decline in the employment share of electrical trades but it is not clear which other manufacturing trades compensate for this loss (see Table 11).

(11) See especially the Dutch study (pp.32-34) for a discussion of these issues.

(12) The terminology used here differs from that of the UK study (pp. 51-58).

(13) See OECD (1986, especially Tables 17 and 18) for further evidence on developments in self employment. The figures quoted are based on this source except for Italy, where more recent data are given in the Italian study (p. 6).

(14) See OECD (1986, pp. 150-53) but note that the econometric specifications are extremely simple and do not allow for the effect of widening labour market imbalance as opposed to fluctuations about the trend in GDP.

(15) The data in Table 11 exclude family workers who are usually associated with the self employed and arise particularly in agriculture. In the non-agricultural sector they are much less important amounting to 1-2 per cent in France and Germany and 4-5 per cent in Italy and the Netherlands (data for the UK are not available). Moreover, they have continued to decline as a proportion of civilian employment in the non-agricultural sector even when the self-employment proportion began to stabilise or rise. The exception is Italy (of the four mentioned here) but the rise is very slight compared with the doubling of the self employment proportion. (See OECD (1986), Table 14.)

Table A1 Employment Growth in More Detail : Males, 1975-85[a]

NACE	Division or Class	France	Germany	Italy	Nether-lands	UK
0.	Agriculture, forestry, fishing	-	(+)		--	-
11/12	Solid fuels, coke ovens	(----)	(o/-)		(----)	---
13/14/15	Petroleum, oil, nuclear fuels	(++)	(o/-)		(o/+)	(++++)
16/17	Electricity, gas, water	(+)	(o/+)		o/+	o/-
21/22	Extraction/prep. of metals	(----)	---		(---)	(----)
23/24	Mineral extraction	--	--		(---)	(--)
25/26	Chemicals	-	o/-		-	---
31	Metal manufacture	-	-		----	----
32	Mechanical engineering	--	-		--	-
34	Electrical engineering	o/-	-		o/-	o/-
35	Motor vehicle manufacture	o/-	+		(o/-)	----
36	Other transport manufacture	-	(-)		----	----
33+37	Office, DP, instrument eng.	(o/+)	(o/-)		(----)	(-)
41/42	Food, drink, tobacco industry	o/-	o/-		-	-
43	Textile industry	(----)	(----)		(----)	(----)
44/45	Leather, footwear, clothing	(---)	(---)		(----)	(----)
46	Timber and furniture	(-)	o/-		(----)	(--)
47	Paper, printing, publishing	-	o/-		-	-
48/49	Other manufacturing	o/-	o/+		++	(--)
5.	Building and civil eng.	--	o/-		-	---
61/62/63	Wholesale/scrap/agents	o/+	o/-		-	+
64/65	Retail distribution	+	o/-		++	o/-
66	Hotels and catering	++	(++)		+++	+
67	Repair of goods and vehicles	(++)	+		---	(o/+)
71	Railways	-	--		(o/+)	(---)
72	Other land transport	+	(o/+)		o/-	--
73-76	Other transport	(+)	(-)		o/+	(----)
77	Travel agents etc.	(o/+)	(o/+)		(+++)	(---)
79	Communication	+	o/+		+++	o/-
81	Banking and finance	+	+		o/-	+
82	Insurance	(o/+)	(o/+)		(++++)	(++)
83	Business services	++	o/+		+++	++
84/85	Renting, leasing, letting	(o/+)	(o/+)		(++++)	(o/-)
9.	Other services	+	+		+	o/-

Source: Employment and Unemployment 1986. Eurostat. Tables III/3 and III/6 and unpublished Eurostat material.

Note: (a) The base and final years for the growth rates differ between countries and industries because of lack of consistent data (employees only) for the full period.

Key:

(i)

	% p.a.		% p.a.
o/+	0 to 0.9	o/-	0 to -0.9
+	1.0 to 1.9	-	-1.0 to -1.9
++	2.0 to 2.9	--	-2.0 to -2.9
+++	3.0 to 3.9	---	-3.0 to -3.9
++++	4.0 and over	----	-4.0 and over

(ii) Parentheses denote employment in the final year amounting to less than 1 per cent of the total number of employees in the economy.

Table A2 Employment Growth in More Detail : Females, 1975-85[a]

NACE	Division or Class	France	Germany	Italy	Nether-lands	UK
0.	Agriculture, forestry, fishing	(o/-)	(++)		(++++)	(o/-)
11/12	Solid fuels, coke ovens	(++)	(+)		(o/-)	(o/-)
13/14/15	Petroleum, oil, nuclear fuels	(++++)	(-)		(++)	(++++)
16/17	Electricity, gas, water	(++)	(+)		(++)	(o/-)
21/22	Extraction/prep. of metals	(--)	(----)		(---)	(----)
23/24	Mineral extraction	(-)	(--)		(--)	(----)
25/26	Chemicals	(o/-)	(-)		(-)	(---)
31	Metal manufacture	(-)	(--)		(---)	(----)
32	Mechanical engineering	(-)	(--)		(+)	(-)
34	Electrical engineering	(-)	--		(--)	---
35	Motor vehicle manufacture	(o/-)	(o/+)		(--)	(----)
36	Other transport manufacture	(o/+)	(o/-)		(o/-)	(----)
33+37	Office, DP, instrument eng.	(-)	(-)		(--)	(----)
41/42	Food, drink, tobacco industry	(o/+)	o/+		(-)	-
43	Textile industry	(----)	(----)		(----)	(----)
44/45	Leather, footwear, clothing	---	---		(----)	----
46	Timber and furniture	(-)	(-)		(----)	(-)
47	Paper, printing, publishing	(-)	(o/-)		(o/+)	(-)
48/49	Other manufacturing	(-)	(-)		(++)	(---)
5.	Building and civil eng.	(+)	(+)		(++++)	(++)
61/62/63	Wholesale/scrap/agents	+	o/-		+	o/+
64/65	Retail distribution	++	o/+		++++	o/-
66	Hotels and catering	++	++		(++++)	++
67	Repair of goods and vehicles	(++++)	(+++)		(o/-)	(+++)
71	Railways	(++)	(----)		(++++)	(---)
72	Other land transport	(+++)	(+++)		(++)	(--)
73-76	Other transport	(++++)	(+)		(++)	(----)
77	Travel agents etc.	(++)	(++)		(++++)	(+)
79	Communication	++++	(+)		(++++)	(+)
81	Banking and finance	++	+		o/+	+++
82	Insurance	(++)	(o/+)		(++++)	(o/+)
83	Business services	+++	o/+		++++	+++
84/85	Renting, leasing, letting	(+++)	(++++)		(++++)	(+)
9.	Other services	++	++		++++	+

Source: Employment and Unemployment 1986. Eurostat. Tables III/3 and III/6 and unpublished Eurostat material.

Note: (a) The base and final years for the growth rates differ between countries and industries because of lack of consistent data (employees only) for the full period.

Key:

(i)

	% p.a.		% p.a.
o/+	0 to 0.9	o/-	0 to -0.9
+	1.0 to 1.9	-	-1.0 to -1.9
++	2.0 to 2.9	--	-2.0 to -2.9
+++	3.0 to 3.9	---	-3.0 to -3.9
++++	4.0 and over	----	-4.0 and over

(ii) Parentheses denote employment in the final year amounting to less than 1 per cent of the total number of employees in the economy.

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A comparative study

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