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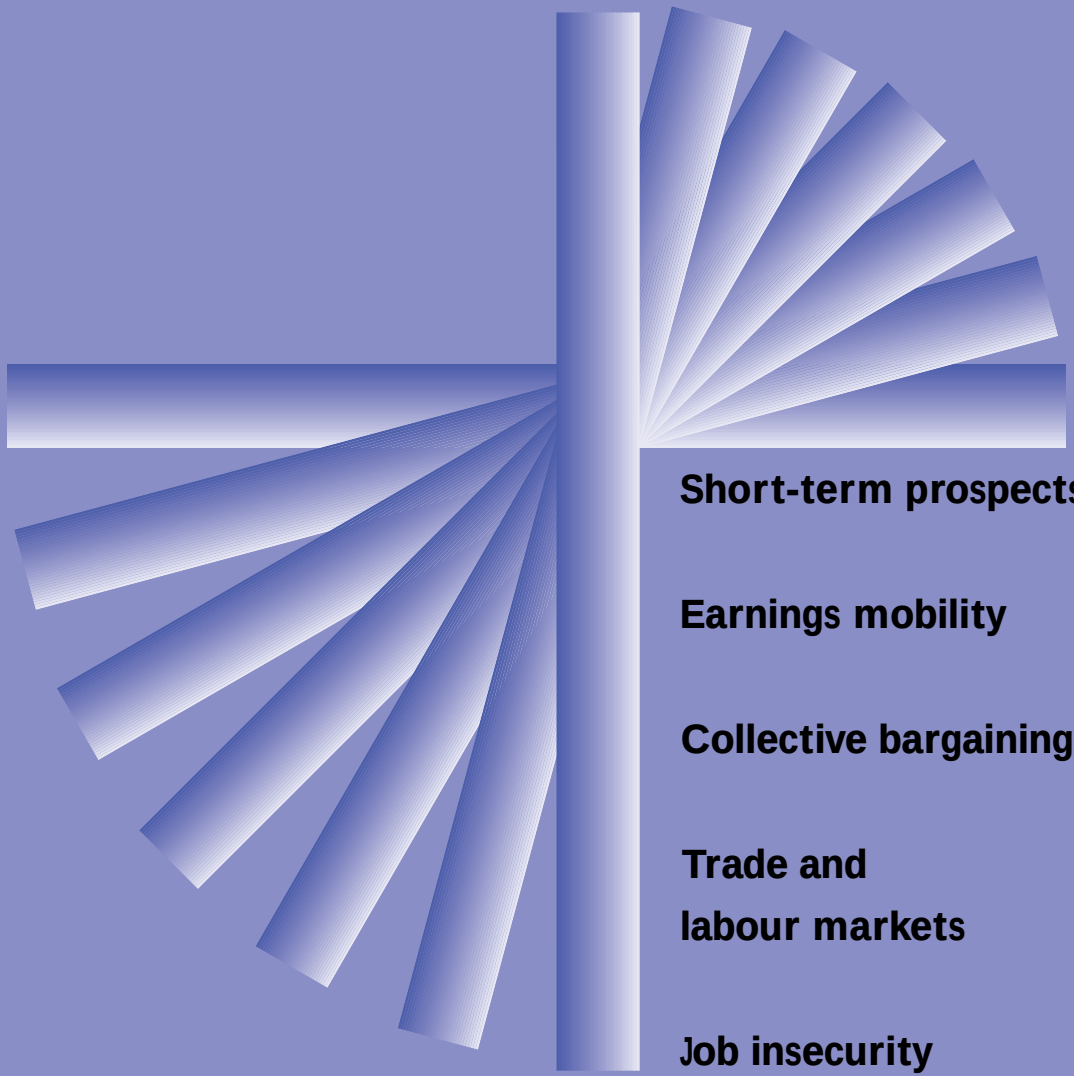

Short-term prospects

Earnings mobility

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Trade and labour markets

Job insecurity

Employment Outlook

July 1997

ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT

The OECD Employment Outlook

provides an annual assessment of labour market developments and prospects in Member countries. Each issue contains an overall analysis of the latest market trends and short-term forecasts, and examines key labour market developments. Reference statistics are included.

The **OECD Employment Outlook** *is the joint work of members of the Directorate for Education, Employment, Labour and Social Affairs, and is published on the responsibility of the Secretary-General. The assessments of countries' labour market prospects do not necessarily correspond to those of the national authorities concerned.*

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- *to achieve the highest sustainable economic growth and employment and a rising standard of living in Member countries while maintaining financial stability, and thus to contribute to the development of the world economy;*
- *to contribute to sound economic expansion in Member as well as non-member countries in the process of economic development; and*
- *to contribute to the expansion of world trade on a multilateral, non-discriminatory basis in accordance with international obligations.*

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PERSPECTIVES DE L'EMPLOI

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Low-wage jobs: stepping stones to a better future or traps?

Some countries are managing to create jobs and cut unemployment, using strategies commended by the OECD's Jobs Study...

Three years after the OECD published its major work on the *Jobs Study*, there is good news and bad news on the employment and unemployment front. The good news is that some countries – Ireland, the Netherlands, New Zealand and the United Kingdom – have managed to reduce structural unemployment significantly, having implemented comprehensive reforms over the past decade in line with the *Jobs Strategy* and, in most cases, this has gone hand-in-hand with good aggregate employment performance. Other countries, such as Japan, Norway and the United States, have had low aggregate unemployment and relatively high rates of labour force participation.

... but elsewhere, structural unemployment is still rising, hitting adult men and the unskilled hardest.

The bad news is that structural unemployment has continued to drift upward and employment growth has been very weak in many other countries, especially in continental Europe. Today, there are about 36 million persons unemployed in the OECD area, an unemployment rate of 7½ per cent. Through 1997 and 1998, the unemployment rate is expected to drop slightly to around 7 per cent, or 35 million persons unemployed. Many more would like a job, but are not actively searching for one because they have become discouraged. Low-skilled and less-experienced workers have been particularly hit by these adverse labour market developments. Their employment rates have dropped in most countries, absolutely and relatively, particularly among adult men, though less so among adult women (Chapter 4).

The lowest earners have become absolutely or relatively worse off in some countries...

In terms of medium-term trends in earnings and incomes, there have been real declines at the bottom of the earnings distribution, in some countries such as New Zealand and the United States. In others, *e.g.* Australia, Ireland and the United Kingdom, while real earnings at the bottom have not declined, the gap between the top earners and those at the bottom has often widened considerably. In some cases, this has gone hand-in-hand with increases in the dispersion of family and household incomes.

... and concerns that its recommendations will lead to growing inequality and poverty have sometimes deterred full implementation of the Jobs Strategy...

The OECD *Jobs Study* underscored the necessity to increase the capacity of OECD societies to adapt rapidly to structural change in order to reduce high and persistent unemployment through sustained employment growth and increases in real living standards. The *Jobs Study* set out a wide-ranging and balanced set of recommendations for achieving these goals, including, wherever possible, assisting workers to find jobs where they can be highly productive and earn wages that are sufficient to keep them and their families free from poverty. Experience shows that the *Jobs Strategy* can work if the recommendations are implemented in a coherent and consistent way, coupled with the political will to do so. However, many countries have not yet done so. There are many reasons for this hesitation, but a major one is concern that implementation of all the recommendations, especially those calling for greater labour and product market flexibility, will threaten social cohesion by leading to growing earnings inequality and poverty.

... so this editorial looks at ways to help workers with low pay and those with low skills.

This editorial focuses on the potential policy responses which seek to resolve the labour market difficulties faced by low-paid, less-educated and less-skilled workers. Many workers are trapped in a cycle of low pay and no pay, with potential negative consequences for poverty and their productive capacity, as well as that of the economy as a whole. It is for this reason that a central topic for debate at the forthcoming meeting of OECD Labour Ministers in October 1997 will be policies to assist low-paid workers and less-skilled job seekers.

The low-paid are less numerous in some countries than in others, but everywhere are concentrated in the same groups...

The magnitude and characteristics of the problems posed by high and persistent unemployment, inequality and low pay, and lack of job opportunities and skills vary across countries. For example, the incidence of low-paid jobs, defined as jobs with full-time earnings of less than two-thirds of median earnings, ranges from less than one in ten full-time workers in Sweden and Finland to as many as one in four in the United States. Women, youth and workers with few educational qualifications are more likely to be in low-paying jobs compared with men and older workers in all countries.

... and although low pay can be a step to a better-paying job, it can also recur, and alternate with no pay.

However, this static view gives an incomplete picture of low-wage jobs. Such jobs are often stepping stones into better ones. The detailed mobility analysis in Chapter 2, though limited to just six countries, provides evidence of considerable upward mobility in the earnings distribution, with many workers moving out of low-wage jobs. This is encouraging, but this optimism must be tempered by the fact that "escaping" from a low-paid job can be a temporary phenomenon. For example, among workers who were continuously employed over the period 1986-1991, those in low-paid jobs at the beginning of the period spent, on average, four years in them in the United Kingdom and the United States, and two to three years in Denmark, France, Germany and Italy. There is also evidence of a "carousel effect" in all countries for which data are available: many workers seem to move back and forth from low pay to no pay.

Low pay needs to be tackled through lifelong learning, with employer involvement, continuously upgrading skills and making workers more adaptable...

Although a low-paid job is not synonymous with a low-skilled job, the cornerstone of an overall strategy to tackle many of the problems associated with low pay is, in fact, a broad-based one of lifelong learning, continuously upgrading the skills and competencies of populations and work forces. Preparation for employment can no longer be a once-and-for-all process that stops with initial education and training, vital as that is. In all countries, some 80 per cent of the workforce ten years from now is already working and many of them have low levels of educational attainment. If OECD societies are to generate more higher productivity, higher skill and higher wage jobs, they must develop effective strategies for addressing the barriers that prevent firms and workers from investing in and utilising skills and competencies. Lifelong learning, with on-the-job learning building on sound initial education that creates both the motivation and the capacity to adapt and upgrade skills, can provide firms with enhanced flexibility and increase workers' capacities to benefit from new forms of work organisation and technology.

... with particular help for less-qualified workers, who often cannot make the necessary investment in learning...

In a lifelong learning strategy, it is especially critical to assist less-qualified workers in upgrading their skills and getting them into jobs that utilise those skills. Many receive very little employment-related training on their jobs. Those who need these opportunities most are often inhibited from individually undertaking the necessary investments because of the cost and the risk that it may not pay-off in terms of getting them into good, well-paid jobs. This can also serve to lock them into low-wage jobs and, for the economy as a whole, surely results in some loss of potential output. The potential size of this loss is currently impossible to assess since there are no reliable estimates of the social rate of return to investment in further education and training.

... an investment rarely optimised by market forces alone; training levies have had mixed success; better ways of recognising acquired skills could improve incentives to invest more in learning...

There are many open questions as to the best way to implement strategies which support lifelong learning. It is usually accepted that market forces alone are unlikely to overcome the considerable barriers facing firms and workers considering investment in skills, ranging from the capital-market constraints facing individuals to the problem of firms free-riding on the training undertaken by other firms by poaching trained workers. While proper incentives to overcome these market failures need to be put in place, the best way to do this is still unclear. Options such as training levies and individual training vouchers have been explored, but with mixed success. One avenue that would deserve further exploration is the establishment of national certification/recognition arrangements as one way of improving the functioning of the labour market. The development of systems for the assessment and recognition of acquired skills would assist in getting a better balance towards broader and portable skills, especially for adult learning. Indeed, some countries are making efforts at developing national qualifications and assessment standards, often in the context of consultations with the business community and worker organisations, each having an interest in the definition and regulation of standards. Certification systems can play a positive role in improving the market for adult training if the criteria are generally agreed upon, properly monitored and regulated. Such systems must necessarily be flexible enough to respond quickly to rapid changes in technology.

... but education and training are not enough: the low-paid need to be helped in other ways...

Effective reforms in education and training policies are central to improving the situation of many of the low-paid and the less qualified, and many countries have stepped-up their efforts at reforms. However, such reforms may not work for everyone and it is unrealistic to think that increasing the supply of skills will necessarily lead, at least in the short- to medium-term, to a proportionate increase in high-productivity jobs. Moreover, for those individuals for whom further education and training is effective, it takes time to bear fruit. Hence, other policy measures are essential to assist the low paid.

... for example, by topping up their income through state transfers...

It is argued that concern about the poverty consequences of low-paid jobs can be dealt with by a judiciously designed system of employment-conditional benefits. These income-tested benefits top up the income of those in low-paid jobs, thereby giving them strong incentives to seek work; the benefits are phased-out as earnings rise. Such schemes are available in various guises in six OECD countries: Canada, Ireland, Italy, New Zealand, the United Kingdom and the United States; they have recently been extended in Ireland, the United Kingdom and the United States. Currently, outlays for them are running at 0.5 per cent of GDP in the United Kingdom and 0.2 per cent in the United States. For the United States, it has been estimated that the Earned Income Tax Credit provides benefits to roughly six million working taxpayers with incomes below the official poverty line and lifts the income of about one million of them above that line.

... although such employment-conditional benefits are not a panacea...

While employment-conditional benefits have many attractive features, they are not a panacea for low-paying jobs – for reasons discussed in the 1996 *Employment Outlook*. They are likely to be most successful in countries where the existing earnings distribution is relatively unequal, where benefits are kept low relative to average earnings and are tightly targeted on families with children.

... and can be expensive, or create poverty traps, though individualised targeting looks promising...

Employment-conditional benefit schemes designed to top-up low pay from work may prove very costly to the public purse, exacerbating already difficult fiscal positions in most countries, particularly if they take the form of a *general* payment to those with low earnings and earnings inequality continues to widen at the bottom of the distribution. This is the main reason for means-testing and targeting such benefits, although the United Kingdom is currently experi-

menting to find out the effects of widening such subsidies to all the low paid. But means-testing and targeting inevitably lead to poverty traps for some groups where there is little or no gain in income from working more. Recent reforms in Australia may provide a partial answer to this problem. Australia has moved from a family resource-based means-tested system to one more conditional on individual circumstances. While the evidence is not definitive yet, this "individualisation" of the benefit system appears to have had some success in ensuring that, when either partner in an unemployed-couple household takes a part-time or low-paid full-time job, the family income is increased.

... moreover, the impact of such benefits in raising family income can be blunted if they cause employers to lower pay further...

The existence of employment-conditional benefits, if they succeed in getting more low-wage workers into jobs, can put downward pressure on wages for the low-paid. To the extent this happens, the benefits can cease to meet their income-support goal, even as public spending increases. Although the fall in wages could encourage employers to hire more low-wage workers, such an effect could also tend to reduce work incentives for those receiving the benefit. Overall, low income will not be reduced to the extent that the first-round effect of the benefit would suggest.

... so an alternative is wage floors balanced by tax breaks for employers...

These concerns have lead some countries, particularly in Continental Europe, to favour a policy of wage floors (set either by legislation or collective bargaining) combined with a policy of payroll tax reductions or exonerations targeted on the bottom of the earnings distribution. The goal of these schemes is to guarantee some minimum income from work while ensuring that the cost of labour does not hinder firms taking on unskilled workers. Such a policy stance has been adopted in Belgium, France and the Netherlands.

... although this option too could be fiscally expensive, subsidise employers unnecessarily or cause them to have fewer well-paid jobs...

But this policy option is not a panacea either. A wage floor set at too high a level will damage the job prospects of low-paid and inexperienced workers. In addition, reductions or exemptions for all jobs paying below some earnings threshold could also be costly to the public purse in terms of foregone revenues. Whether net employment will increase is also unclear because it is well known that such schemes could produce large "deadweight" losses (*i.e.* many hires of low-wage workers would have occurred in the absence of the scheme) and substitution effects (*i.e.* firms may substitute lower paying jobs for higher paying ones).

... but much more needs to be known about the impact of both these options on jobs and poverty, including in the long term.

Unfortunately, evidence on the effectiveness of these two approaches in ameliorating low pay and raising work incentives is scant. There is, therefore, an urgent need to increase our knowledge on the effectiveness of such policies on at least two dimensions: *i)* their impact on individual employment prospects and aggregate employment; and *ii)* their impact on poverty. In addition, these issues must also be evaluated within a *long-term* perspective. As shown in Chapters 2 and 5, obtaining a job is just part of the battle. Remaining in employment with good prospects of climbing up the earnings ladder proves quite difficult for many low-paid workers, not least women, mature adults and the less-skilled.

However, the fate of the low-paid ultimately depends on increasing their productivity, requiring a broad-based and co-ordinated public/private effort to raise skills.

The long-run well-being of workers on the bottom rung of the earnings distribution depends heavily on increasing their productivity. Debate on how best to achieve this objective must be seen within the broader issues of policies and institutions to increase the incentives for the production and the effective use of productivity-enhancing skills by both businesses and workers. While governments have direct responsibility for ensuring that individuals have the foundation skills for lifelong learning, comprehensive strategies to foster high-productivity and high-wage paths will only come to fruition through the support of governments, with greatly expanded co-ordination across Ministries, the private sector and, where appropriate, concertation among the social partners.

CHAPTER 1

Recent labour market developments and prospects

A. INTRODUCTION

Growth in the OECD area is projected to average nearly 3 per cent in 1997 and 1998, but substantial differences across countries in the underlying strength of the expansion are still evident. In some countries, such as the United States and the United Kingdom, growth is robust, although it should slow somewhat. In others such as Japan and the major continental European countries, the pace is more hesitant. The inflation outlook remains good nearly everywhere and there are few signs of any significant resurgence of inflationary pressures. The prospects for unemployment are less positive and the number of unemployed in the OECD area is projected to fall by only one million from its 1996 average of over 36 million. A more detailed overview of these recent developments and prospects is provided in Section B.

Recent wage developments are explored in more depth in Section C. In particular, this section examines real wage growth for different groups of workers. In many countries, wage growth appears to have been weakest for younger workers relative to older workers and women have generally received greater increases than men. Nevertheless, even in those countries where there has been a sustained recovery in activity and falling unemployment over the past five years, the growth in earnings for most groups of workers remains muted. The reasons for a slowdown in real earnings growth in some countries are not well-understood, but they could include recent policy initiatives to enhance wage and price flexibility or possibly greater feelings of job insecurity inducing workers to moderate their real wage claims (see Chapter 5). Therefore, the relationship between aggregate wage growth and unemployment, and its stability over time, is also examined in Section C. The final section summarises the main findings of the chapter.

B. RECENT DEVELOPMENTS AND PROSPECTS

1. Economic activity

Output grew somewhat faster in the OECD area during 1996 than was projected in the 1996 *Employment Outlook* (Table 1.1). Real GDP grew by 2.6 per cent compared with 2.2 per cent in the previous year. Japan and the United States provided the main impetus with growth rates of 3.6 and 2.4 per cent, respectively, in 1996, while growth in the European Union fell almost 1 percentage point to 1.6 per cent. Elsewhere, economic activity was generally buoyant, with particularly strong growth registered in Australia, the Czech Republic, Iceland, Ireland, Korea, Mexico (after a large fall in 1995), Norway, Poland and Turkey.

Financial market developments have generally operated to restrain demand and activity in countries which appear to be close to capacity limits, notably the United Kingdom and the United States. On the other hand, they have been supportive of activity in most continental European countries and Japan, where considerable slack remains and the risk of a resurgence of inflation is small. In particular, the strengthening of sterling and the dollar against virtually all other currencies has contributed to an overall exchange rate pattern that is working to equilibrate activity across the major OECD regions. At the same time, the impact of widespread fiscal consolidation that has been operating as a restraining force on activity throughout most of continental Europe should peak during 1997 before easing somewhat in 1998. In this environment, growth in the OECD area is projected to average nearly 3 per cent during 1997 and 1998, with most countries enjoying growth above potential rates. This overall picture reflects many expansions that are now strong and broadly based, including in Canada, the United Kingdom and the United States, although they may slow somewhat during the next eighteen months. However, it also reflects less buoyant outlooks in France, Germany, Italy, Japan and several smaller European countries.

2. Employment and unemployment

Part of the faster growth in output in 1996 was reflected in higher rates of productivity growth almost everywhere but particularly in Australia, Iceland, Japan, Mexico and the United States. As a result, employment grew at just 1 per cent for the OECD area as a whole (Table 1.2). Solid employment gains continued to be recorded in the United

Table 1.1. **Growth of real GDP in OECD countries**[a]

Annual percentage change

	Share in total OECD GDP 1991	Average 1984-1994	1995	1996	Projections	
					1997	1998
North America	**41.4**	**2.5**	**1.5**	**2.5**	**3.7**	**2.3**
Canada	3.1	2.4	2.3	1.5	3.5	3.3
Mexico	2.9	2.5	–6.2	5.1	5.4	4.7
United States	35.4	2.5	2.0	2.4	3.6	2.0
East Asia	**16.5**	**4.1**	**2.5**	**4.1**	**2.7**	**3.4**
Japan	14.2	3.3	1.4	3.6	2.3	2.9
Korea	2.4	8.5	8.9	7.1	5.3	6.5
Central and Western Europe[b]	**26.1**	**2.3**	**2.4**	**1.8**	**2.6**	**2.8**
Austria	0.8	2.6	1.8	1.1	1.5	2.4
Belgium	1.0	2.1	1.9	1.4	2.2	2.6
Czech Republic	0.5	..	4.8	4.4	2.6	2.0
France	6.2	2.1	2.1	1.5	2.5	2.8
Germany[c]	8.1	2.8	1.9	1.4	2.2	2.8
Hungary	0.4	..	1.5	0.8	2.4	3.5
Ireland	0.3	4.2	10.3	7.3	6.7	7.0
Luxembourg	0.1	5.9	3.2	3.9	4.1	4.0
Netherlands	1.5	2.7	2.1	2.7	3.0	3.2
Poland	1.0	..	7.0	6.0	5.0	4.9
Switzerland	0.9	1.7	0.1	–0.7	0.8	1.8
United Kingdom	5.4	2.3	2.5	2.1	3.0	2.7
Southern Europe	**11.6**	**2.6**	**3.4**	**2.2**	**2.3**	**2.7**
Greece	0.6	1.6	2.0	2.6	3.0	3.1
Italy	5.8	2.0	2.9	0.7	1.0	1.8
Portugal	0.6	3.3	1.9	3.0	3.3	3.4
Spain	3.0	2.9	2.8	2.2	2.8	3.0
Turkey	1.6	4.1	7.0	7.2	5.2	4.7
Nordic countries	**2.4**	**1.7**	**3.5**	**2.6**	**3.0**	**2.9**
Denmark	0.5	1.9	2.7	2.5	2.5	2.9
Finland	0.5	1.2	4.5	3.3	4.6	3.6
Iceland	0.0	2.1	1.2	5.7	4.5	3.3
Norway	0.5	2.8	3.3	4.8	3.8	3.4
Sweden	0.9	1.2	3.6	1.1	2.0	2.3
Oceania	**1.9**	**2.8**	**3.6**	**3.7**	**3.4**	**3.5**
Australia	1.7	3.1	3.7	4.0	3.5	3.5
New Zealand	0.3	1.4	2.7	2.1	2.8	3.2
OECD Europe[b]	**40.1**	**2.3**	**2.7**	**2.0**	**2.5**	**2.8**
EU	**35.2**	**2.4**	**2.4**	**1.6**	**2.3**	**2.7**
Total OECD[b]	**100.0**	**2.7**	**2.2**	**2.6**	**3.0**	**2.7**

.. Data not available.
a) Aggregates are computed on the basis of 1991 GDP weights expressed in 1991 purchasing power parities.
b) Averages for 1984-1994 exclude the Czech Republic, Hungary and Poland.
c) The average growth rate has been calculated by chaining on data for the whole of Germany to the corresponding data for western Germany prior to 1992.
Source: *OECD Economic Outlook,* No. 61, June 1997.

States while Japan experienced a small pick-up in job growth. However, employment was virtually stable in the European Union, with gains in Spain, the United Kingdom and several of the smaller countries being offset by losses in Austria, Germany and Sweden; France recorded broadly stable employment in 1996. Part-time employment continued to grow more rapidly than full-time employment in the majority of those countries reporting net overall employment gains (Table E of the Statistical Annex). The United Kingdom and the United States were major exceptions to this trend, although there were still over one million fewer full-time jobs in the United Kingdom in 1996 than in 1990. A more widespread improvement in employment prospects is expected for 1997, with job growth for the OECD area projected to rise to 1.3 per cent before falling back slightly to 1.1 per cent in 1998.

As a result of weaker employment growth and slightly faster growth in the labour force, there was only a negligible decline in unemployment for the OECD area as a whole in 1996 and the number of

Table 1.2. **Employment and labour force growth in OECD countries**

Annual percentage change

	Employment						Labour force					
	Level 1995 (000s)	Average 1984-1994	1995	1996	Projections 1997	Projections 1998	Level 1995 (000s)	Average 1984-1994	1995	1996	Projections 1997	Projections 1998
North America[a]	**153 159**	**1.6**	**1.5**	**1.8**	**2.3**	**1.3**	**162 982**	**1.4**	**1.3**	**1.5**	**1.9**	**1.3**
Canada	13 508	1.5	1.6	1.3	1.8	2.0	14 929	1.4	0.7	1.5	1.5	1.7
Mexico[b]	14 752	..	1.9	5.0	3.0	2.4	15 749	..	4.7	4.1	1.9	2.1
United States	124 899	1.6	1.5	1.4	2.3	1.0	132 304	1.4	1.0	1.2	1.9	1.1
East Asia	**84 955**	**1.6**	**0.7**	**0.9**	**1.2**	**1.1**	**87 462**	**1.6**	**0.8**	**1.1**	**1.3**	**1.0**
Japan	64 577	1.1	0.1	0.5	1.2	1.0	66 665	1.1	0.3	0.7	1.1	0.9
Korea	20 378	3.2	2.7	2.3	1.2	1.2	20 797	3.1	2.3	2.3	2.0	1.4
Central and Western Europe[c]	**125 043**	**0.6**	**0.5**	**0.0**	**0.4**	**0.8**	**138 304**	**0.6**	**–0.2**	**0.1**	**0.2**	**0.4**
Austria	3 439	0.8	–0.4	–0.6	–0.2	0.5	3 655	1.0	–0.3	–0.3	0.0	0.3
Belgium	3 689	0.4	0.3	0.1	0.5	0.8	4 244	0.3	0.3	–0.2	0.3	0.4
Czech Republic	5 090	..	0.8	0.4	–0.1	–0.3	5 254	..	0.8	0.8	0.3	0.5
France	22 444	0.2	0.9	–0.2	0.2	1.0	25 374	0.5	0.1	0.8	0.5	0.5
Germany[d]	34 868	0.6	–0.3	–1.2	–0.9	0.4	38 480	0.7	–0.5	–0.1	–0.1	0.2
Hungary	3 623	..	–1.9	–0.8	–0.1	0.5	4 039	..	–2.5	–0.5	–0.2	0.4
Ireland	1 268	0.8	4.4	4.0	3.3	3.3	1 443	0.6	1.3	3.0	2.8	2.8
Luxembourg	167	0.9	0.7	0.8	1.0	0.9	172	1.0	1.0	1.2	0.9	0.9
Netherlands	6 063	1.7	2.4	1.9	2.0	2.1	6 527	1.4	1.9	1.4	1.5	1.5
Poland	14 790	..	0.9	0.8	1.3	1.5	17 068	..	–0.4	–0.2	0.5	0.8
Switzerland	3 783	1.4	0.2	0.2	0.0	0.4	3 937	1.7	–0.3	0.5	0.7	0.0
United Kingdom	25 820	0.5	0.8	0.5	1.3	0.7	28 111	0.3	–0.3	–0.3	–0.1	0.2
Southern Europe	**60 127**	**0.7**	**1.0**	**1.6**	**1.1**	**1.3**	**68 837**	**0.9**	**0.8**	**1.2**	**0.9**	**0.9**
Greece	3 824	0.6	0.9	1.4	1.3	1.3	4 249	0.8	1.3	1.8	1.3	1.4
Italy	20 009	–0.2	–0.6	0.4	0.0	0.2	22 733	0.1	0.2	0.5	0.1	0.0
Portugal	4 195	0.3	–0.6	0.5	0.5	0.5	4 520	0.2	–0.2	0.6	0.3	0.3
Spain	11 944	0.7	1.8	1.5	1.5	1.9	15 546	1.2	0.5	0.9	0.7	0.7
Turkey	20 157	1.8	2.5	3.1	1.9	2.1	21 789	1.8	1.8	2.0	2.0	2.0
Nordic countries	**10 779**	**–0.6**	**1.8**	**0.8**	**0.9**	**1.1**	**11 956**	**0.0**	**0.8**	**0.2**	**0.3**	**0.4**
Denmark	2 521	0.0	1.6	1.0	1.3	1.5	2 809	0.3	–0.5	–0.6	0.5	0.7
Finland	2 068	–1.7	2.2	1.4	2.0	1.6	2 497	–0.3	0.7	0.2	0.2	0.3
Iceland	125	0.5	1.5	2.4	1.9	1.5	131	0.9	1.7	1.7	1.4	1.2
Norway	2 077	0.3	2.1	2.7	1.6	1.3	2 197	0.6	1.6	2.2	1.2	1.0
Sweden	3 989	–0.8	1.6	–0.6	–0.4	0.6	4 321	–0.3	1.3	–0.2	–0.4	0.0
Oceania	**9 909**	**1.7**	**4.2**	**1.7**	**1.9**	**2.0**	**10 792**	**1.8**	**2.8**	**1.6**	**1.8**	**1.8**
Australia	8 276	2.0	4.1	1.3	1.9	2.1	9 050	2.1	2.8	1.3	1.8	1.8
New Zealand	1 633	0.4	4.7	3.4	1.7	1.7	1 742	0.8	2.6	3.2	1.6	1.7
OECD Europe[c]	**195 950**	**0.5**	**0.7**	**0.5**	**0.6**	**1.0**	**219 096**	**0.6**	**0.2**	**0.5**	**0.5**	**0.6**
EU	**146 306**	**0.3**	**0.5**	**0.1**	**0.4**	**0.8**	**164 681**	**0.5**	**0.1**	**0.3**	**0.3**	**0.4**
Total OECD[a, c]	**443 973**	**1.1**	**1.1**	**1.0**	**1.3**	**1.1**	**480 333**	**1.1**	**0.7**	**1.0**	**1.1**	**0.9**

.. Data not available.
a) Averages for 1984-1994 exclude Mexico.
b) Data based on the National Survey of Urban Employment (see "Sources and Methods", *OECD Economic Outlook*, No. 61, June 1997).
c) Averages for 1984-1994 exclude the Czech Republic, Hungary and Poland.
d) The average growth rate has been calculated by chaining on data for the whole of Germany to the corresponding data for western Germany prior to 1992.
Source: *OECD Economic Outlook,* No. 61, June 1997.

unemployed is currently around 36 million or 7½ per cent of the labour force (Table 1.3). The rate for the United States remained close to its lowest level of the past two decades whereas it rose in Japan to a historic high of 3.3 per cent. Within the European Union, a substantial reduction in unemployment in the United Kingdom and in some smaller countries was offset by further rises in France and Germany. Consequently, the unemployment rate for the European Union remained at over 11 per cent. Outside of the EU, large falls in unemployment were registered in Mexico, Poland and Turkey. While there has been some progress in reducing the incidence of long-term unemployment, in several European countries, they still account for 50 per cent or more of the unemployed (Belgium, Greece, Hungary, Ireland, Italy, Portugal and Spain) (Table H of the Statistical Annex). Unemployment rates for youth are closely

Table 1.3. **Unemployment in OECD countries**[a]

	Percentage of labour force					Millions				
	Average 1984-1994	1995	1996	Projections		Average 1984-1994	1995	1996	Projections	
				1997	1998				1997	1998
North America[b]	**6.6**	**6.0**	**5.8**	**5.4**	**5.4**	**9.4**	**9.8**	**9.6**	**9.1**	**9.2**
Canada	9.7	9.5	9.7	9.4	9.1	1.4	1.4	1.5	1.4	1.4
Mexico[c]	3.6	6.3	5.5	4.5	4.2	. .	1.0	0.9	0.7	0.7
United States	6.5	5.6	5.4	5.0	5.1	8.0	7.4	7.2	6.9	7.1
East Asia	**2.6**	**2.9**	**3.0**	**3.1**	**3.1**	**2.1**	**2.5**	**2.7**	**2.8**	**2.8**
Japan	2.5	3.1	3.3	3.2	3.1	1.6	2.1	2.2	2.2	2.1
Korea	2.9	2.0	2.0	2.7	2.8	0.5	0.4	0.4	0.6	0.6
Central and Western Europe[d]	**8.6**	**9.6**	**9.8**	**9.6**	**9.3**	**9.0**	**13.3**	**13.5**	**13.4**	**13.0**
Austria	4.9	5.9	6.2	6.4	6.2	0.2	0.2	0.2	0.2	0.2
Belgium	11.2	13.1	12.9	12.7	12.3	0.5	0.6	0.5	0.5	0.5
Czech Republic	. .	3.1	3.5	3.8	4.6	. .	0.2	0.2	0.2	0.2
France	10.2	11.5	12.4	12.6	12.2	2.5	2.9	3.2	3.2	3.1
Germany[e]	7.7	9.4	10.3	11.1	10.9	2.5	3.6	4.0	4.3	4.2
Hungary	. .	10.3	10.6	10.5	10.4	. .	0.4	0.4	0.4	0.4
Ireland	15.7	12.1	11.3	10.8	10.5	0.2	0.2	0.2	0.2	0.2
Luxembourg	1.7	3.0	3.3	3.3	3.2	0.0	0.0	0.0	0.0	0.0
Netherlands	7.4	7.1	6.7	6.2	5.6	0.4	0.5	0.4	0.4	0.4
Poland	. .	13.3	12.4	11.7	11.1	. .	2.3	2.1	2.0	1.9
Switzerland	1.6	4.2	4.7	5.4	5.0	0.1	0.2	0.2	0.2	0.2
United Kingdom	9.0	8.1	7.4	6.1	5.6	2.5	2.3	2.1	1.7	1.6
Southern Europe	**11.1**	**12.7**	**12.3**	**12.1**	**11.8**	**7.3**	**8.7**	**8.6**	**8.5**	**8.4**
Greece	8.0	10.0	10.4	10.4	10.5	0.3	0.4	0.4	0.5	0.5
Italy	9.6	12.0	12.1	12.1	11.9	2.2	2.7	2.8	2.8	2.7
Portugal	6.3	7.2	7.3	7.1	7.0	0.3	0.3	0.3	0.3	0.3
Spain	19.8	23.2	22.7	22.1	21.2	2.9	3.6	3.6	3.5	3.4
Turkey	8.0	7.5	6.5	6.6	6.5	1.6	1.6	1.4	1.5	1.5
Nordic countries	**6.1**	**9.8**	**9.3**	**8.8**	**8.1**	**0.7**	**1.2**	**1.1**	**1.1**	**1.0**
Denmark	9.9	10.3	8.8	8.1	7.4	0.3	0.3	0.2	0.2	0.2
Finland	8.1	17.2	16.3	14.7	13.7	0.2	0.4	0.4	0.4	0.3
Iceland	1.9	5.0	4.3	3.8	3.5	0.0	0.0	0.0	0.0	0.0
Norway	4.2	5.4	4.9	4.5	4.2	0.1	0.1	0.1	0.1	0.1
Sweden	3.6	7.7	8.0	8.1	7.5	0.2	0.3	0.3	0.3	0.3
Oceania	**8.2**	**8.2**	**8.1**	**8.0**	**7.8**	**0.8**	**0.9**	**0.9**	**0.9**	**0.9**
Australia	8.5	8.6	8.5	8.4	8.2	0.7	0.8	0.8	0.8	0.8
New Zealand	6.8	6.3	6.1	6.0	6.0	0.1	0.1	0.1	0.1	0.1
OECD Europe[d]	**9.3**	**10.6**	**10.5**	**10.4**	**10.0**	**17.0**	**23.1**	**23.2**	**23.0**	**22.3**
EU	**9.7**	**11.2**	**11.3**	**11.2**	**10.8**	**15.3**	**18.4**	**18.7**	**18.5**	**18.0**
Total OECD[b, d]	**7.1**	**7.6**	**7.5**	**7.3**	**7.1**	**29.2**	**36.4**	**36.3**	**35.7**	**35.2**

. . Data not available.
a) According to commonly used definitions (see *OECD Economic Outlook*, No. 61, June 1997).
b) Averages for 1984-1994 exclude Mexico.
c) Data based on the National Survey of Urban Employment (see ''Sources and Methods'', *OECD Economic Outlook*, No. 61, June 1997).
d) Averages for 1984-1994 exclude the Czech Republic, Hungary and Poland.
e) Data prior to 1991 refer to western Germany only.
Source: *OECD Economic Outlook*, No. 61, June 1997.

tied to changes in overall labour market conditions, tending to fall with declines in the overall unemployment rate and *vice versa*. Some progress has occurred: youth unemployment has dipped below 20 per cent in Ireland but remains above that level in Belgium, Finland, France, Italy and Spain.

For 1997 as a whole, the overall unemployment rate for the OECD area is expected to decline slightly to 7.3 per cent – largely driven by continued improvements in Mexico, the United States and several European countries, such as Finland, Ireland, the Netherlands, Poland and the United Kingdom. By contrast, further increases in unemployment are expected in France and Germany. For 1998, a further small fall is expected in the OECD unemployment rate to around 7 per cent (or 35 million persons unemployed). The US unemployment rate is expected to hover around 5 per cent in 1998 while

Table 1.4. **Business sector labour costs in OECD countries**[a]

Annual percentage change

	Compensation per employee					Unit labour costs				
	Average 1984-1994	1995	1996	Projections 1997	Projections 1998	Average 1984-1994	1995	1996	Projections 1997	Projections 1998
North America	**4.0**	**2.6**	**3.5**	**4.6**	**4.4**	**3.2**	**2.9**	**2.9**	**2.9**	**3.3**
Canada	4.2	1.0	3.7	2.9	2.5	3.2	0.6	3.6	1.2	1.2
United States	4.0	2.7	3.5	4.7	4.5	3.2	3.1	2.9	3.1	3.5
East Asia	**4.2**	**2.6**	**2.5**	**2.8**	**2.6**	**1.3**	**0.6**	**–1.1**	**1.2**	**0.1**
Japan	2.8	1.3	0.9	1.7	1.7	0.4	0.1	–2.4	0.5	–0.3
Korea	12.6	10.2	12.3	9.9	8.0	6.6	3.4	7.0	5.4	2.4
Central and Western Europe[b, c]	**4.4**	**4.6**	**4.0**	**3.9**	**3.8**	**2.4**	**2.6**	**1.8**	**1.4**	**1.6**
Austria	4.9	4.1	2.8	2.3	2.4	2.6	1.5	0.9	0.3	0.3
Belgium	4.5	1.6	1.3	2.5	2.6	2.6	0.1	–0.1	0.8	0.7
Czech Republic	. .	21.9	16.9	13.6	11.9	. .	17.0	12.1	10.3	9.2
France	4.2	2.8	2.8	2.4	2.3	1.8	1.3	0.8	–0.1	0.4
Germany[d]	4.3	3.2	2.4	2.5	2.4	1.9	0.9	–0.3	–0.9	–0.1
Hungary	. .	18.1	19.5	20.2	19.0	. .	14.0	17.6	17.2	15.5
Ireland	5.5	2.1	3.1	3.0	4.2	1.7	–3.6	–0.1	–0.5	0.4
Netherlands	2.5	1.5	0.7	2.5	3.1	1.1	1.4	–0.3	1.3	1.9
Poland	. .	32.6	26.7	19.5	15.4	. .	24.4	20.2	15.4	11.8
Switzerland	5.0	2.4	1.3	0.5	1.0	4.5	2.5	2.3	–0.4	–0.6
United Kingdom	6.8	3.1	3.4	4.2	5.0	4.9	1.9	1.8	2.6	2.9
Southern Europe[c]	**8.3**	**4.6**	**5.3**	**4.6**	**3.6**	**5.7**	**1.7**	**4.4**	**3.2**	**1.9**
Greece	14.5	10.3	13.5	8.8	8.0	13.3	9.0	12.0	6.8	5.9
Italy	7.3	5.9	4.9	4.8	3.4	4.7	2.0	4.3	3.5	1.6
Portugal	13.9	6.0	5.5	4.2	4.0	10.0	3.0	2.6	0.8	0.6
Spain	7.9	0.5	4.3	3.5	3.1	5.2	–0.5	3.5	2.2	2.1
Nordic countries[c]	**6.4**	**3.1**	**4.8**	**4.1**	**4.3**	**3.8**	**1.6**	**3.1**	**2.0**	**2.6**
Denmark	4.3	3.6	3.9	4.2	4.7	2.1	3.2	2.1	3.0	3.2
Finland	7.5	3.1	2.2	2.8	3.6	3.3	–0.4	–0.3	0.0	1.2
Norway	5.8	3.2	4.4	4.1	4.7	3.8	3.0	4.3	2.6	3.4
Sweden	7.4	2.8	7.0	4.7	4.2	5.1	0.9	5.0	2.1	2.4
Oceania	**5.3**	**2.6**	**5.2**	**4.1**	**3.9**	**4.1**	**3.3**	**2.8**	**2.4**	**2.3**
Australia	5.0	2.7	5.7	4.3	4.1	3.8	3.3	2.7	2.5	2.5
New Zealand	7.0	2.0	2.4	2.8	2.7	5.9	3.4	3.1	1.7	1.2
OECD Europe[b, c]	**5.5**	**4.5**	**4.4**	**4.1**	**3.8**	**3.4**	**2.3**	**2.6**	**1.9**	**1.8**
EU[c]	**5.8**	**3.4**	**3.5**	**3.4**	**3.3**	**3.5**	**1.4**	**1.8**	**1.3**	**1.3**
Total OECD *less* high inflation countries[c, e]	**4.7**	**2.8**	**3.3**	**3.8**	**3.6**	**2.9**	**1.9**	**1.7**	**1.9**	**1.9**
Total OECD[b, c]	**4.7**	**3.4**	**3.7**	**4.1**	**3.8**	**3.0**	**2.3**	**2.1**	**2.2**	**2.1**

. . Data not available.
a) Aggregates are computed on the basis of 1991 GDP weights expressed in 1991 purchasing power parities.
b) Averages for 1984-1994 exclude the Czech Republic, Hungary and Poland.
c) Countries shown.
d) The average growth rate has been calculated by chaining on data for the whole of Germany to the corresponding data for western Germany prior to 1992.
e) High inflation countries are defined as countries which have experienced annual inflation of 10 per cent or more in terms of the GDP deflator on average during the 1990s on the basis of historical data. Consequently, the Czech Republic, Greece, Hungary and Poland are excluded from the aggregate.
Source: *OECD Economic Outlook,* No. 61, June 1997.

the EU rate could fall to 10¾ per cent. Japan, Korea and Luxembourg will continue to be the only OECD countries recording unemployment rates of around 3 per cent or under.

3. Wages and inflation

Price inflation remains low in most OECD countries. Excluding the "high-inflation countries" (the Czech Republic, Greece, Hungary, Mexico, Poland and Turkey) inflation for the OECD area, measured by the GDP deflator, decelerated from 2.2 per cent in 1995 to 1.8 per cent in 1996. With excess capacity persisting in many countries, inflation is expected to remain low, although the economies of Australia, Denmark, Finland, Ireland, the Netherlands, Norway, the United Kingdom and the United States, are expected to be running at close to capacity either this year or next.

There has been a small rise in wage inflation, as measured by compensation per employee in the business sector, although wage growth remains quite moderate in most countries (Table 1.4). Excluding the "high-inflation countries", nominal earnings in the OECD area rose by just over 3 per cent in 1996 compared to 2¾ per cent in 1995. In many countries, the impact of slightly faster earnings growth on unit labour costs was more than offset by a rise in labour productivity growth. Consequently, the growth of unit labour costs for the OECD area, excluding the "high-inflation countries", was slightly lower in 1996 than in 1995. Both growth in average earnings and unit labour costs are expected to remain at low levels in most countries through 1997 and 1998. A small pick-up in wage inflation is projected for only a relatively few countries, mainly those listed above, where output is expected to be running at close to capacity and/or further declines in unemployment are projected.

C. RECENT WAGE DEVELOPMENTS

1. The evolution of real wage growth over the past decade

As discussed in Section B, there has been a considerable slowdown in nominal wage growth over the past decade in most OECD countries. In part, this reflects an accompanying slowdown in price inflation and so it is of some interest to examine whether there has been an unusual degree of moderation in *real* wage growth or not. Chart 1.1 shows real wage growth patterns over the most recent recovery in activity compared with the previous recovery in the 1980s.[1] Real wages refer to compensation per employee deflated by the private consumption deflator. In a number of countries – Austria, France, Iceland, Ireland, Italy, Japan, Portugal, Spain, the United Kingdom, and the United States – there are signs of considerable moderation. Although to a lesser extent, real wage growth also seems rather moderate compared with the previous recovery in Canada, Norway and Switzerland. In several countries, particularly Ireland and the United Kingdom, this moderation appears to have continued despite a robust recovery. By contrast, in Finland, Greece, New Zealand and Sweden, real wage growth has been less subdued than in the 1980s despite new highs being reached in unemployment during the early 1990s.[2] Australia also does not seem to have experienced exceptional wage moderation in the 1990s, although in this case the average unemployment rate in the current and previous recovery are at similar levels. However, in contrast to most other OECD countries, there had been a substantial reduction in real wages over the 1980s.[3]

To what extent are changes in average compensation per employee representative of earnings increases received by different groups of workers? In Table 1.5, real growth in average compensation per employee over the past five and ten years is compared with real earnings growth for different groups of full-time workers. Some care is required in comparing these earnings measures. In several respects, the compensation measure differs from the notion of a wage rate or earnings received by employees.[4] Firstly, it includes non-wage costs paid by the employer, but which are not part of an employee's take-home pay. A rise in the non-wage proportion of total labour costs implies, by construction, that total compensation per employee has grown faster than wage costs per employee. Secondly, the wage-cost component of the compensation measure includes sick pay, annual bonuses, holiday pay, etc. which are also not usually considered part of a worker's basic rate of pay. Thirdly, whereas the average compensation measure is derived from national accounts sources, the earnings data for full-time workers are taken from either administrative sources or from household or establishment surveys (see Annex 1.B). On the one hand, the national accounts estimates combine information from a range of sources in order to produce figures at the economy-wide level. The data on earnings of full-time workers, on the other hand, may not be fully comparable across countries in terms of coverage either because some sectors are not included or because establishments below a certain size are excluded in certain countries. They sometimes also refer to a single pay period such as usual weekly or monthly earnings. Finally, shifts in the composition of the work force by full-time/part-time status will

Table 1.5. **Real earnings growth for different groups of workers over the past five and ten years**[a]

Percentage changes

	Compensation per employee (national accounts)		Earnings of full-time workers[b]													
			Total		Men		Women		Youth[c] 20-24 years old		Prime-aged[d] 25-54 years old		Low-paid (1st decile)		High-paid[e] (9th decile)	
	Past 5 years	Past 10 years	Past 5 years	Past 10 years	Past 5 years	Past 10 years	Past 5 years	Past 10 years	Past 5 years	Past 10 years	Past 5 years	Past 10 years	Past 5 years	Past 10 years	Past 5 years	Past 10 years
Australia (1995)	4.4	–1.9	5.5	1.8	5.8	2.7	6.6	3.9	2.3	–4.8	7.9	1.6	8.4	0.8	12.6	7.7
Austria (1995)	5.5	17.9	8.0	. .	7.0	. .	8.5	. .	. .	. .	. .	. .	3.6	. .	10.1	. .
Belgium (1994)	14.5	23.5	9.9	16.9	8.0	15.3	14.1	25.8	6.9	17.9	8.6	16.3	8.1	15.7	13.3	20.3
Canada (1995)	0.1	3.0	0.7	3.8	–1.4	1.5	6.5	14.1	–2.0	–1.5	–0.4	1.6	. .	. .	. .	. .
Denmark (1993)	5.3	9.6	0.1	5.3	0.0	. .	2.7	. .	. .	. .	. .	. .	. .	. .	. .	. .
Finland (1995)	4.9	22.7	4.6	21.5	4.8	21.9	5.4	22.1	3.8	23.1	2.9	19.1	8.8	26.9	2.0	18.5
France (1994)	5.8	10.2	2.6	7.2	2.1	6.7	4.4	10.0	1.1	1.1	1.1	1.7	3.1	4.0	3.4	10.2
Germany[f] (1994)	4.1	14.1	9.9	21.0	7.6	19.7	15.7	26.1	9.6	19.5	3.0	10.9	30.8	59.6	11.7	21.5
Italy (1993)	10.3	20.1	0.8	10.4	3.1	12.4	2.5	12.6	. .	. .	. .	. .	–11.1	7.4	0.5	20.0
Japan (1995)	2.6	13.4	4.5	17.5	3.3	15.8	9.9	24.7	6.2	17.0	1.4	11.8	11.4	24.3	5.9	19.9
Korea (1995)	27.9	91.8	43.5	116.3	38.5	100.2	50.7	149.1	41.0	132.8	41.0	91.2	. .	. .	. .	. .
Netherlands (1994)	3.9	7.3	3.3	9.3	2.7	8.4	7.7	17.1	. .	. .	. .	. .	3.5	8.3	2.7	9.9
New Zealand (1994)	–3.4	1.5	–0.6	–2.8	–1.3	–4.0	5.8	6.0	. .	. .	. .	. .	0.3	–4.4	3.4	0.3
Sweden (1994)	1.5	15.1	–2.3	9.3	–2.0	10.8	–0.2	10.0	–9.6	4.2	–3.3	6.5	–5.1	3.4	–1.8	11.8
Switzerland (1996)	3.3	15.1	3.0	. .	3.9	. .	6.2	. .	–3.8	. .	1.8	. .	3.9	. .	5.2	. .
United Kingdom (1996)	5.1	15.7	8.5	23.2	7.8	21.9	11.7	33.4	1.6	13.4	6.0	18.9	4.9	13.8	9.1	24.9
United States (1995)	0.9	2.2	–0.9	–3.1	–4.8	–6.3	0.2	3.7	–8.2	–11.0	–2.8	–4.8	–7.4	–7.2	–2.1	3.1

. . Data not available.

a) All nominal wage series have been deflated by each country's consumer price index. The latest year to which the data refer is shown in parentheses. For the following countries, the data for earnings growth refer to a different period than indicated but have been expressed in terms of a standard five-yearly or ten-yearly rate of change: for Italy and New Zealand, the past five years refer to the past six years; for Belgium and Finland, the past ten years refer to the past nine years; and for the Netherlands, the past ten years refer to the past eight years.

b) The data for Austria also include part-time workers.

c) Youth refer to 21-25 year-olds for France.

d) Prime-age workers refer to workers aged 31-40 for France, 35-39 for Korea, and 35-44 for the Netherlands and Sweden.

e) For Austria, high-paid earnings correspond to 8th decile earnings.

f) All data refer to western Germany only.

Source: See Annex 1.B.

Chart 1.1.

Real compensation per employee during recoveries in activity[a]

Index: trough = 100

Chart 1.1. *(cont.)*

Real compensation per employee during recoveries in activity[a]

Index: trough = 100

	Current recovery Trough	Previous recovery Trough		Current recovery Trough	Previous recovery Trough
Australia:	1991 S2	1983 S1	Italy:	1993 S2	1984 S2
Austria:	1993 S2	1987 S1	Japan :	1995 S1	1987 S1
Belgium:	1993 S2	1987 S1	Netherlands:	1993 S1	1982 S2
Canada :	1992 S2	1982 S2	New Zealand:	1992 S2	1983 S1
Denmark:	1993 S1	1981 S2	Norway:	1989 S1	1982 S2
Finland:	1993 S1	1982 S1	Portugal:	1994 S2	1985 S2
France:	1993 S2	1984 S2	Spain:	1993 S2	1981 S1
Germany[b]:	1993 S1	1982 S2	Sweden:	1993 S1	1983 S1
Greece:	1993 S2	1983 S2	Switzerland:	1993 S1	1982 S2
Iceland:	1993 S1	1983 S2	United Kingdom:	1993 S1	1981 S1
Ireland:	1993 S2	1983 S1	United States:	1991 S2	1982 S2

a) Total compensation per employee divided by the deflator for private consumption expenditure. The troughs in activity correspond to low points in the Secretariat's estimates of the output gap.

b) Western Germany only.

Source:OECD Economic Outlook, No. 61, June 1997.

affect growth in average compensation per employee but obviously not the growth of full-time earnings.[5]

With the exception of Australia, Canada, Germany, Japan, Korea, the Netherlands and the United Kingdom, real earnings growth for all full-time workers has been much weaker over the past decade compared with business-sector compensation per employee. The gap may, in part, be explained by increases in non-wage costs as a proportion of total labour costs (Table 1.6). For example, in Finland the non-wage share of labour costs rose by 4 percentage points over the past ten years, accounting for much of the 9 percentage point gap between the two series. On the other hand, in the United Kingdom, the "impact" on total labour compensation of a substantial rise in the earnings for full-time workers was offset to some extent by a fall in the non-wage share of labour costs.

The growth in earnings of all full-time workers is itself an average which will be affected by changes in the composition of the full-time work force by age, gender, type of job and so forth.[6] Even if all workers received the same increase in wages, any shift in employment towards workers with above-average (below-average) wages will, *ceteris paribus*, tend to raise (lower) growth in aggregate compensation per employee. For example, because the share of women in total employment has increased virtually everywhere and because their average earnings are lower than those of men, this translates, in an accounting sense, to lower overall growth in earnings. In all the countries shown in Table 1.5, with the exceptions of Finland and Sweden, women have experienced faster real earnings growth than men over the past ten years.[7] Among those countries for which data are available, the earnings of youth aged 20-24 have generally fallen relative to prime-age workers. In Australia, Canada and the United States, real earnings of younger workers have even fallen in absolute terms over the past decade. At the same time, the share of younger workers in total employment has been falling in most countries. With the exceptions of Sweden and the United States, the net impact has been for measured earnings growth for all full-time workers to be higher than for either younger or prime-age workers.

There have also been very different developments in earnings at the bottom compared with the top of the distribution in a number of countries. With the exceptions of Finland, Germany and Japan, earnings at the top have generally risen faster than at the bottom over the past five to ten years. In a number of countries, real wages for low-paid workers have fallen substantially over the past five years (Italy, Sweden, the United States), and even larger falls have occurred for low-paid men [OECD (1996*b*)]. A growing dispersion of earnings in some countries has implied much slower growth in median earnings than in mean earnings. In the United States, for example, mean earnings of all full-time employees rose by 6.7 per cent in real terms

Table 1.6. **Non-wage labour costs as a proportion of total labour costs**[a]

Percentages

	1985	1990	1995	Percentage point change over past:	
				5 years	10 years
Austria	18.4	18.3	18.9	0.6	0.5
Belgium	23.1	25.9	26.3	0.4	3.2
Canada	10.7	11.1	13.7	2.6	3.0
Finland	18.4	20.4	22.4	2.0	4.0
France	27.9	27.9	28.2	0.3	0.3
Germany[b]	18.8	18.8	19.6	0.8	0.8
Italy	26.8	28.7	29.9	1.2	3.1
Japan	13.0	14.6	14.2	–0.4	1.2
Norway	16.4	16.9	16.2	–0.7	–0.2
Sweden	26.5	27.2	26.4	–0.8	0.0
Switzerland	13.1	13.1	14.1	1.0	1.1
United Kingdom	13.5	11.9	12.6	0.7	–0.8
United States	17.7	17.8	18.7	0.9	1.0

a) The data are derived from national accounts estimates of labour costs for the whole economy. Wage costs refer to all wage and salary payments and non-wage labour costs refer to employer social security contributions.
b) Data refer to western Germany only.
Sources: OECD, *National Accounts 1983-1995*, Vol. 2; and the OECD analytical database.

over the period 1985 to 1995, whereas median earnings dropped 3 per cent over the same period.

2. Factors affecting wage behaviour

While compositional effects can mask underlying changes in wages experienced by different groups of workers, there does appear to have been a general slowdown in wage inflation in OECD countries over recent years, irrespective of the earning series examined. This may have been the result of a number of factors. For example, the recession in the early 1980s was quite severe which, together with a sharp fall in oil and other commodity prices in the mid-1980s, may have weakened inflation expectations. The recession of the early 1990s may have also further lowered inflation expectations, especially as some countries recorded job losses in some white-collar professions and service sectors that had previously been relatively immune to downturns in activity [OECD (1994), Chapter 1]. In addition, a sharp increase in workers' perceptions of job insecurity took place in many countries between the 1980s and 1990s (see Chapter 5). At the same time, many countries have put in place policies to affect wage bargaining directly as well as other reforms designed to enhance flexibility in labour and product markets.

Table 1.7 provides an overview of recent government interventions designed to affect wage determination. A number of countries have introduced incomes policies of various kinds or set targets for wage increases in tripartite agreements. Other countries such as Australia, New Zealand, Sweden and the United Kingdom have shifted towards more decentralised systems of wage bargaining.[8] For several countries, these changes have followed on from other reforms undertaken in the 1980s. In New Zealand, reforms to the award system of wage determination were begun in the 1980s, culminating in the Employment Contracts Act of 1991 which completely replaced that system by bargaining at the enterprise and individual level. A shift away from a highly centralised system had also begun in Australia during the 1980s, although from 1983 to 1996 bargaining continued to take place in the context of Prices and Incomes Accords between the unions and the Federal Government [OECD (1997*a*)].

There have also been a number of legislative changes with respect to minimum wages in recent years. A statutory minimum wage exists in only a handful of countries, although minimum wages are set in collective agreements in most other countries.[9] Except for agriculture, the Wages Councils in the United Kingdom, which set minimum wages in certain sectors, were abolished in 1993. For several countries, automatic indexing of minimum wages was either stopped, as in Greece in 1991, or suspended for several years, as in the Netherlands. The statutory minimum relative to average earnings has generally declined in most countries over the past ten years (Chart 1.2). The relative minimum wage has risen somewhat from a low level in Canada in recent years and remained stable in France, where it has been boosted by the occasional 'coup de pouce' over and above the rise in inflation.

In other areas, governments have also sought to influence either the level of labour costs or their growth. Reductions in employers' social security charges for low-paid workers have occurred in several countries, most notably Belgium and France, where non-wage labour costs are particularly high. In most OECD countries, public sector pay has been restrained and, in several countries, reforms in public sector pay determination are being or have recently been implemented [OECD (1997*b*)].

Government policies may also indirectly influence the wage-setting process. For instance, employment protection legislation (EPL) could lead employed "insiders" to discount prevailing levels of unemployment when making their wage claims. In a number of countries, there has been some easing in recent years in legislation relating to job dismissals [OECD (1997*c*)]. Income support may raise the reservation wages of the unemployed and several countries have introduced reforms over the past decade to their Unemployment Insurance (UI) systems to increase work incentives. This has been partly reflected in a decline in the OECD summary measure of the generosity of unemployment benefit entitlements in some countries, most notably in the United Kingdom, but also more recently in Austria, Ireland, the Netherlands and Sweden [OECD (1996*b*); Martin (1996); OECD (1997*c*)]. Some rises in the generosity of benefits have also occurred, albeit from a low level, in Greece, Italy, Portugal and Switzerland. Active labour market policies, on the other hand, which focus on getting the unemployed, particularly the long-term unemployed back into work may have a moderating impact on wage claims, although this will depend on the specific design features of individual programmes. A whole raft of new active labour market measures have been introduced in OECD countries during the past decade, although with differing degrees of effectiveness [Fay (1996); OECD (1993)].

These institutional changes have also occurred in the context of considerable declines in trade union density in many countries along with some decline in the proportion of workers covered by a collective agreement (see Chapter 3, Table 3.3). However, with the exception of New Zealand and

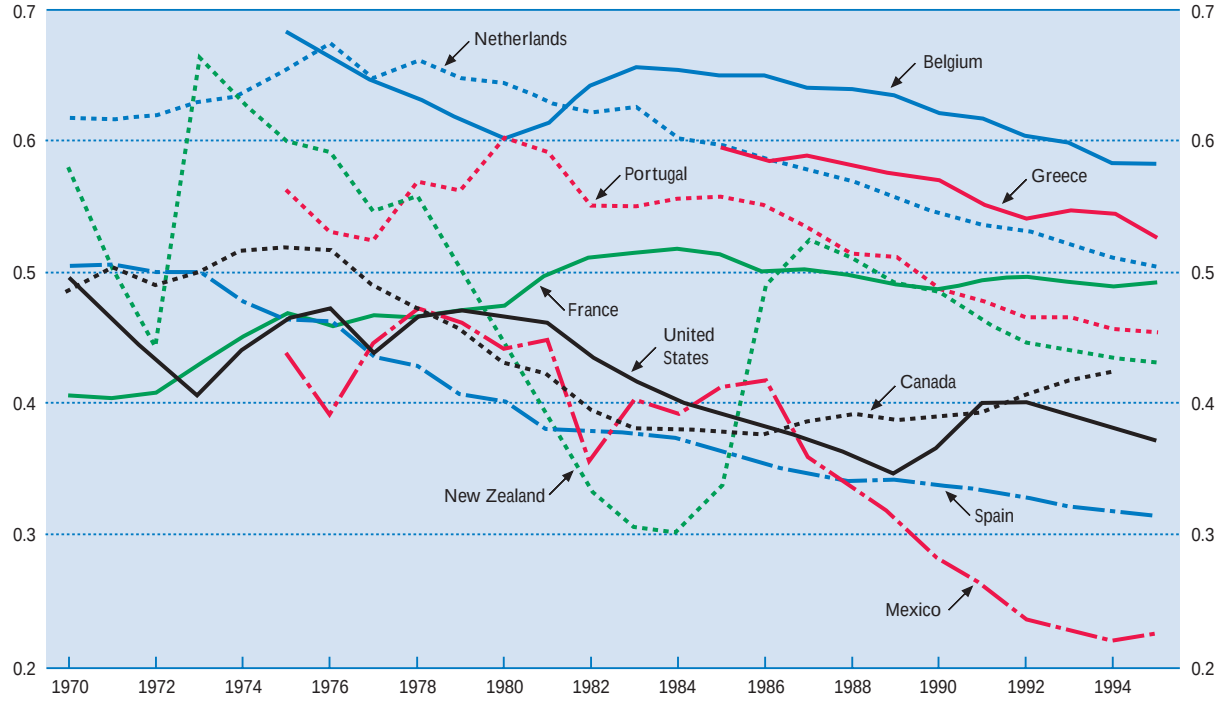
Table 1.7. **Recent wage bargaining reforms and incomes policy agreements**

	Year	Description of reform
		A. Wage bargaining reforms
Australia	1992	*Industrial Relations Act 1988* amended to encourage spread of enterprise bargaining through Certified Agreements (CAs). Award system relegated to providing safety net increases in wages and conditions.
	1993	Creation of Enterprise Flexibility Agreements (EFAs) to allow enterprises, where unions are not or only partially represented, to negotiate directly with employees, although unions retain the right to intervene in the ratification of these agreements. Wider use of flexibility clauses in awards encouraged to allow workplaces to tailor general conditions of awards to their individual needs.
	1996	*Workplace Relations Act* passed to further promote the move towards enterprise bargaining through the introduction of Australian Workplace Agreements (AWAs) which supersede EFAs. AWAs can be negotiated either collectively or individually between employers and employees but must be signed individually. Compulsory unionism and clauses giving preference for union members made illegal.
Belgium	1993	Wages frozen in real terms in 1995-1996 and the price index used for determining wage increases altered to remove highly-taxed items such as tobacco, alcohol and fuel.
	1996	*Loi relative à la promotion de l'emploi et à la sauvegarde préventive de la compétitivité* (Law on Employment Promotion and the Preventive Safeguarding of Competitiveness) sets a maximum limit to wage increases based on a weighted average of projected growth in labour costs in Belgium's major trading partners. Firms that have increased employment can grant their employees additional increases above this limit in the form of profit-sharing schemes.
Italy	1992-1993	Abolition of the *scala mobile* system of automatic wage indexing.
New Zealand	1991	*Employment Contracts Act* replaces the former, centralised, system of awards by bargaining at the enterprise level through either individual or collectively agreed employment contracts. Becomes illegal to give union members any preference in contracts, to unduly influence employees to belong to a union, or to negotiate a closed shop. Apart from a minimum code of employment rights there are no statutory job protection obligations with respect to a minimum notice period or severance pay.
Spain	1994	As part of a series of labour market reforms, the government instructed the social partners to replace the remaining Labour Ordinances (*ordenanzas*) with collective agreements. The Ordinances governed all aspects of the terms and conditions of employment in different sectors and were seen as being too rigid with respect to job classification, salary increments, overtime, etc.
		B. Incomes policy agreements
Australia	1983-1995	A series of eight Prices and Incomes Accords were agreed between the Federal Government and the umbrella trade union organisation, the ACTU, which committed the ACTU to deliver agreed wage bargaining outcomes in exchange for a greater say in social policy.
Finland	1992	Continued wage freeze in 1993, but compensation for any rise in inflation beyond a specific amount.
	1995	Uniform percentage increase in contractual wages, but compensation for any rise in inflation beyond a specific amount. (Government to cut income taxes as well as to lower employees' contribution to the unemployment insurance fund.)
Ireland	1991-1993	General annual percentage increases in wages, subject to minimum absolute increase. "Local Bargaining Clause" allows employers to negotiate productivity increases in exchange for pay and conditions, subject to a cap.
	1994-1996	Ceiling on annual wage increases, based on expected price rise. No local wage supplements in exchange for productivity increases. (Government to reduce the tax burden on workers, tax relief being concentrated on low-income workers.)
Italy	1992-1993	Following the abolition of the *scala mobile* system, provisions for wage increases based on the government's inflation target.
Netherlands	1992-1993	Wage moderation recommended at lower levels.
Norway	1993	"Solidarity alternative" agreement adopted by the government and the social partners to moderate wage settlements with a view to preserving international competitiveness of mainland industries.
Portugal	1996	Wages set on basis of the government's inflation target and automatically adjusted if monthly change in CPI inflation deviates from target.
Sweden	1991-1993	"Stabilisation" agreement between social partners for the period January 1991 to March 1993 to reduce wage growth (amongst other aims).

Sources : OECD Economic Surveys, various issues; OECD, *Implementing the Jobs Strategy: Member Countries' Experience,* 1997; Employment Observatory, *Tableau de bord 1996,* European Commission, 1996; and Income Data Services, *Employment Europe,* various issues.

Chart 1.2.

Minimum wage relative to average earnings, 1970-1995



Notes:

Belgium: Minimum adult monthly wage divided by monthly equivalent of average earnings of manual workers in industry.
Canada: Weighted average of provincial minimum hourly wage divided by average hourly earnings in all industries.
France: Net minimum hourly wage divided by hourly equivalent of average annual net earnings of all full-time employees in the private and semi-public sectors.
Greece: Minimum daily wage for an unqualified single worker divided by daily equivalent of average hourly earnings of manual workers in manufacturing.
Mexico: National average daily minimum wage divided by the daily equivalent of average hourly earnings of manual workers in manufacturing.
Netherlands: Minimum adult monthly wage divided by average monthly earnings of all full-time workers.
New Zealand: Minimum weekly wage divided by average weekly earnings of employees with ordinary working time.
Portugal: Minimum monthly wage for non-agricultural workers aged 20 and over divided by average monthly earnings in the business sector.
Spain: Minimum monthly wage divided by average gross monthly earnings per person.
United States: Federal minimum hourly wage divided by average hourly earnings of production and non-supervisory workers on private non-agricultural payrolls.
Source: OECD minimum wage database.

the United Kingdom, the coverage rate has fallen much less than has union density. The factors behind these trends are many and are not fully understood. Policies are a factor, but more general "structural" shifts in demand and supply have played a role as well. For instance, the share of blue-collar manufacturing workers – the traditional core members of trade unions – in total employment has declined considerably in most countries over the past few decades. Other structural changes may also have affected wage developments, including shifts in product market competition, ageing of the work force, and changes in the skill mix of labour supply and demand.

3. Testing for changes in the relationship between wage growth and unemployment

Whether or not the various changes in labour market institutions and policies outlined above have had an impact on the relationship between wage growth and unemployment is an important question. It is also difficult to answer because modelling wage determination accurately is not easy. This subsection takes a simple approach to the issue by presenting the results of estimating a Phillips-curve type equation linking aggregate wage changes to the level of unemployment. It then outlines the results of several statistical tests to deter-

mine if any breaks can be detected, regardless of the underlying reasons for them.

This subsection builds upon previous work carried out by the OECD. Based on their estimations of Phillips-curve wage equations, Chan-Lee *et al.* (1987) could find little evidence that the *basic structure* of the wage determination process at the macroeconomic level had changed in the 1980s. That is, the responsiveness of aggregate wage growth to developments in unemployment, inflation and other determinants of aggregate wages appeared to be stable. However, since this study was carried out there has been a further round of labour market reforms which may have affected wage determination and, therefore, it is of some interest to update this work.

Country-specific wage equations for 21 OECD countries were derived from a general specification and estimated for the period 1970 to 1995 (see Annex 1.A for further details). The general specification is based on a traditional expectations-augmented Phillips curve, where nominal wage growth is a function of the level of the unemployment rate and expected inflation. For some countries, the unemployment term enters in log form or as a reciprocal to take account of a non-linear relationship between wage growth and unemployment. Inflation expectations are assumed to be adaptive and equal to a weighted average of current and lagged growth in the private consumption deflator; absence of money illusion in the long-run is imposed by constraining the weights to sum to one. Other variables included are: *i*) the change in the unemployment rate; *ii*) a "terms-of-trade" variable (proxied by the difference between the growth in the GDP and private consumption deflators); and *iii*) an error-correction term, representing the difference between real wages and trend labour productivity.[10] The change in the unemployment rate is introduced to test for possible hysteresis effects in wage adjustments.[11] A negative sign is expected for this coefficient, *i.e.* wage growth is assumed to be faster (slower) when unemployment is declining (rising). The "terms-of-trade" variable reflects the fact that employees are interested in wage rates relative to consumer prices while employers are interested in wage rates deflated by output prices. The expected sign of this variable is positive. Finally, the error-correction term implies that real wages adjust over time towards a level determined by trend productivity and the unemployment rate.[12] The coefficient is expected to be negative.

For almost all countries, the wage-equation specification chosen is generally satisfactory in terms of its explanatory power, although the low Durbin-Watson coefficients suggest problems of autocorrelation in some cases. Exceptions are Australia, Ireland and the United States, where the best specification that could be selected using annual data explains less than one-half of the variation in the dependent variable. For all countries, the estimated coefficients have the correct sign, in terms of prior expectations, and are statistically significant. Further details on specifications are given in Annex 1.A and the results of the estimations are shown in Table 1.A.1.

Several tests were conducted to determine whether there has been a recent change in the relationship between aggregate wage growth and unemployment. First, out-of-sample forecasts were produced with each country's wage equation estimated up to 1990. The pattern of the predicted nominal wage growth over the 1990s was then compared with actual developments (Chart 1.3). Generally, the equations "predict" actual behaviour reasonably well. No consistent cross-country patterns, for or against the hypothesis of greater wage moderation over the 1990s than in the past, appear from this comparison. Germany, the Netherlands, New Zealand and the United States are the only countries for which actual wage growth was below predicted growth in virtually all years, although lower-than-predicted growth also occurred for most of the period in Japan and Switzerland.[13] The opposite pattern occurs in Australia, Austria, Belgium, Denmark, Finland and Norway, where actual wage growth exceeds predicted growth in all years. Actual wage growth closely follows predicted wage growth in Canada, France and Switzerland. For the remaining countries, both under- and over-prediction occurs.

The stability of wage behaviour was further checked using a Chow test for "structural breaks" (Table 1.8). This test assesses the overall stability of the equations over the sample period. Chan-Lee *et al.* (1987) identified the early to mid-1980s as a possible period of change due to various microeconomic reforms. Since then, further labour and product market reforms have been introduced in a number of OECD countries. Therefore, Chow tests were carried out for two potential break points: 1984/1985 and 1989/1990.[14] Based on this test, there was a structural change in the wage equation in the period following 1984 in more than one-third of the countries and in only one-third of the countries in the period after 1989.

It is one thing to find apparent breaks in the relationship between aggregate wage growth and unemployment, but another to specify what they represent. For example, a smaller constant term may reflect many things, including that the equilibrium rate of unemployment has fallen. On the other hand, there may have been a change in the sensitivity of aggregate wage growth to the difference between

Table 1.8. **Summary of stability tests on wage equations**[a]

	1984/1985 break			1989/1990 break		
	Chow test	Parameter shifts		Chow test	Parameter shifts	
		Constant	Unemployment		Constant	Unemployment
Canada						
France						
Germany[b]	*					
Italy						
Japan	*			*	–*	
United Kingdom						
United States	**	–*		*		
Australia	**			**	+*	+**
Austria	**	+**	+***			
Belgium					+**	+**
Denmark	**			**	+**	+**
Finland	**	+*	+**	**	+*	+**
Greece				**		
Ireland						
Netherlands					–*	–*
New Zealand						
Norway						
Portugal	**					
Spain						
Sweden	**		–*			
Switzerland				*		

a) For the Chow test, * and ** indicate that the null hypothesis of equation stability is rejected at the 10 and 5 per cent significance levels, respectively, using an F test. For parameter shifts, * and ** indicate levels of significance of the coefficient on the dummy variable of 10 and 5 per cent, respectively, using a t test. A "+" ("–") indicates that the coefficient on the dummy variable is positive (negative).
b) Western Germany only. Tests of equation stability were not carried out for the 1989/1990 break point due to an insufficient number of observations.
Source: Secretariat calculations based on data from the OECD analytical database.

actual unemployment and its equilibrium rate. This would show up as a change in the coefficient on actual unemployment. To see if there have been changes in specific coefficients, dummy variables were interacted with either the constant or unemployment rate terms. Separate dummies were introduced for 1985 and 1990, *i.e.* taking the value one after 1984 and 1989, respectively, and the value zero for the earlier periods.

In just four countries is there a statistically significant shift in either the constant term or the unemployment term for the first period, and in seven of the 21 countries for the second period. A shift occurred both in the constant and in the coefficient on the unemployment rate in Australia (in 1990), Austria (in 1985), Belgium (in 1990), Denmark (in 1990), Finland (in 1985 and 1990) and the Netherlands (1990). Shifts in the constant term only occurred in Japan (1990) and the United States (in 1985), while Sweden experienced a significant shift in the coefficient on the unemployment rate (in 1985).

For most of those countries for which there is some evidence of a structural break, the coefficients on the dummy variable for either the constant or unemployment rate terms are positive rather than negative, implying that for any given level of unemployment, wage growth has risen compared with the previous period. In only Japan, the Netherlands and the United States, and for 1985 only, do these coefficients have a negative sign. The implied increase in several countries in the constant term may reflect a rise in the equilibrium rate of unemployment. Previous OECD work has suggested that, in many European countries, there has been a rise in the NAIRU (Non-Accelerating Inflation Rate of Unemployment) over the past decades [Elmeskov and MacFarlan (1993); Scarpetta (1996)]. However, because these specifications are very simple, changes in omitted variables could well account for the upward shift in the constant term. The positive sign of the dummy for the unemployment term indicates that the sensitivity of wage growth with respect to unemployment has decreased but, as with the constant, omitted variables may partly explain this result. In short,

Chart 1.3.

Actual versus predicted wage growth[a]

Percentages

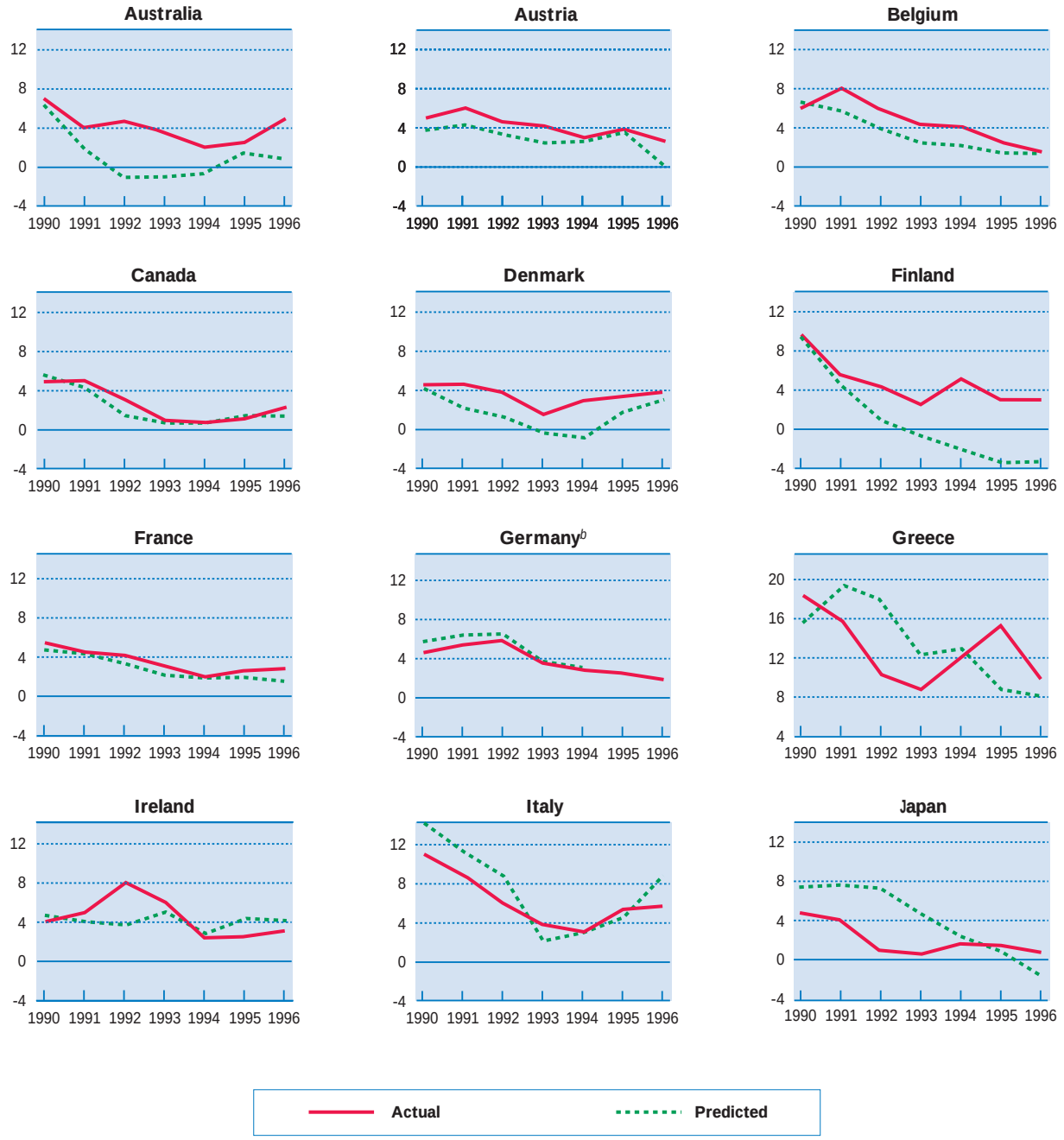
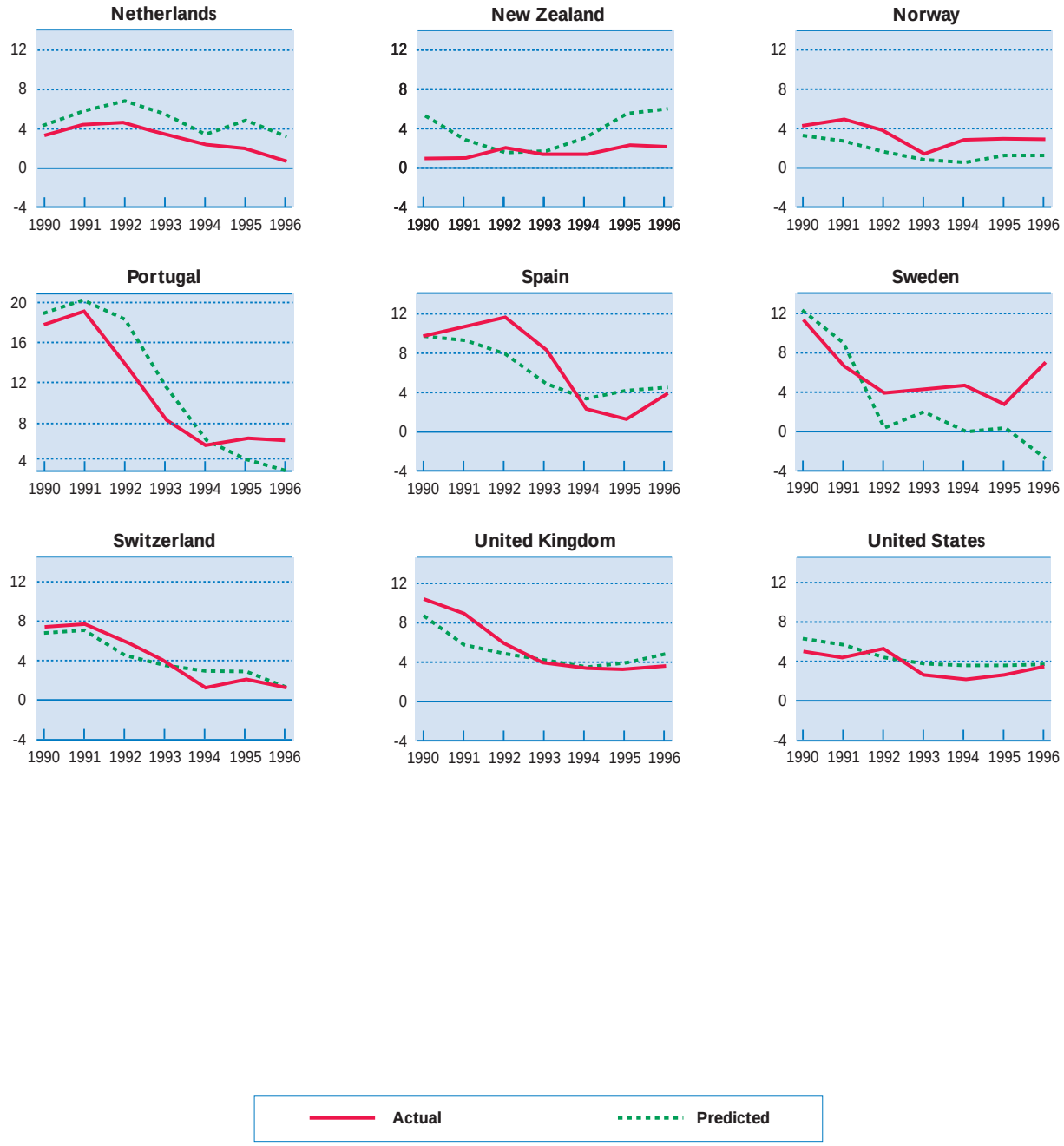


Chart 1.3. *(cont.)*

Actual versus predicted wage growth[a]

Percentages



a) Both actual and predicted wage growth refer to annual percentage changes in average nominal compensation per employee. Predicted wage growth refers to out-of-sample forecasts of the wage equations shown in Table 1.A.1 which have been estimated over the period 1970 to 1989.

b) Western Germany only.

Source: Actual wage growth from *OECD Economic Outlook*, No. 61, June 1997.

considerable caution is necessary in interpreting these findings.[15]

D. CONCLUSIONS

There was a slight pick-up in economic activity for the OECD area as a whole during 1996, driven largely by faster growth in Japan and North America which more than offset a slowdown in the European Union. A more broadly-based revival in growth is expected during 1997 and 1998, but this is only likely to achieve a reduction of one million in the current total of 36 million unemployed in the OECD area. While the United Kingdom and some of the smaller European countries are likely to see further declines, the average unemployment rate for the European Union is projected to fall only modestly by just over half a percentage point to around 10¾ per cent in 1998. This compares with unemployment rates for Japan and Korea of 3 per cent and under, and projected stability in the rate for North America at around 5½ per cent.

There has been a sharp slowdown in both price and nominal wage inflation in nearly all OECD countries and this is expected to continue through 1997 and 1998. In terms of real wages, the picture is less clear. Some countries have recorded more moderate growth over the current recovery than during a comparable period over the previous recovery; others have experienced faster growth. There has also been substantial variation across different groups of workers in terms of real earnings growth over the past five to ten years. Among full-time workers, younger workers have generally experienced weaker growth than prime-age workers and women in most countries have experienced faster growth than men. In several countries, real earnings growth for low-paid workers has been particularly weak.

Regardless of these differences, the moderation of aggregate nominal wage claims in recent years has raised the issue of whether there has been an underlying change in wage-setting behaviour. There have been substantial microeconomic reforms and institutional changes in many OECD countries during the 1980s and 1990s which may have had an impact on wage determination. At the same time, other countries have introduced incomes policies in order to restrain wage growth.

Relatively simple wage equations have been used to test whether there is evidence of any structural changes in the relationship between aggregate wage growth and unemployment as a result of these institutional changes and reforms. At the aggregate level, there is little evidence of a widespread change in the direction of greater wage moderation. Institutional changes over the past decade may have worked to increase wage flexibility in some countries but this may not have been sufficient to offset the upwards impact on wage claims of a rise in structural unemployment which appears to have occurred in many countries. These conclusions are, of course, very tentative given that a richer specification of the determinants of wages could result in a different picture. There may have been changes in inflation expectations which have not been explicitly taken into account. It is also possible that some changes in policies and institutions are too recent and so have not yet been fully reflected in any noticeable change in aggregate wage behaviour.

Notes

1. In this context, a "recovery" simply refers to the period following a trough in activity as identified by a low point in the Secretariat's output gap measure; for several countries the recent recovery has been particularly weak.
2. In the case of New Zealand, a fall in real compensation per employee during the early 1980s was largely due to the imposition of a wage freeze over the period 1982 to 1984. Compared with its long-run trend, real wage growth during the first half of the 1990s has been very moderate [see OECD (1996*a*)].
3. This occurred within the context of a series of Prices and Incomes Accords between the unions and the Federal Government [OECD (1997*a*)].
4. The aggregate measure of employee compensation is derived for each country by dividing the national accounts estimate of total employee compensation by the total number of employees. Total employee compensation includes both wage and non-wage labour costs. Wage costs refer to all payments received by employees in the form of wages and salaries, both in cash and kind, but before deduction of employee contributions to social security schemes. Non-wage costs include all contributions made by employers in respect of their employees to both private and public social security schemes.
5. In Australia, for example, real mean earnings of full-time workers (according to the household-survey measure) rose by 3½ per cent between 1985 to 1995, but mainly because of a sharp rise in the incidence of part-time work, earnings for all workers fell by 2½ per cent.
6. For France, it is possible to gain some idea of the overall importance of these compositional effects relative to "pure" wage-rate increases in accounting for aggregate earnings increases. Based on administrative data, the French National Statistical Institute (INSEE) regularly publishes estimates of earnings growth holding constant the employment structure by age, gender, industry and occupation. In every year, earnings growth without adjusting for compositional changes tends to be higher than after adjustment. In other words, increases in basic rates of pay for many French workers are much less than is suggested by aggregate measures of earnings growth.
7. It is likely, that earnings growth for women relative to men would be less favourable if a comparison were made of hourly earnings for all male and female workers, including part-time workers.
8. See Chapter 3, Table 3.3, for summary measures of changes over the past decade in the degree of centralisation and co-ordination of wage bargaining in OECD countries.
9. In Belgium and Greece, the minimum wage is set by collective agreement, but applies to all sectors (in the private sector only in Greece) and, thus, in effect, is little different from a statutory minimum wage.
10. A variable to capture changes in the tax wedge between labour costs for employees and the take home pay of employees was also tried. However, it was generally insignificant or incorrectly signed for almost all countries and was dropped. It should be noted, however, that other studies, using more disaggregated or higher frequency data and/or a different specification, do find that, in some countries, tax wedges play a role as a determinant of wages [Tyrvainen (1995); Turner *et al.* (1996)].
11. In a Phillips-curve framework, wage growth depends on the gap between the actual and the *equilibrium* or structural unemployment rate. The *equilibrium* rate of unemployment will be affected by a range of structural factors other than wage and price inflation; it is often assumed to be constant and so can be subsumed into the constant term in a wage equation. However, if it is itself affected by the path of actual unemployment, there is hysteresis and wage claims will not only be influenced by the prevailing level of unemployment, but also by its past changes. Elmeskov and MacFarlan (1993) test for whether there is full or only partial hysteresis by controlling for whether real wage growth responds to changes in unemployment only. According to their results, the *level* of unemployment tends to remain significant when the change in unemployment is added to the wage equations, although in some countries changes in unemployment have an independent effect on real wage growth. Thus, while there may not be full hysteresis, there may be a "speed limit" to how quickly reductions in unemployment can occur without re-igniting inflation.
12. The inclusion of the error-correction term has been suggested by Blanchard and Katz (1997) as one way for controlling for the possibility of a long-run relationship between the level of wages and unemployment. If the coefficient on this term is one or close to one this suggests that there is a relationship between the level of wages and unemployment rather than a relationship between changes in wages and the level of unemployment. Blanchflower and Oswald (1994) argue that the finding of the latter relationship at the aggregate level may simply be the result of measurement errors and missing variables. They suggest the use of data on individuals or regional data to test for the correct specification of the wage-unemployment relationship. However, Blanchflower and Oswald's finding of a wage curve for the United States using regional

data has since been challenged by Blanchard and Katz (1997). Using a range of alternative measures of wages likely subject to less measurement error than the series used by Blanchflower and Oswald, they show that, while there may be a long-run relationship between the level of wages and unemployment, the adjustment is slow. Hence, they argue that Phillips-curve type wage equations are not necessarily misspecified.

13. This result for New Zealand has also been found in previous work [OECD (1996*a*)] which suggested that, since the introduction of the Employment Contracts Act of 1991, wage growth has been more moderate than past behaviour would predict.

14. The choice of these two break points is simply to test whether there was a significant change in the overall relationship between wage growth, inflation and unemployment in the period after and preceding them, rather than a test of whether a structural change occurred precisely at these dates.

15. Compositional changes could also have important implications for the robustness of these results. As noted earlier, changes in the proportion of full- and part-time workers can substantially affect aggregate measures of wage growth. For those countries where sufficiently long series were available on aggregate hours worked (Finland, France, Germany, Norway, Sweden, the United States), the wage equations were re-estimated with changes in hourly rather than annual compensation per employee as the dependent variable. In general, there were few qualitative differences in the results of the stability tests. For all countries, the wage equations were also estimated with respect to wage growth in the business sector, *i.e.* excluding the general government sector, and again this resulted in few differences in the results of the stability tests.

ANNEX 1.A

Wage equations: specification and estimation

The general specification of the wage equation which was estimated is:

$$\Delta w_t = a + \alpha\Delta pc_t + (1 - \alpha)\Delta pc_{t-1} - \beta U_t - \gamma\Delta U_t - \lambda(w_{t-1} - pc_{t-1} - x_{t-1}) + \theta(\Delta p_t - \Delta pc_t) + \varepsilon_t$$

where *w* is average compensation per employee; *pc* is the implicit deflator of private consumption; *p* is the GDP deflator; *x* is trend productivity, where productivity is defined as GDP in constant prices divided by total employment and de-trended using the Hodrick-Prescott filter with a smoothing factor of 1000; U is the unemployment rate; and ε is the error term. *w*, *pc*, *p* and *x* are expressed in natural logs, while the unemployment rate is expressed in either level, log or inverse form. Δ refers to the first-difference operator. Expected inflation is proxied by a weighted average of current and lagged inflation; absence of money illusion in the long-run is imposed by constraining the weights to sum to one. Thus the actual equation estimated is:

$$\Delta(w_t - pc_{t-1}) = a + \alpha\Delta\Delta pc_t - \beta U_t - \gamma\Delta U_t - \lambda(w_{t-1} - pc_{t-1} - x_{t-1}) + \theta(\Delta p_t - \Delta pc_t) + \varepsilon_t$$

This specification is similar to the wage equations embedded in the OECD's macroeconomic forecasting and simulation model, INTERLINK. Some additional explanatory variables enter the INTERLINK specifications, such as the external terms of trade and tax variables. Furthermore, the INTERLINK equations for certain countries may include more lags of the explanatory variables, as well as lags of the dependent variable.

The equation was estimated using ordinary least squares. Previous OECD work [Turner *et al.* (1996)] suggests that the results would not be altered substantially if instrumental variable methods were used to estimate the equations in order to allow for a potential problem of simultaneity bias. The estimation period is 1970 to 1995, with the exception of (western) Germany for which data are only available up to 1994. All data are annual.

Starting from the above general specification, country-specific equations were derived by the following steps. The general equation was first estimated for all the 21 countries, and then variables were progressively selected on the basis of their statistical significance, the overall explanatory power of the equation and the degree to which the signs of the coefficients accorded with the predictions of the model. A variable for the tax wedge was also included for all the countries, but it was almost never significant.

In the equations for Australia, Ireland, Sweden and the United Kingdom, a value close to 1 was estimated for the coefficient α. The coefficient was, therefore, restricted to 1, *i.e.* nominal wages are deflated by current prices. For Austria, Greece, Italy, Japan, the Netherlands, New Zealand and the United States, a value of 0 was imposed on α, either because the estimated value of α was close to zero or because of problems of autocorrelation.

The coefficient on the unemployment rate was highly statistically significant in almost all the equations. For Switzerland, the unemployment rate was corrected by the Secretariat to be on a standardised basis for the whole period of estimation. The change-in-unemployment term is included only in the wage equations of Germany, Greece and Italy and has the expected negative sign. The German and Italian results are confirmed by other OECD work [Turner *et al.* (1996)]. While evidence of hysteresis has been found in previous studies for Canada [Fortin (1996)], various specifications of the Canadian wage equation failed to produce a significant result for the change-in-unemployment term.

The error-correction term enters in more than one half of the country-specific wage equations. In the case of Norway, the term was maintained in the preferred equation, even though it was only significant at the 10 per cent level, in conformity with the findings in previous studies which suggest it plays an important role [Johansen (1995); Nymoen (1989)]. Although not included in all the equations, the coefficient of the error-correction term has the expected negative sign for most countries, the exception being the United States, where it was significantly positive. A similar result of a positive coefficient on the error-correction term for the United States has also been obtained by Grubb (1986) and Blanchard and Katz (1997) but not by Turner *et al.* (1996). The wage equation for the United States also includes a term for the first difference in the productivity trend.

The terms-of-trade variable, expressed as the difference between the growth of the private consumption deflator and the growth of the GDP deflator, is included in one third of the 21 countries.

The wage equations of New Zealand and the United Kingdom include a dummy variable, to account for episodes of wage and price freezes and incomes policy, respectively. The dummy variable in the wage equation for New Zealand takes the value 0.5 in 1982, the value of unity in 1983 and 1984, and zero elsewhere. For the United Kingdom, the dummy variable takes the value of unity in 1975, 1978 and 1979, the value 3 in 1976 and 4.5 in 1977, and zero otherwise. Estimated wage equations for France often include a minimum wage variable but this was not included in the estimates reported here.

Table 1.A.1. **Aggregate wage equation estimates**[a]

Dependent variable $\Delta(w_t - pc_{t-1})$

	Independent variables									R^2 adj.	DW
	Constant	U_t	u_t	$1/U_t$	ΔU_t	$\Delta\Delta pc_t$	$w_{t-1} - pc_{t-1} - x_{t-1}$	$\Delta p_t - \Delta pc_t$	Others[b]		
Canada	5.93***	–0.58**				0.62**				0.51	1.37
France	0.07	–0.57***				0.74***	–0.14***			0.94	1.84
Germany[c]	–2.27	–0.71***			–0.43*	0.88***	–0.17***	0.81***		0.94	1.56
Italy	–11.75	–1.34***			–2.38**		–0.49**			0.56	1.67
Japan	7.62***		–15.15***				–0.22**			0.61	1.58
United Kingdom[b, d]	–5.18	–0.20*					–0.19**	0.53**	–1.04***	0.66	2.13
United States[b]	0.18	–0.43**							3.42**	0.45	1.52
Australia[d]	4.66***	–0.51***								0.27	1.50
Austria	–6.12	–0.97***				0.86***	–0.25**	0.75		0.77	1.38
Belgium	2.96	–0.67***				0.61***	–0.14***			0.88	2.00
Denmark	–2.24	–0.57***				0.51***	–0.18**			0.61	1.22
Finland	–4.02		–2.86***			0.85***	–0.29***			0.80	1.34
Greece	6.85***	–0.73**			–2.01*			1.47***		0.57	1.35
Ireland[d]	5.87***	–0.27**						0.48***		0.37	1.84
Netherlands	1.05	–0.93***					–0.15***			0.69	1.31
New Zealand[b]	–8.79**	–0.95***				0.60***	–0.31***		–3.97	0.67	1.63
Norway	–8.90*			12.12**		0.69***	–0.11*			0.59	1.30
Portugal	15.38***	–2.19***				0.56***				0.84	1.28
Spain	1.73	–0.45***				0.63***	–0.20***			0.82	1.40
Sweden[d]	–6.04**			9.34***			–0.09*	0.63***		0.50	1.38
Switzerland	0.91***			0.36***		0.89***		0.67***		0.85	1.22

a) The variables are: *w* is compensation per employee; *pc* is the private consumption deflator; *p* is the GDP deflator; *U* is the unemployment rate; and *x* is labour productivity measured as output per worker de-trended using the Hodrick-Prescott filter with a smoothing factor of 1 000. *, **, *** indicate levels of significance of coefficients of 10, 5 and 1 per cent, respectively. Δ is the first-difference operator and variables in small letters refers to logs. All variables have been multiplied by 100.

b) The wage equations for New Zealand and the United Kingdom include a dummy variable which accounts for wage and price freezes and income policy, respectively. In the equation for the United States the first difference of de-trended productivity is entered.

c) Western Germany only.

d) The dependent variable is $\Delta(w_t - pc_t)$.

Source: Secretariat calculations based on data from the OECD analytical database.

ANNEX 1.B

Definitions and sources of the earnings data in Table 1.5

For all countries, the consumer price index used to deflate the earnings data is taken from OECD *Main Economic Indicators*. The data on compensation per employee are from OECD, *National Accounts 1983-1995,* Vol. 2, and the OECD Analytical Data Base. The definitions and sources of the earnings data for full-time employees are provided below. For each country, it is indicated whether the data by age and sex refer to means or medians.

Australia

Definition: Gross weekly earnings of full-time employees (means).

Source: The data are derived both from a quarterly establishment survey and a household survey (in the form of an annual supplement to the labour force survey). The establishment survey is thought to provide more reliable data but has only limited information on the characteristics of workers. The earnings data for men, women and all workers are taken from the establishment survey as reported in Australian Bureau of Statistics, *Average Weekly Earnings, States and Australia*, ABS catalogue No. 6302.0, various editions. The data for youth and prime-age workers and for low-paid and high-paid workers are based on the household survey as published in *The Labour Force, Australia*, ABS catalogue No. 6203.0 (data for earlier years were published in *Weekly Earnings of Employees (Distribution), Australia*, ABS catalogue No. 6310.0). All data refer to the month of August of each year.

Austria

Definition: Annual average of gross daily earnings, standardised to a monthly basis, of all wage earners and salaried employees, excluding apprentices (medians). The figures include special payments, such as holiday and Christmas bonuses.

Source: Austrian Central Statistical Office, *Statistisches Jahrbuche (*Austrian Statistical Yearbook).

Belgium

Definition: Annual average of gross daily earnings of full-time employees (medians).

Source: Secretariat calculations based on social security data provided by the Institut national d'assurance maladie-invalidité (INAMI) on the distribution of employees by earnings class.

Canada

Definition: Gross annual earnings of full-time, year-round workers (means).

Source: Data supplied by Statistics Canada, based on the *Survey of Consumer Finances*.

Denmark

Definition: Gross annual wages and salaries of full-time, year-round employees (means).

Source: Data supplied by Statistics Denmark.

Finland

Definition: Gross annual earnings of full-time, year-round employees (medians).

Source: Data supplied by Statistics Finland based on the *Income Distribution Survey*.

France

Definition: Net annual earnings of full-time workers, adjusted for annual hours worked to represent full-year equivalent earnings (means). Agricultural and general government workers are excluded.

Source: Alain Bayet and Martine Julhès, *Séries longues sur les salaires*, INSEE Résultats No. 457, series *Emploi – Revenus* No. 105, April 1996. These data are derived from salary records of enterprises as reported in *Déclarations Annuelles des Données Sociales* (DADS).

Germany (western Germany only)

Definition: Gross monthly earnings, including annual bonuses, of full-time workers (including apprentices) (medians).

Source: Secretariat calculations based on the *German Socio-Economic Panel*.

Italy

Definition: Monthly net earnings (obtained by dividing annual earnings by the number of months worked) of all wage and salary workers in their main job (medians).

Source: Data provided by Andrea Brandolini and Paolo Sestito of the Bank of Italy based on the Bank of Italy's *Survey of Household Income and Wealth*.

Japan

Definition: Monthly total earnings, including one-twelfth of annual special cash earnings, of full-time regular employees in establishments with more than nine regular employees (means). Employees in the agriculture, forestry and fisheries sector, in private household services and in the general government sector are also excluded.

Source: Policy Planning and Research Department, Ministry of Labour, *Basic Survey on Wage Structure*, various editions. The data refer to the month of June of each year (plus annual special payments for the preceding calendar year).

Korea

Definition: Monthly total earnings, including one-twelfth of annual special payments, of employees in establishments with more than nine regular employees (means). Employees in the agriculture, forestry and fisheries sector and in the general government sector are also excluded.

Source: Ministry of Labour, *Wage Structure Survey*, as reported in Korea Labor Institute, *The Profile of Korean Human Assets: Labor Statistics 1996,* 1996. The data refer to the month of June of each year (plus annual special payments for the preceding calendar year).

Netherlands

Definition: Annual gross earnings, including occasional payments (overtime, holiday, etc.), of full-year equivalent, full-time employees (means).

Source: Survey of Earnings, as reported in Netherlands Central Bureau of Statistics, *Sociaal-Economische Maandstatistiek*, various editions.

New Zealand

Definition: Gross annual earnings of full-time employees (medians).

Source: Estimates provided by the New Zealand Department of Labour based on data collected in the *Household Economic Survey* administered by Statistics New Zealand.

Sweden

Definition: Gross annual earnings of full-year, full-time employees (means).

Source: Data supplied by Statistics Sweden based on the *Income Distribution Survey*.

United Kingdom (Great Britain only)

Definition: Gross weekly earnings of all full-time employees whose pay was not affected by absence (means).

Source: Data provided by the Office for National Statistics based on the *New Earnings Survey*. The data refer to April of each year.

United States

Definition: Gross usual week earnings of full-time employees (medians).

Source: Unpublished annual average tabulations from the *Current Population Survey* provided by the Bureau of Labor Statistics.

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CHAPTER 2

Earnings mobility: taking a longer run view

A. INTRODUCTION AND MAIN FINDINGS

1. Introduction

Some workers earn more than others and these differences sometimes raise important analytical and policy issues. Sound policy advice requires, however, that earnings differences are appropriately measured and interpreted. Typically, earnings are measured over a year but this snapshot provides an incomplete picture. When their earnings are computed in any given year, most workers are in the midst of an extended career. Their labour market situation can be better understood if information about their past and future earnings is also brought into the picture.

A longer-run view is useful because workers' earnings change over time. Accordingly, and following analysis in the 1996 *Employment Outlook*, earnings *mobility* is the focus in this chapter. Last year's empirical work led to three tentative stylised facts. First, earnings mobility is substantial in all countries; about one half of all workers move at least one quintile *up* or *down* the earnings distribution over a five-year period. Second, the degree of relative mobility seems similar across countries. Countries with higher cross-sectional inequality do not appear to have higher relative earnings mobility, so that comparisons of earnings inequality at a point-in-time may provide a useful indication of the differences in life-time earnings inequality. Finally, the movement into and out of low-paid jobs suggests that low-paid employment cannot be simply characterised either as a stepping-stone into a more stable and higher-paid career or as a permanent trap.

This chapter revisits the last two of these tentative stylised facts in an attempt to pin them down more precisely. The extent to which earnings mobility reduces the earnings inequality observed in a single year is more precisely and rigorously quantified. Similarly, a more complete analysis is undertaken of the incidence, persistence and recurrence of low-paid employment. This chapter also analyses several new issues that emerge when attention shifts from *relative* earnings mobility to *absolute* changes in workers' real earnings. In examining workers' real earnings paths, an attempt is made to differentiate between earnings changes that reflect predictable "career" trajectories, such as the tendency for earnings to rise with age, and more idiosyncratic and potentially unpredictable changes, such as the earnings losses experienced by many displaced workers.

The empirical analysis requires longitudinal data that track individual earnings histories, but they are neither widely available nor easy to use. As a result, the detailed mobility analysis is restricted to the period 1986 to 1991 and just six countries: Denmark, France, Germany, Italy, the United Kingdom and the United States.[1] When possible, however, results for other countries and recent trends in mobility are also discussed, including whether the strong rise since the late 1970s in earnings inequality in several OECD countries has been mitigated by increased earnings mobility.

A difficult issue that arises in any analysis of earnings mobility is how to incorporate workers with different levels of employment intensity in terms of weekly hours worked or continuous versus intermittent employment (a fuller discussion of this issue, as well as a summary of data sources and definitions, is provided in Annex 2.A). As in the 1996 *Employment Outlook*, emphasis is placed on changes in the weekly or monthly earnings of *full-time* wage and salary workers, which can be interpreted as a measure of wage-rate mobility since this measure is approximately standardised for the number of hours worked. Calculations were also performed using the *annual* earnings of full- and part-time workers.[2] In general, the results are similar for the two sets of calculations, but some important exceptions are noted. Part-time workers ideally should be included in the analysis of *wage-rate* mobility, but reliable information on their hours worked, which would be required to calculate a wage rate for them, generally is not available. Indeed, it might also be desirable to include non-employed members of the working-age population in the analysis, particularly those moving between non-employment and employment, but it is very difficult to estimate potential earnings for these workers. Since intermittent workers are of great importance for understanding policy issues related to low-paid employment, workers moving between low pay and "no pay" are briefly analysed for Germany and the United States, for

which the necessary data are available. However, no attempt is made to impute potential earnings for workers in years in which they were not employed.

Earnings mobility is complex because earnings change for many reasons and these changes can have very different implications for economic welfare. This chapter poses different questions about the level and effect of mobility, and each is best addressed using different measures of mobility. One of the conclusions is the importance of specifying exactly what type of mobility is pertinent when assessing policy choices or making international comparisons, and then using the most appropriate measure to address the issue in question.

Section B analyses the extent to which *relative* earnings mobility reduces longer-run inequality. The *quintile* transition probabilities used in the 1996 *Employment Outlook* suggested overall similarity across countries in the extent to which workers at different positions in the earnings distribution in an initial year change positions over the next five years and, hence, tend to have more equal earnings over the entire period than in any single year. The methods adopted this year provide more precise comparisons of cross-country differences in the equalising impact of mobility. The overall reduction in inequality is also decomposed into the share due to changes in the relative earnings of groups of workers who differ by age and other characteristics that affect earnings (between-group mobility), and the share due to changes in the relative earnings of workers with the same characteristics (within-group mobility).

The "dynamics" of low-paid employment, a topic of particular policy importance, is discussed in Section C. The questions addressed include: How large a share of workers in low-paid employment in a single year remain so for an extended period of time? Of those escaping low-paid employment, how many subsequently fall back into it? How much total time do workers spend in low pay? What individual characteristics and events most improve the odds of making a sustained escape from low-paid employment?

Attention shifts to *absolute* changes in workers' real earnings in Section D. Average real earnings growth rates are compared, both across countries and across groups of workers defined by age, education and other characteristics. The large dispersion of individual earnings growth rates around these averages is also analysed. The shares of workers experiencing real earnings declines or very large increases are presented as indicators of earnings volatility, useful for assessing labour market and income support policies. The chapter concludes with a brief summary of results and a discussion of policy implications.

2. Main findings

In all of the countries analysed, relative earnings mobility is substantial and cross-sectional inequality overstates longer-run inequality. Inequality averaged over the entire 1986-1991 period is 4 to 30 per cent lower than in any single year; these estimates understate lifetime mobility because they are restricted to a six-year period. The extent to which inequality is reduced depends on the choice of inequality index, because mobility is not uniformly equalising at all points in the earnings distribution. Country rankings with respect to how much mobility reduces inequality also depend on the inequality index used. Evidence on changes in relative mobility over time is thin, but suggests considerable stability. Life-time earnings inequality has probably risen in the United Kingdom, the United States and, perhaps, in other OECD countries that have seen substantial increases in cross-sectional earnings inequality. Much earnings inequality and mobility occurs among workers with similar characteristics (gender, age and education), rather than between these groups. The importance of within-group mobility may reflect a significant degree of unpredictable volatility in individual earnings.

Chronic low pay is quite common, despite most low-pay spells being short. The decline in the probability of upward mobility as a low-pay spell lengthens, plus *multiple* spells of low pay, are important explanations for this seemingly paradoxical finding. When low pay is defined as less than two-thirds of median earnings, low-paid workers in 1986 averaged from just under two years of low-paid employment over 1986 to 1991 in Denmark, to just over four years in the United Kingdom and the United States. Upward mobility rates are further lowered when workers moving between low pay and no pay are also considered. Which workers are most at risk of low-paid employment varies with the time period considered and the degree of persistence used to define low pay. Youth, not surprisingly, are among the most likely groups to experience at least one year of low pay, but older workers are often more vulnerable to being persistently low paid. Women and workers with low educational attainment are also at high risk of low pay in a single year and are even more heavily represented among the persistently low paid.

Average absolute mobility, measured as the percentage growth in real earnings during 1986-1991, differs markedly across the six countries considered. Average earnings of continuously employed workers grew most strongly in the United Kingdom, followed by Germany and Italy. There is also considerable diversity across groups. In all countries, youths and job changers have above-average earnings gains,

but other patterns vary greatly, *e.g.* the least educated workers had the largest gains in Germany, but the smallest in the United States. Individuals' real earnings paths fan out widely around the average in all countries, but particularly so in the Unites States. The variability across individual workers includes falling real earnings for a significant number, despite the tendency for earnings to rise with experience. The share of workers with real earnings reductions ranged from 6 per cent in Germany to 29 per cent in the United States.

B. EARNINGS MOBILITY AND EARNINGS INEQUALITY

1. Introduction

Although earnings inequality is most easily measured at a point in time, it is also important to analyse earnings differences over a longer period. This perspective is particularly important for assessing the equity effects of policies designed to increase labour and product market flexibility [OECD (1997)]. Some of the policies proposed to encourage more job creation, such as relaxing legislated or negotiated minimum wage standards, appear likely to increase wage dispersion, at least initially. It may not follow, however, that life-time earnings inequality will increase. Such policies may result in more dynamic labour and product markets, in which low-paid workers not only have a greater chance to gain a foothold in the labour market, but also have better opportunities to move up the earnings distribution. The six countries analysed differ considerably in terms of the nature and extent of labour and product market regulations, thereby providing a good test of the "equalising" effects of mobility.

In this section, the extent to which earnings mobility reduces long-run inequality below that measured at a point-in-time is quantified. The overall effect is also decomposed into the share due to changes in the relative earnings of workers who differ by age and other characteristics that affect earnings (called "between-group" mobility) and to changes in the relative earnings of workers with the same characteristics (called "within-group" mobility). Even if the *total* reduction in inequality due to mobility is similar for two countries, the level of earnings insecurity is likely to be higher in the country where within-group mobility is a relatively more important factor, since this form of earning mobility, by its nature, tends to be less predictable.[3]

2. Overall equalisation

The analytical framework developed by Shorrocks (1978) is used to quantify the extent to which earnings mobility reduces inequality measured over several years below that in a single year. Several comments about this methodology are in order (see Annex 2.B for a technical explanation). Most important, these calculations only provide a tentative and incomplete answer to the question posed. Because the available data only cover six years, the full equalising effect of mobility over the working lifetime is not captured. It is understated, as only a modest share of age-related differences in earnings "average out" in such a short period.[4] In another sense the equalising effects of mobility are overstated. Averaging workers' earnings over an extended period assumes that they are able to maintain a living standard based on a complete or near-complete "smoothing" of their earnings, no matter how volatile their earnings paths may be. Because it assumes that a stable earnings path provides the same welfare as a widely and, perhaps, unpredictably fluctuating path with the same average earnings, this is clearly an upper-bound estimate of how much mobility reduces inequality in the standard of living that can be supported out of earnings.[5] It is not possible to assess the quantitative importance of these two factors. The reductions in inequality reported here may, accordingly, be either too high or too low.

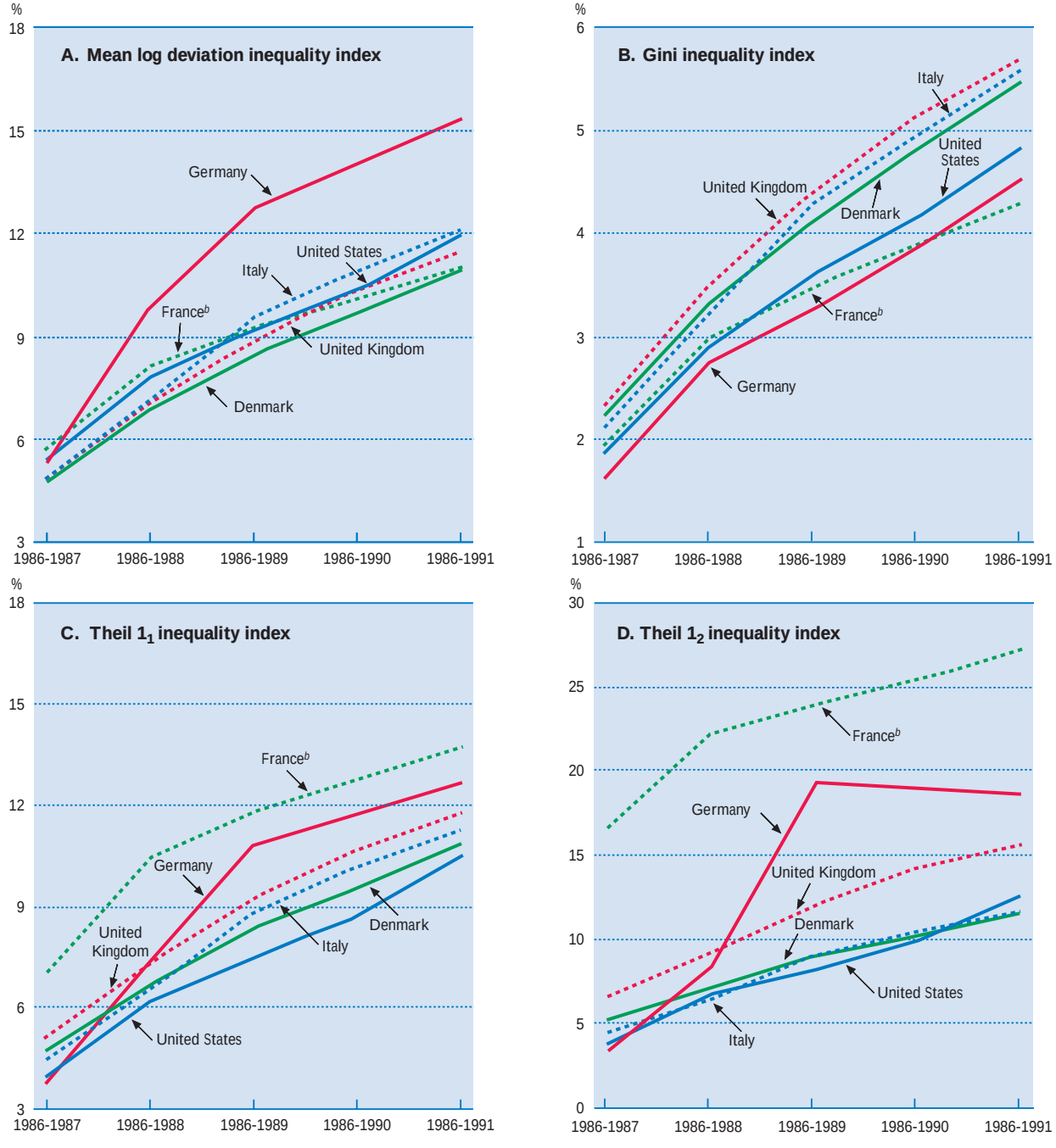
The Shorrocks' estimate is shown in Chart 2.1 as the percentage reduction in inequality when four different indices of earnings inequality are used (for details, see Annex 2.B). A value of zero indicates no equalising effect from mobility because earnings averaged over a multi-year period are no more equally distributed than earnings in a single year. If time-averaged earnings are the same for all workers, mobility is fully equalising and the index equals 100 per cent. In fact, earnings inequality falls as earnings are averaged over longer periods of time. However, at least over a six-year horizon, the overall equalising effect for the weekly/monthly earnings of full-time workers is always less than one-third and most often around 10 per cent. This suggests that a large share of cross-sectional earnings inequality is quite persistent. There is, however, no indication that the full equalising effect of mobility is exhausted within the first six years as relatively little of the earnings differences attributable to age-earnings profiles balance out in such a short period.[6]

A second important finding is that the choice of inequality index matters. The four indices reported in Chart 2.1 differ in the implicit weighting they place on earnings differences at different points in the distribution and mobility need not operate

Chart 2.1.

Percentage reduction in earnings inequality when earnings are averaged over longer periods, 1986-1991[a]

Weekly/monthly earnings of continuously employed full-time workers



a) See Annex 2.B for an explanation of these calculations.
b) Data for 1984-1989.
Source: See Table 2.A.1.

equally at all points. The mean log deviation index is most sensitive to inequality near the bottom of the distribution, the Gini is most sensitive in the middle, the Theil I_2 at the top, and the Theil I_1 at both extremes. For all countries, the Gini index indicates a much weaker equalising effect than the other three indices. It appears, therefore, that mobility smoothes out earnings differences most in the tails of the distribution. Workers in the middle of the distribution tend to have relatively stable earnings, hence, more persistent earnings differences.[7]

Country rankings according to how much mobility reduces earnings inequality depend on the inequality index selected (Table 2.1, Panel A). Although many of these differences are quite small, some are large, and this sensitivity of rankings to the index adopted suggests that there are significant national differences in the way that mobility reduces earnings dispersion, *e.g.* whether the predominant effect is to raise up low earners or to level down high earners. This is most evident for France which has the strongest mobility measured by the Theil I_1 and the Theil I_2 indices, but the least mobility measured by the mean log deviation and Gini indices. French earnings equalisation appears to be strongest at the top of the distribution, suggesting that many top earners in any single year are enjoying a temporary surge in their earnings, but relatively weak in the middle and bottom of the distribution. By contrast, Denmark, Italy and the United States appear to have the weakest equalisation at the top of the distribution. Country comparisons for the mean log deviation and Gini indices indicate relatively strong equalisation at the bottom for Germany and in the middle for the United Kingdom. These comparisons must be interpreted carefully, however, since they may reflect quite specific characteristics of national labour markets or noncomparabilities among the data sources used.[8]

Country rankings also change somewhat when annual earnings for full- and part-time workers are considered (Table 2.1, Panel C). Mobility among this broader group of workers reflects changes in both annual hours worked and wage rates, yet at least 75 per cent of cross-section inequality persists over six years. Including hours variations does significantly increase equalisation at the bottom of the earnings distribution (as reflected by the mean log deviation index), because it is more common for part-time and part-year workers to increase their annual hours strongly than for low-wage workers to enjoy large pay increases. This difference is particularly large for Italy, suggesting that, among workers with employment in six consecutive years, Italian workers are relatively likely to experience one or two years with quite low annual hours, while working a longer work schedule in the other years. However, estimates based on the Gini and Theil I_2 indices are not much changed (with the exception of Theil I_2 index for France, as discussed in note 8). This suggests that equalisation over time in annual hours worked does not contribute much additional equal-

Table 2.1. **Percentage reduction in single-year earnings inequality when earnings are averaged over 1986-1991**[a]

Inequality index	Denmark	France[b]	Germany	Italy	United Kingdom	United States
A. Weekly/monthly earnings of continuously full-time workers						
Mean log deviation	11.0	11.0	15.3	12.1	11.4	11.9
Gini	5.5	4.3	4.5	5.6	5.7	4.8
Theil I_1	10.9	13.7	12.7	11.3	11.8	10.5
Theil I_2	11.7	27.2	18.6	11.6	15.6	12.5
B. Weekly/monthly earnings of continuously full-time workers, aged 25-49 only						
Mean log deviation	11.3	11.1	8.7	11.4	11.1	11.6
Gini	5.6	4.2	3.6	5.3	5.7	4.9
Theil I_1	11.5	14.4	10.2	11.0	11.9	10.3
Theil I_2	12.5	29.7	19.7	11.4	16.6	12.2
C. Annual earnings of all continuously employed workers						
Mean log deviation	19.7	19.0	22.3	26.6	..	19.3
Gini	5.9	5.6	6.2	5.9	..	5.0
Theil I_1	12.9	12.0	15.5	15.9	..	10.9
Theil I_2	10.2	11.8	17.3	11.7	..	10.5

.. Data not available.
a) See Annex 2.B for an explanation of these calculations.
b) Data for 1984-1989.
Source: See Table 2.A.1.

isation in the middle and top of the earnings distribution, presumably because these workers are generally employed full-time and full-year.

This analysis of the equalising effect of mobility substantially enriches the more impressionistic analysis presented in the 1996 *Employment Outlook*. As a result, it appears that a large share of cross-sectional earnings inequality is quite persistent, despite the considerable movement of workers up and down the earnings distribution. This persistence increases the likelihood that earnings inequality, as conventionally measured, may have important economic and social consequences. The analysis also points towards important cross-country differences in mobility patterns. These differences do not suggest that countries with more liberalised labour and product markets, as exemplified by the United Kingdom and the United States, have higher mobility which off-sets their higher levels of cross-sectional inequality. More research will be required, however, to develop a clear picture of national differences in the overall equalising effect of mobility and, critically, their determinants.[9]

3. Group differences in equalisation

The equalising effect of mobility is much stronger for some groups of workers than for others, a fact quite uniform across countries, inequality indices and whether or not part-time workers are included in the sample (Table 2.2). Most dramatically, averaging over six years greatly reduces inequality among workers initially under age 25. The results in Table 2.2 indicate that youths' initial earnings paths are relatively volatile, reflecting frequent changes of employer, industry and occupation. Their earnings trajectories become more stable as they gain work experience and become established in their careers.[10] The equalising effect of mobility is also above-average for women (except in the United Kingdom) and for low-education workers (except in Denmark) and workers changing employers at least once during 1986-1991. Although these differences hold in most of the countries, Germany stands out for having especially strong differences by age, education and job mobility, due in large part to the apprenticeship system associated with its dual system of secondary education. One clear lesson is that a large share of earnings mobility is not due simply to a steady rise in earnings as workers gain experience. There is considerable variation in earnings paths within groups of similar workers.

The distinction between within- and between-group mobility is examined more formally in Table 2.3.[11] The work force is divided into 24 or 32 groups according to gender, age (four groups) and

Table 2.2. **Percentage reduction in single-year earnings inequality when earnings are averaged over 1986-1991, by workers' characteristics**[a]

Weekly/monthly earnings of continuously full-time workers

	Denmark	France[b]	Germany	Italy	United Kingdom	United States
Total	**11.0**	**11.0**	**15.3**	**12.1**	**11.4**	**11.9**
Sex						
Men	11.0	10.6	16.2	11.7	13.6	12.5
Women	18.3	15.4	19.2	16.9	10.7	16.1
Age						
Under 25	25.3	29.3	48.5	30.5	19.5	27.3
25-34	14.9	15.4	12.3	16.3	14.7	14.7
35-49	9.4	9.3	6.8	9.1	9.4	9.4
50-64	6.0	8.4	6.9	9.7	8.8	8.9
Education						
Less than upper secondary	15.1	..	27.5	..	..	18.6
Upper secondary	13.4	..	18.2	..	..	15.9
Non-university tertiary	20.5	..	6.2	..	..	15.7
University degree	10.1	..		..	..	12.2
Change of employer						
No change	6.1	10.2	11.7	9.2	9.9	8.1
At least one change	15.5	15.8	24.5	18.8	13.2	17.3

.. Data not available.
a) Earnings inequality is measured by the mean log deviation index. See Annex 2.B for an explanation of these calculations.
b) Data for 1984-1989.
Source: See Table 2.A.1.

Table 2.3. **Earnings inequality and mobility "within" and "between" groups, 1986-1991**[a]

Weekly/monthly earnings of continuously employed full-time workers

	Earnings averaged over:	Inequality index		Mobility index	
		Total inequality	"Between" share of total inequality[b] (percentage)	Total mobility (percentage)	"Between" share of total mobility[b] (percentage)
Denmark	1986	0.044	38.8	0.0	x
	1986-1987	0.042	40.6	4.8	3.5
	1986-1988	0.040	41.2	6.9	3.8
	1986-1989	0.040	41.5	8.6	4.0
	1986-1990	0.039	41.6	9.8	4.5
	1986-1991	0.039	41.6	11.0	4.5
France	1984	0.116	45.8	0.0	x
	1984-1985	0.110	47.8	5.7	0.5
	1984-1986	0.110	48.1	8.1	0.5
	1984-1987	0.109	48.5	9.2	1.1
	1984-1988	0.108	48.8	10.1	1.4
	1984-1989	0.109	48.9	11.0	1.8
Germany	1986	0.098	44.2	0.0	x
	1986-1987	0.088	45.6	5.2	5.7
	1986-1988	0.079	44.1	9.8	16.2
	1986-1989	0.073	43.3	12.7	15.3
	1986-1990	0.068	42.5	14.0	16.4
	1986-1991	0.065	41.9	15.4	15.8
Italy	1986	0.053	41.7	0.0	x
	1986-1987	0.052	43.9	4.8	3.6
	1986-1988	0.052	44.9	7.2	4.5
	1986-1989	0.052	45.4	9.5	4.6
	1986-1990	0.052	45.6	10.9	5.0
	1986-1991	0.053	45.7	12.1	5.0
United Kingdom	1986	0.103	41.9	0.0	x
	1986-1987	0.097	42.6	4.8	2.3
	1986-1988	0.094	42.0	7.1	4.4
	1986-1989	0.093	41.5	8.9	5.9
	1986-1990	0.091	41.1	10.3	7.1
	1986-1991	0.090	41.1	11.4	8.1
United States	1986	0.185	38.7	0.0	x
	1986-1987	0.170	41.1	5.1	3.0
	1986-1988	0.166	42.1	7.5	3.8
	1986-1989	0.162	43.0	9.0	4.4
	1986-1990	0.162	43.1	10.1	4.7
	1986-1991	0.163	43.1	11.7	5.3

x Not applicable.
a) Earnings inequality is measured using the mean log deviation index. See Annex 2.B for an explanation of these calculations.
b) The total work force is divided into 24 or 32 groups defined by sex (2 groups), age (4 groups) and education/occupation (3 or 4 groups).
Source: See Table 2.A.1.

education/occupation (three or four groups). The second column shows that between 39 and 46 per cent of cross-sectional earnings inequality in 1986 was due to differences in average earnings between the various groups, while the remainder reflected differences within them. The third and fourth columns report the total equalising effect of mobility and the share due to cross-group convergence of average earnings. The between-group mobility effect always accounts for less than 20 per cent of the total effect. In other words, most of the equalising effect of mobility occurs within groups. The predominance of within-group mobility means that much of the year-to-year change in workers' earnings does not reflect smooth increments to their earnings as they acquire more experience and may represent, in part, unpredictable fluctuations that are a source of economic insecurity.

C. PERSISTENCE AND RECURRENCE OF LOW-PAID EMPLOYMENT

1. Introduction

The underlying issues considered in this section are how the incidence and severity of low pay are affected by earnings mobility and what sorts of policies might effectively facilitate upward earnings mobility among low-paid workers. The detailed questions posed include: How large a share of workers in low-paid employment in a single year remains so for an extended period of time? Of those escaping low-paid employment, how many subsequently fall back into such jobs? How many years of low-paid employment do workers accumulate over a multi-year period? Do patterns vary across countries and demographic groups?

The low-paid threshold is defined alternatively as the upper limit of the first quintile of the earnings distribution (the 20th percentile) or as 0.65 times median earnings. The first quintile definition is comparable across counties in the sense that attention is focused on the lowest fifth of all earners in each country. However, it is not comparable because the extent to which these workers' earnings fall short of average earnings varies greatly across countries. Standardising the threshold at 0.65 of median earnings unambiguously identifies those earning significantly less than a typical worker. This threshold produces a different noncomparability, however, which has important implications for low-pay mobility patterns: a far larger share of the work force is classified as low paid in countries with widely dispersed earnings, such as the United States, than in countries with less cross-sectional wage inequality, such as Denmark and Italy. These two threshold definitions are applied using both the weekly or monthly earnings of full-time workers (the proxy wage rate) and the annual earnings of full- and part-time workers.[12]

Both thresholds for low pay are calculated each year using the distribution of earnings across *all* workers in that year, regardless of whether they were continuously employed during 1986-1991. This yields thresholds comparable to those studied in the 1996 *Employment Outlook* and in the cross-sectional literature on low-paid employment [US Bureau of the Census (1992); International Labour Office (1996); Keese and Swaim (1997)]. However, most of the low-pay incidence and persistence measures examined below are calculated *only* for workers continuously employed during 1986-1991, because of the extreme difficulty in determining potential earnings in those years in which a worker was not employed. Since the continuously employed group tends to have higher earnings than intermittent workers (see Annex 2.A), the single-year low-pay incidence rates for this group are lower than they would be if intermittent workers were also included. The low-pay incidence measures reported below can be meaningfully compared with each other, but are not easily compared with incidence measures calculated with cross-sectional data.

The analysis in the 1996 *Employment Outlook* revealed large movements between low-paid jobs and non-employment. Depending on the reasons for these movements, workers who cycle between "no pay" and low pay may be among those of greatest concern to policy makers. In the following analysis, low-pay persistence when intermittent workers are included in the calculations is briefly discussed for Germany and the United States.[13] These results confirm that the border between low-paid employment and non-employment is highly permeable when a multi-year period is considered, and that a full account of low-pay dynamics would have to treat intermittent workers more extensively.

2. Measuring the incidence of low pay

Most often, low-pay patterns are assessed using data for a single year. A longer-run view, incorporating worker mobility, can either increase or decrease the incidence of low pay, depending on whether the emphasis is placed on all workers who were *ever* low paid or only those persistently low paid. Due to the considerable movements into low-paying jobs, the share of continuously employed workers who were in the bottom quintile at any time during 1986-1991 is one and one-half to two times as high as the share in a single year, such as 1986 (Chart 2.2, Panel A).[14] Although many of these spells were short, this larger group may be relevant for assessing the share of the work force at risk of low pay and the hardship that even temporarily low earnings may produce.

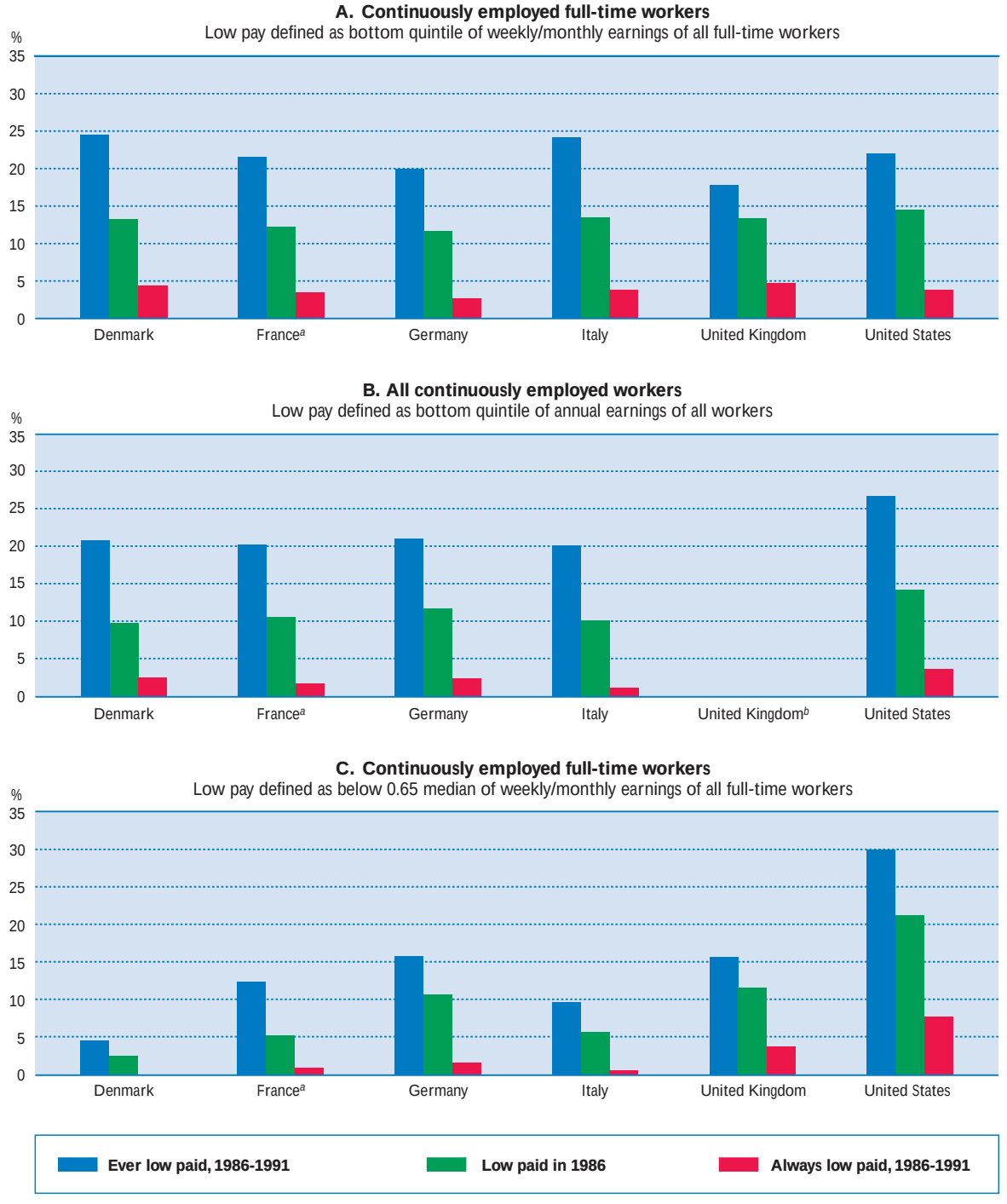
When low-pay "careers", rather than low-pay jobs, are the focus of policy concern, the proportion of continuously employed workers *always* low paid over a multi-year period is a natural incidence measure. The share of continuously low-paid workers over the period 1986-1991 is much lower than the low-paid share in any single year. While the shares of continuously full-time employed workers who were ever in the bottom quintile over the period 1986-1991 ranged from 18 to 24 per cent, the shares who were always low paid ranged from 3 to 5 per cent. Low-pay traps appear to be much less common than low-pay stop-overs. It does not follow, however, that low-paid employment is confined to a single, short spell for most workers who are low paid at any given time (see below).

Cross-country differences in the incidence of low pay using the bottom quintile threshold are modest and not much affected by whether one compares the

Chart 2.2.

Alternative incidence measures for low-paid employment, 1986-1991

Percentage of specified group



a) Data for 1984-1989.
b) Data not available.
Source: See Table 2.A.1.

shares ever low paid, low paid in a single year or always low paid, so long as attention is restricted to the weekly/monthly earnings of continuously employed full-time workers. The picture changes when differences in hours worked are taken into account or the alternative low-pay threshold is used (Chart 2.2, Panels B and C). When the bottom quintile threshold is applied instead to the annual earnings of full- and part-time workers, the picture is largely unchanged, except that the ever low-paid rate jumps 5 percentage points in the United States (Chart 2.2, Panel B). Temporarily low annual hours appear to push workers, who usually earn more, into low-paid employment more often in the United States than in the other countries. Much larger differences emerge when low pay is defined as 0.65 times median earnings (Chart 2.2, Panel C). All three incidence measures are significantly higher in the United States than elsewhere, due the greater dispersion of wages there. Denmark, with its more equal wage distribution, has very low incidence rates.

The relative propensities of different demographic groups to being in low-paid employment (*i.e.* in the bottom quintile) vary depending on whether interest centres on the ever low paid, the low paid in 1986 or the always low paid (Table 2.4, Panel B). Youths are particularly likely to have been low paid at least once during 1986-1991 and at the beginning of the period (when they were youngest). However, they move up the earnings distribution more rapidly than older workers, causing their always low-paid rate to fall relative to older workers. This pattern holds in all of the countries examined, but is particularly strong in Germany: workers aged less than 25 in 1986 were four times as likely as all workers to be low paid in that year, but only a little more than twice as likely to be always low paid during 1986-1991. Workers aged 50-64 in 1986 showed the opposite pattern, being just 0.7 times as likely to be low paid in 1986 as all workers, but nearly twice as likely to be continuously low paid.

Women and less-educated workers have a particularly high risk of being in low-paid jobs, regardless of the measures or time-frame adopted. Like young workers, these groups have above-average risks of being low paid in a single year. Unlike youths, women and less-educated workers also have above-average risks of remaining low paid, so that their risks of being always low paid are higher relative to other workers than their risks of being ever or single-year low paid. The gender pattern is strongest in Germany (women have 2.1 times the average incidence of 1986 low-paid employment, but are 3.4 times more likely to be always low paid) while the education pattern is especially strong in the United States (American workers who have not finished upper secondary schooling were 2.4 times as likely to be low paid in 1986, but 4.3 times as likely to be always low paid).

Of particular importance for targeting policy interventions designed to ameliorate problems resulting from low pay, the demographic mix of low-paid employment varies depending on whether interest centres on the ever low paid, the single-year low paid or the always low paid (Table 2.4, Panel C). Women, older and less-educated workers account for significantly larger shares of always low paid workers than of the ever low paid or low paid in 1986, although the extent of these differences varies considerably across these six countries. Although not reported in Table 2.4, these demographic comparisons look very similar when low pay is instead defined as below 0.65 times median earnings.

3. Time spent in low pay

As is clear from Chart 2.3 (Panel A), in all countries, only a minority of low-paid workers in a given year remain so for an extended, consecutive period of time. Among bottom-quintile workers in 1986, between 60 and 75 per cent move above this low-pay threshold at some point over the next five years. International differences are much more pronounced when low pay is defined as under 0.65 times median earnings: essentially, all Danish and more than 80 per cent of French, German and Italian workers who were low paid in 1986 escaped by 1991; the corresponding rate for the United Kingdom and the United States was 60 per cent. Despite these differences, most workers who are low paid in any selected year move higher in the earnings distribution within a few years, *provided* they remain employed.[15]

Focusing on these cumulative exit rates can exaggerate the extent of upward mobility and understate the amount of time workers spend in low-paid jobs. Despite the high exit rates, the average cumulated time in low pay grows quite steeply when such workers are followed over time (Chart 2.3, Panel B). By 1991, workers who were low paid in 1986 had cumulated an average of three to four years in low pay. It should also be borne in mind that these figures understate total time low paid, since they do not account for low-pay years prior to 1986 or subsequent to 1991. Accounting for intermittent workers would also indicate greater persistence in low pay, as is discussed below.

When low pay is defined as earnings in the bottom quintile, both persistence measures tell much the same story in all six countries. However, low-paid employment is more persistent in the United Kingdom and the United States than elsewhere, when low pay is defined as below 0.65 times median earnings (Chart 2.3). Workers who were low paid in

Table 2.4. **Incidence and distribution of low-paid employment by workers' characteristics, 1986-1991**[a]

Weekly/monthly earnings of continuously employed full-time workers

		Denmark			France[b]			Germany			Italy			United Kingdom			United States		
		Ever low paid, 1986-1991	Low paid in 1986	Always low paid, 1986-1991	Ever low paid, 1984-1989	Low paid in 1984	Always low paid, 1984-1989	Ever low paid, 1986-1991	Low paid in 1986	Always low paid, 1986-1991	Ever low paid, 1986-1991	Low paid in 1986	Always low paid, 1986-1991	Ever low paid, 1986-1991	Low paid in 1986	Always low paid, 1986-1991	Ever low paid, 1986-1991	Low paid in 1986	Always low paid, 1986-1991
A. Incidence (percentage of workers in each category who are low paid)																			
Total		**24.5**	**13.6**	**4.4**	**21.5**	**12.2**	**3.4**	**19.9**	**11.7**	**2.7**	**24.2**	**13.4**	**3.8**	**17.8**	**13.3**	**4.8**	**22.0**	**14.5**	**3.9**
Sex:	Men	12.4	3.9	0.4	17.6	9.7	2.0	13.0	7.4	0.6	17.2	9.0	1.8	10.7	6.7	1.8	16.0	9.3	2.3
	Women	44.9	29.8	11.3	30.1	17.6	6.5	41.1	24.9	9.3	41.2	24.2	8.6	35.8	30.4	12.3	30.9	22.2	6.1
Age:	Under 25	45.0	31.5	6.2	46.3	32.4	6.8	58.1	47.0	6.1	55.5	37.5	9.6	46.4	43.1	9.4	50.9	37.1	5.2
	25-34	26.6	13.2	3.3	22.2	12.6	3.7	15.4	6.5	2.1	21.8	10.1	2.5	10.0	6.6	2.7	20.5	14.6	3.2
	35-49	19.3	10.3	4.6	14.4	6.9	2.3	9.6	2.7	1.1	12.7	5.6	2.1	11.0	6.7	3.5	17.3	9.3	3.7
	50-64	19.6	10.1	5.0	19.8	9.2	3.5	15.9	7.7	5.2	16.8	7.9	3.5	18.3	10.2	6.8	16.5	11.2	5.0
Education:	Less than upper secondary	34.5	18.1	8.0	..	..	..	37.6	23.5	5.8	..	..	..	..	..	..	47.0	35.4	16.4
	Upper secondary	22.7	13.5	3.4	..	..	..	16.3	8.5	2.1	..	..	..	..	..	..	27.9	17.5	4.7
	Non-university tertiary	16.5	8.2	0.5	..	..	..	3.7	3.1	0.0	..	..	..	..	..	..	19.3	12.0	1.0
	University degree	5.4	2.7	0.0	..	..	..				..	..	..	..	..	..	5.4	2.9	0.0
B. Relative incidence (incidence of low-paid employment in each category relative to overall incidence of low-paid employment)																			
Total		**1.0**	**1.0**	**1.0**	**1.0**	**1.0**	**1.0**	**1.0**	**1.0**	**1.0**	**1.0**	**1.0**	**1.0**	**1.0**	**1.0**	**1.0**	**1.0**	**1.0**	**1.0**
Sex:	Men	0.5	0.3	0.1	0.8	0.8	0.6	0.7	0.6	0.2	0.7	0.7	0.5	0.6	0.5	0.4	0.7	0.6	0.6
	Women	1.8	2.2	2.5	1.4	1.4	1.9	2.1	2.1	3.4	1.7	1.8	2.3	2.0	2.3	2.6	1.4	1.5	1.6
Age:	Under 25	1.8	2.3	1.4	2.2	2.7	2.0	2.9	4.0	2.3	2.3	2.8	2.5	2.6	3.2	2.0	2.3	2.6	1.4
	25-34	1.1	1.0	0.7	1.0	1.0	1.1	0.8	0.6	0.8	0.9	0.8	0.7	0.6	0.5	0.6	0.9	1.0	0.8
	35-49	0.8	0.8	1.0	0.7	0.6	0.7	0.5	0.2	0.4	0.5	0.4	0.5	0.6	0.5	0.7	0.8	0.6	1.0
	50-64	0.8	0.7	1.1	0.9	0.8	1.0	0.8	0.7	1.9	0.7	0.6	0.9	1.0	0.8	1.4	0.7	0.8	1.3
Education:	Less than upper secondary	1.4	1.3	1.8	..	..	..	1.9	2.0	2.1	..	..	..	..	..	..	2.1	2.4	4.3
	Upper secondary	0.9	1.0	0.8	..	..	..	0.8	0.7	0.8	..	..	..	..	..	..	1.3	1.2	1.2
	Non-university tertiary	0.7	0.6	0.1	..	..	..	0.2	0.3	0.0	..	..	..	..	..	..	0.9	0.8	0.3
	University degree	0.2	0.2	0.0	..	..	..				..	..	..	..	..	..	0.2	0.2	0.0
C. Distribution (percentage share of low-paid employment in each category)																			
Total		**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
Sex:	Men	31.8	18.3	5.2	56.6	55.3	40.9	49.2	47.5	16.2	50.4	47.5	34.3	43.3	35.8	27.2	43.3	38.1	36.0
	Women	68.2	81.7	94.8	43.4	44.7	59.1	50.8	52.5	83.8	49.6	52.5	65.7	56.7	64.2	72.8	56.7	61.9	64.0
Age:	Under 25	20.7	26.1	15.7	23.9	29.6	22.0	47.9	66.1	37.0	45.1	54.8	49.7	44.1	54.5	33.2	25.0	27.7	14.6
	25-34	33.8	30.2	23.1	38.9	39.0	40.1	20.5	14.9	20.4	27.0	22.6	19.6	14.8	13.1	14.8	34.1	36.9	30.2
	35-49	34.9	33.7	46.3	26.5	22.6	26.2	21.0	10.2	17.1	21.8	17.5	22.7	26.2	21.4	31.4	31.7	25.8	39.1
	50-64	10.7	10.0	14.9	10.7	8.8	11.7	10.7	8.9	25.5	6.1	5.2	8.0	14.9	11.0	20.6	9.2	9.5	16.1
Education	Less than upper secondary	48.9	46.3	62.7	..	..	..	52.1	55.5	58.5	..	..	..	..	..	..	23.3	27.0	46.5
	Upper secondary	44.3	47.6	36.6	..	..	..	44.6	39.7	41.5	..	..	..	..	..	..	49.7	48.1	47.6
	Non-university tertiary	4.3	3.9	0.7	..	..	..	3.3	4.8	0.0	..	..	..	..	..	..	20.0	19.1	5.8
	University degree	2.4	2.2	0.0	..	..	..				..	..	..	..	..	..	7.0	5.8	0.1

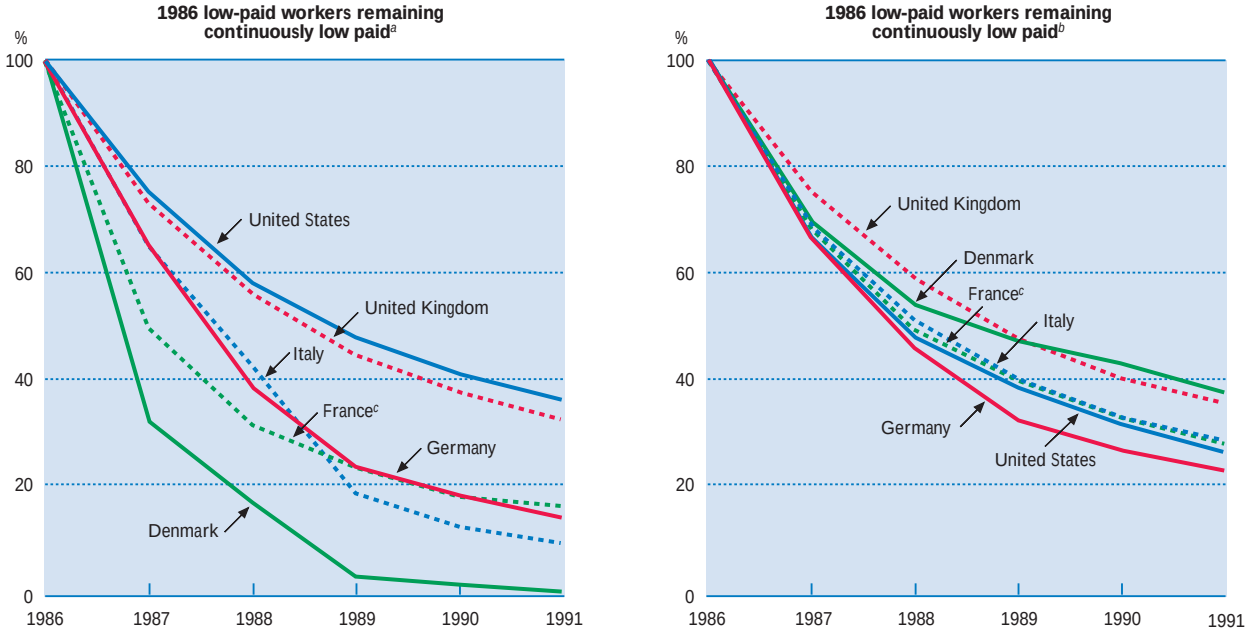
.. Data not available.
a) Low pay defined as bottom quintile of weekly/monthly earnings of all full-time workers.
b) Data for 1984-1989.
Source: See Table 2.A.1.

Chart 2.3.

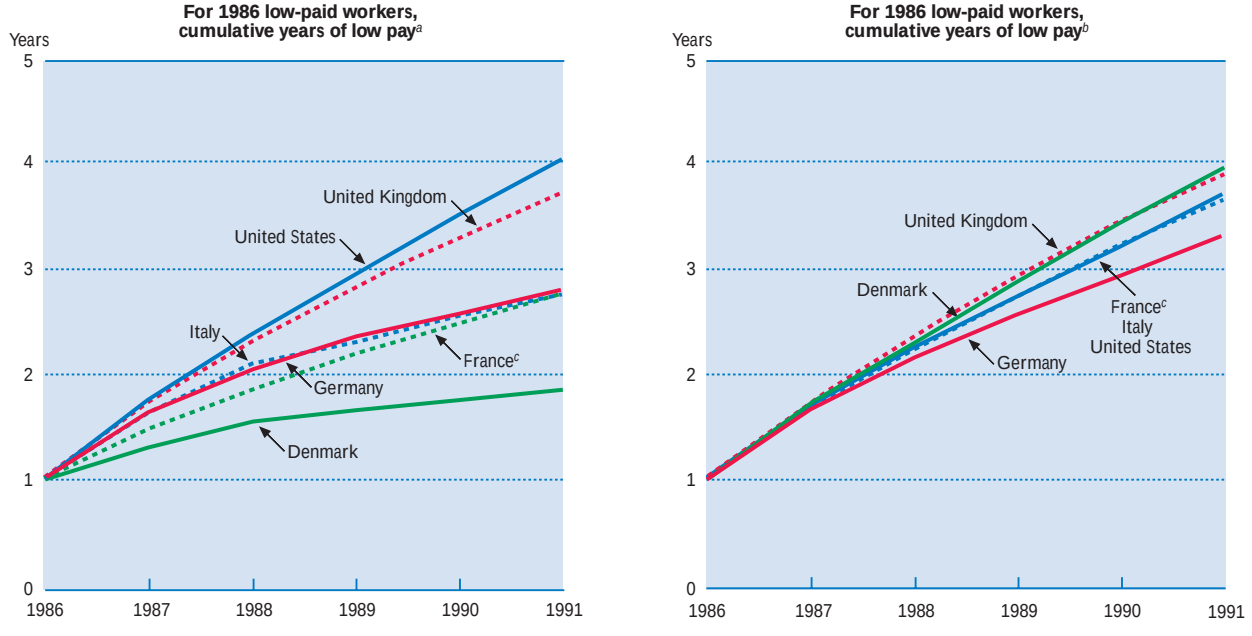
Two views of the persistence of low pay, 1986-1991

Continuously employed full-time workers

A. Persistence rates in low pay



B. Mean years in low pay



a) Low pay defined as below 0.65 median of weekly/monthly earnings of all full-time workers.
b) Low pay defined as bottom quintile of weekly/monthly earnings of all full-time workers.
c) Data for 1984-1989.
Source: See Table 2.A.1.

1986 on average accumulated roughly three additional years of low pay, during the next five years, in these two countries. The labour market conditions or institutions that result in greater low pay persistence are not well understood, but this outcome may be related to the lesser level of regulation in the UK and American economies, including fewer barriers to low-paid employment. These two countries also experienced much greater increases in earnings inequality in recent years than other OECD countries [OECD (1996), Chapter 2], but have had considerable success at lowering unemployment.[16]

Comparing estimates of average cumulated time in low pay shows that women, as well as older and less educated workers, who were low paid at the outset, experience more time in low-paid employment than other workers (Table 2.5). Once in a low-

Table 2.5. **Average cumulative years in low-paid employment during 1986-1991**
Workers who were low paid in 1986

		Denmark	France[a]	Germany	Italy	United Kingdom	United States
A. Continuously employed full-time workers[b]							
Total		**3.8**	**3.7**	**3.3**	**3.7**	**3.9**	**3.7**
Sex:	Men	2.6	3.3	2.4	3.3	3.4	3.4
	Women	4.0	4.1	4.1	4.1	4.2	3.8
Age:	Under 25	3.1	3.4	3.0	3.7	3.3	3.3
	25-34	3.6	3.7	3.1	3.4	4.2	3.5
	35-49	4.3	3.9	4.4	4.0	4.7	4.0
	50-64	4.4	4.1	5.3	4.2	5.2	4.4
Education:	Less than upper secondary	4.4	. .	3.5	. .	. .	4.7
	Upper secondary	3.4	. .	3.3	. .	. .	3.7
	Non-university tertiary	2.7	. .	1.2	. .	. .	3.0
	University degree	1.8	. .		. .	. .	1.8
B. All continuously employed workers[c]							
Total		**3.6**	**2.8**	**3.1**	**2.5**	**. .**	**3.5**
Sex:	Men	2.6	2.3	2.5	2.2	. .	2.7
	Women	3.8	3.3	3.6	2.8	. .	3.7
Age:	Under 25	2.7	2.2	2.5	2.1	. .	2.9
	25-34	2.9	2.5	3.9	2.5	. .	3.3
	35-49	4.0	3.3	4.4	3.2	. .	3.5
	50-64	4.9	4.0	4.3	3.9	. .	4.7
Education:	Less than upper secondary	4.0	. .	3.2	. .	. .	4.3
	Upper secondary	3.4	. .	3.0	. .	. .	3.3
	Non-university tertiary	2.8	. .	3.5	. .	. .	3.2
	University degree	2.1	. .		. .	. .	3.7
C. Continuously employed full-time workers[d]							
Total		**1.8**	**2.8**	**2.8**	**2.8**	**3.8**	**4.1**
Sex:	Men	1.4	2.6	2.2	2.7	3.3	3.8
	Women	1.9	3.1	3.4	2.9	4.0	4.2
Age:	Under 25	1.6	2.6	2.4	2.5	3.1	4.0
	25-34	1.6	2.8	3.0	2.7	4.1	3.9
	35-49	2.2	3.0	3.5	3.5	4.6	4.2
	50-64	2.0	3.3	5.1	3.8	5.1	4.2
Education:	Less than upper secondary	2.1	. .	2.9	. .	. .	4.8
	Upper secondary	1.6	. .	2.9	. .	. .	4.0
	Non-university tertiary	1.0	. .	1.2	. .	. .	3.8
	University degree	1.0	. .		. .	. .	2.7

. . Data not available.
a) Data for 1984-1989.
b) Low pay defined as bottom quintile of weekly/monthly earnings of all full-time workers.
c) Low pay defined as bottom quintile of annual earnings of all workers.
d) Low pay defined as below 0.65 median earnings of weekly/monthly earnings of all full-time workers.
Source: See Table 2.A.1.

paid job, these groups have particular difficulty moving up the earnings distribution, at least in a sustained way. Nonetheless, once in low-paid employment virtually all groups cumulate significant additional low-paid years.

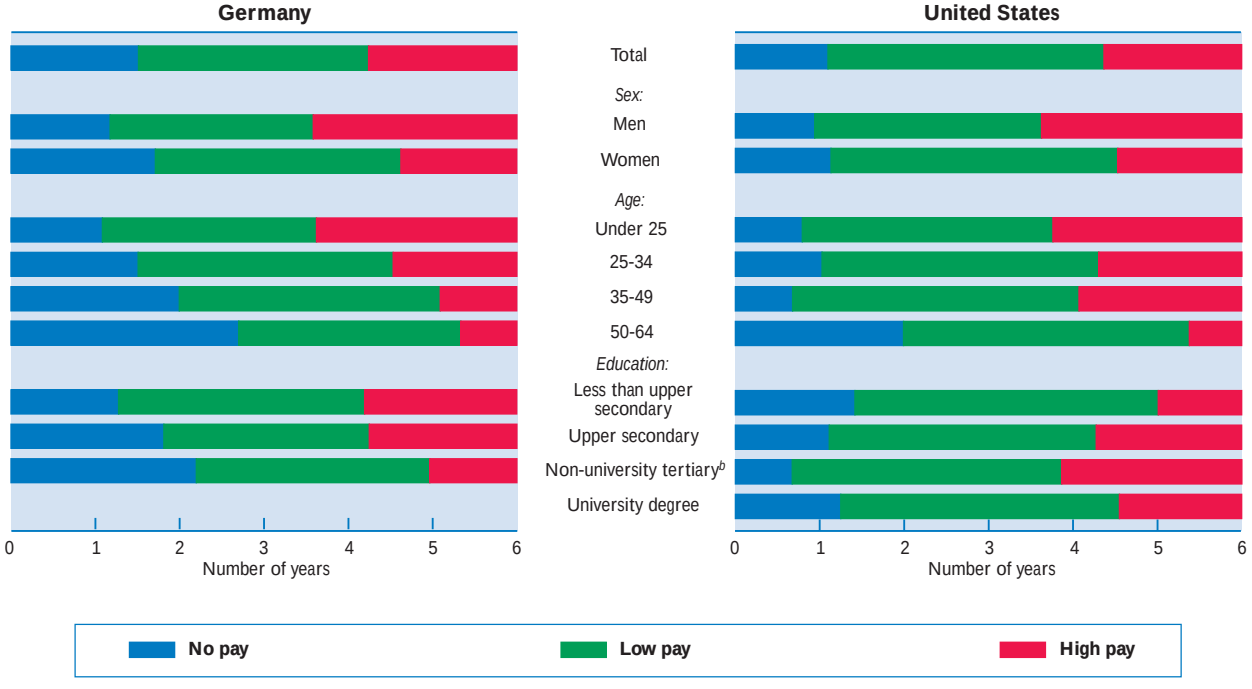
The population of workers who appear vulnerable to becoming chronically low paid is increased when intermittent workers are considered (Chart 2.4). In both Germany and the United States, workers who were in the bottom quintile of annual earnings in 1986 averaged fewer than two years in "high pay" (*i.e.* above the bottom quintile) during 1986-1991. The remainder of the period was divided between "no pay" (one to one and one-half years) and low pay (approximately three years). Women and older workers were particularly likely to exit employment. A full analysis of the flows between low pay and no pay is not attempted here, but incorporating intermittent workers into the analysis strengthens the finding that high mobility among the low paid does not imply that most soon move on to stable, higher paying jobs [OECD (1996), Chapter 3; Eriksson (1997); Stewart and Swaffield (1997)].

It remains to reconcile the two, apparently paradoxical, faces of low pay: few of the 1986 low-paid workers were continuously low paid during 1986-1991, yet, on average, these workers were in low-paid jobs half or more of the time over this period. Two factors are involved in understanding this paradox. First, while many low-pay spells are short, so are many of the escapes into higher earnings (see below). The second factor is more purely mathematical, but contains an important lesson for

Chart 2.4.

Mean years of no pay, low pay and high pay, 1986-1991, by selected characteristics

For all workers who were low paid in 1986[a]



a) Low pay defined as bottom quintile of annual earnings for all workers.
b) All tertiary (including university) education for Germany.
Source: See Table 2.A.1.

Table 2.6. **Distribution and concentration of years spent in low-paid employment, 1986-1991**

Workers with at least one year of low pay

Years spent in low pay	Denmark		France[a]		Germany		Italy		United Kingdom		United States	
	Share of workers[b]	Share of years[c]	Share of workers[b]	Share of years[c]	Share of workers[b]	Share of years[c]	Share of workers[b]	Share of years[c]	Share of workers[b]	Share of years[c]	Share of workers[b]	Share of years[c]
A. Continuously employed full-time workers[d]												
1	35.5	12.0	38.4	13.6	41.7	15.7	32.7	11.1	27.2	8.0	32.8	10.9
2	14.7	10.0	17.2	12.2	15.3	11.5	17.3	11.7	15.1	8.8	17.7	11.7
3	14.3	14.5	10.3	11.0	13.8	15.7	13.4	13.6	10.4	9.2	11.2	11.1
4	7.3	9.9	8.6	12.2	8.2	12.3	11.1	15.0	9.6	11.2	9.4	12.5
5	10.0	16.9	9.5	17.0	7.4	13.9	9.8	16.7	10.8	15.8	11.4	19.0
6	18.1	36.7	16.0	34.0	13.7	30.9	15.7	31.9	26.9	47.1	17.5	34.8
B. All continuously employed workers[e]												
1	39.0	14.9	53.7	25.3	43.1	17.3	55.9	28.2	..	..	35.5	12.8
2	20.4	15.5	19.6	18.5	17.4	14.0	19.9	20.0	..	..	20.3	14.7
3	12.0	13.7	9.2	13.0	15.1	18.2	9.7	14.6	..	..	12.3	13.4
4	9.3	14.1	5.4	10.2	8.0	12.8	5.0	10.1	..	..	9.4	13.5
5	6.1	11.6	3.4	7.9	5.0	10.0	3.5	8.9	..	..	8.8	15.9
6	13.2	30.2	8.8	25.0	11.5	27.7	6.0	18.2	..	..	13.7	29.7

.. Data not available.
a) Data for 1984-1989.
b) Percentage of workers with at least one year of low pay, who were low paid for the specified number of years.
c) Percentage of total years spent in low pay attributable to workers who were low paid for the specified number of years.
d) Low pay defined as bottom quintile of weekly/monthly earnings of all full-time workers.
e) Low pay defined as bottom quintile of annual earnings of all workers.
Source: See Table 2.A.1.

policy. Even though a large share of the workers ever low paid during 1986-1991 experienced only one or two years of low pay, the smaller group who experienced many years of low pay form a disproportionately large share of low-paid workers in any single year and have a large weight in the calculation of the average cumulative time low paid (Table 2.6). For example, French workers with only one or two low-paid years represent 56 per cent of the (continuously employed full-time) workers ever low paid, but they account for only 26 per cent of the total *years* of low-paid employment. Workers with four or more low-paid years account for 34 per cent of workers ever low paid, but 63 per cent of the total years of low-paid employment.[17] Even though low pay is a transitory phenomenon for a majority of workers ever becoming low paid, a large share of the time spent in low-paid jobs is attributable to workers for whom low pay appears to be a chronic condition.[18]

4. Transitions in and out of low pay

A closer inspection of the diverse paths in and out of low pay provides some clues as to the causes and possible cures of chronically low-paid employment. Table 2.7 presents measures of several types of transitions, using the bottom quintile threshold, which offer further insights into the finding that low pay can be either transitory or quite persistent. The first column in each panel traces the exit rate from low pay as a 1986 spell continues.[19] The main message is that workers' prospects of moving up worsen, the longer they have been low paid. Falling exit rates indicate that the distribution of completed durations for low-pay spells is strongly right-skewed: while most spells are quite short, some are very long. This pattern is remarkably similar across the six countries, when low pay is defined as the bottom quintile of weekly/monthly earnings of full-time workers. The only significant difference is that the probabilities of upward mobility are lower in the first two years in the United Kingdom than elsewhere. If the 0.65 times median threshold is used instead, escape rates in the United Kingdom and the United States begin lower than elsewhere and decline more steeply, indicating greater persistence of low-pay spells.

A falling exit rate may be either causal or due to so-called "sorting". If it is causal, the exit rate declines because the experience of low pay progressively undermines a worker's potential to move up in the job market, for example, through the prolonged absence of opportunities to apply or acquire job skills. The sorting explanation assumes that workers entering low pay in a given year already differ in their future earnings prospects, *e.g.* due to differences in education and aptitudes. Over time, the workers with the best prospects move up the earnings ladder, leaving behind a pool of workers with the poorest prospects. For policy purposes, knowing the relative importance of these two factors is of some import. The more strongly being in low-paid employment progressively undermines a workers' future prospects, the more important it becomes that any policy interventions be as prompt as possible. Conversely, if the declining exit rate is mostly due to sorting, it may be an efficient targeting strategy to focus interventions on long-duration low-paid workers. However, it is very difficult to distinguish these two explanations empirically [Heckman and Singer (1984)].

The remaining four columns of Table 2.7 examine paths into, or back into, the bottom quintile. If the entire group of workers above the low-pay threshold in 1986 is considered, relatively few enter *low-paid employment* in any of the subsequent years. However, this is a large group, and the total number of workers falling into low pay is quite high, as indicated by the much greater number of workers ever low paid in 1986-1991 than low paid in 1986. Furthermore, entry rates are two to four times higher among moderate-earning workers (defined as the second quintile in 1986), who begin not too far above the low-pay threshold. This suggests that the division between low- and better-paid workers is not clear cut, once multiple years are considered. There is a continuous gradation in workers' vulnerabilities to spending time in low-paid employment.

The permeability of the border between low- and better-paid employment is especially clear when multiple spells of low pay are considered. Of the low-paid workers in 1986 who moved higher in the earnings distribution in 1987, a significant number were back in low-paid employment in subsequent years. By 1991, this group had accumulated, on average, between 0.6 and 1.0 additional years in low pay.[20] In short, while relatively few of the low-paid workers in 1986 remained continuously low paid during 1986-1991, many of the escapes were transitory. When assessing policies to enhance the upward mobility of low-paid workers, it is, therefore, important to consider the durability of the earnings gains achieved.

The dynamics of low pay are complex and no one measure of *low-pay* incidence or persistence will adequately reflect all of its dimensions. It seems clear, however, that the substantial rates of upward mobility among low-paid workers do not, by themselves, vitiate policy concerns associated with low-paid employment. The large flows in and out of low pay do mean, however, that low-paid workers in a

Table 2.7. **Probabilities of making transitions into and out of low-paid employment, 1986-1991**[a]

Weekly/monthly earnings of continuously employed full-time workers

	Exits	Entries		Repeat spells	
	Exit low pay in the year if have been continuously low paid[b] (percentage)	Low pay in the year if not low pay in 1986[c] (percentage)	Low pay in the year if in second quintile in 1986[c] (percentage)	Low pay in the year if exited low pay in 1987[d] (percentage)	Average post-1987 years of low pay if exited low pay in 1987[e] (years)
Denmark					
1987	33.7	3.0	9.9	0.0	0.0
1988	25.4	3.8	12.1	15.9	0.2
1989	12.8	5.7	18.2	20.3	0.4
1990	12.4	5.9	17.4	27.5	0.6
1991	13.5	6.3	19.2	23.2	0.9
France					
1985	30.3	4.0	13.4	0.0	0.0
1986	29.4	3.1	9.8	16.7	0.2
1987	18.5	3.2	10.2	17.0	0.3
1988	18.2	3.4	10.2	16.6	0.5
1989	14.1	4.4	13.1	16.7	0.7
Germany					
1987	33.1	2.5	11.5	0.0	0.0
1988	30.1	2.6	10.8	14.0	0.1
1989	30.6	2.8	11.3	14.5	0.3
1990	17.9	3.4	12.8	16.2	0.4
1991	12.5	4.6	16.9	16.0	0.6
Italy					
1987	31.6	3.2	9.8	0.0	0.0
1988	25.0	4.2	12.4	17.7	0.2
1989	22.8	5.2	15.0	21.7	0.4
1990	17.2	5.7	15.7	22.6	0.6
1991	13.7	6.5	17.5	23.4	0.9
United Kingdom					
1987	24.7	1.0	4.2	0.0	0.0
1988	21.4	1.3	5.6	13.6	0.1
1989	19.0	1.9	8.0	14.1	0.3
1990	15.4	2.5	10.5	14.9	0.4
1991	11.8	3.3	11.9	15.7	0.6
United States					
1987	33.4	2.9	11.2	0.0	0.0
1988	28.2	2.8	10.0	20.2	0.2
1989	18.9	2.5	8.2	22.7	0.4
1990	18.0	3.4	9.4	22.3	0.7
1991	16.6	3.4	11.1	25.5	0.9

a) Low pay defined as bottom quintile of weekly/monthly earnings of all full-time workers.
b) Probability of earning more than the low-pay threshold in the specified year, conditional on being continuously low paid in earlier years.
c) Probability of earning less than the low-pay threshold in the specified year, conditional on earning more in the initial year.
d) Probability of earning less than the low-pay threshold in the specified year, conditional on exiting low pay between the initial and second years.
e) Average additional years of low pay for workers who exited low pay in the second year.
Source: See Table 2.A.1.

given year have very different prospects and, hence, differ greatly in whether they require public assistance and, if so, what sorts of assistance would be most appropriate. Further study of the individual characteristics, career events and policy interventions that most improve the odds of making a sustained escape from low pay would be especially useful.

D. REAL EARNINGS PATHS OF INDIVIDUAL WORKERS

1. Introduction

In Sections B and C, changes in a worker's earnings were measured *relative* to those of other workers. Relative earnings measures do not, however, provide a reliable indication of how rapidly a worker's real earnings grow over time; the latter, in turn, is a good proxy for growth in living standards. For example, a worker persistently in low pay may nonetheless enjoy a substantial increase in real wages if the wage structure for the entire economy is shifting upwards. Furthermore, workers experiencing the same *relative* mobility in two countries may experience very different *absolute* mobility. A fuller international comparison of mobility is produced when absolute mobility is also considered. This section analyses changes in individual workers' real earnings over the period 1986-1991.

Many factors influence whether, and how strongly, any particular worker's earnings rise or fall. In part, the rate at which a worker's real earnings grow are influenced by macroeconomic conditions, such as national trends in average productivity and real wages. Typical career progressions, as captured by age-earnings profiles, will also be reflected in individual worker's earnings paths. In addition to these common factors, a wide range of factors specific to that worker, such as the onset of a serious health problem, may also be important. A key question addressed by this analysis is the relative importance of these latter factors. In other words, how closely do the earnings histories of individual workers follow the smooth trajectories defined by the common factors? A related question is which worker characteristics (such as gender, age and education) and career events (such as changing employers, industry or occupation) are most strongly associated with whether, and how strongly, real earnings rise or fall?

Before discussing the results, three measurement issues require discussion. First, earnings growth rates are calculated here for fixed samples of continuously employed workers, as they age six years. The average wage growth for this population is conceptually distinct from estimates of national average earnings for (the changing population of) all workers, which are more commonly reported. Second, the growth rates are calculated from three-year averages of workers' earnings taken at both endpoints.[21] This averaging should provide a better picture of longer-run trajectories by smoothing out very short-lived fluctuations in individual earnings. Another advantage of averaging is that it reduces the effect of measurement error in the earnings variable on the calculated earnings growth rates.[22] Finally, consumer price indices were used to convert nominal earnings growth into real earnings growth. If, as is sometimes argued, these deflators make inadequate allowance for quality improvement and a number of other factors [Advisory Commission to Study the Consumer Price Index (1996)], real earnings growth will be understated. Comparisons of growth rates across groups within a country would not be affected, however, and international comparisons would be so only to the extent that the overstatement of inflation differs.

2. The distribution of real earnings growth

Data on the distribution of real earnings growth rates over 1986-1991 are presented in Table 2.8.

Table 2.8. **Dispersion of real earnings growth, 1986-1991**
Weekly/monthly earnings of continuously employed full-time workers

Percentage of workers whose earnings grew[a] by:	Denmark	France[b]	Germany	Italy	United Kingdom	United States
Less than –40%	0.4	2.8	–	0.4	0.4	3.7
–40% to –22%	2.7	4.0	0.3	1.5	1.6	8.1
–22% to –14%	3.9	4.0	1.4	2.4	2.3	5.6
–14% to –5%	10.9	11.4	4.2	5.8	5.4	11.4
–5% to +5%	30.4	28.0	16.3	14.6	12.4	17.4
5% to 16%	26.9	22.2	30.2	26.1	20.9	17.2
16% to 28%	13.0	11.9	23.4	22.3	20.1	11.0
28% to 65%	10.0	10.8	18.5	20.9	27.9	16.9
65% to 112%	1.5	3.1	2.9	4.7	7.1	5.2
More than 112%	0.4	1.7	2.7	1.4	2.0	3.4
Mean growth	**7.2**	**6.2**	**19.3**	**18.1**	**22.4**	**9.3**

a) Negative values indicate that real earnings fell.
b) Data for 1984-1989.
Source: See Table 2.A.1.

Mean growth of real, weekly/monthly earnings of continuously employed full-time workers over this six-year period varied significantly among these six countries, being lowest in Denmark, France and the United States, and highest in the United Kingdom. International comparisons of how rapidly the real earnings of continuing workers rose generate very different rankings than do the comparisons of relative earnings mobility presented last year and in Sections B and C. The United Kingdom provides a good illustration, having medium to low relative mobility, but ranking at the top in tearms of absolute mobility.

The spread of individual earnings growth is wide in all countries, but particularly so in the United Kingdom and the United States (Chart 2.5, Panel A). Although real earnings rose by 9.3 per cent on average in the United States, about 30 per cent of continuously full-time American workers experienced a fall in real earnings of at least 5 per cent. At the other extreme of fortune, one-quarter had an increase greater than 28 per cent. One notable difference between the United States and the other countries is the higher probability of large reductions in real earnings. Earnings fell by more than 14 per cent for about 17 per cent of full-time workers in the United States, 11 per cent of French workers, 7 per cent of Danish workers, 4 per cent of Italian and British workers and under 2 per cent of German workers (Table 2.8). In part, the higher incidence of large earnings declines in the United States and – to a lesser extent – France and Denmark, reflects their lower average earnings growth. A second important factor for the United States is the greater fanning out of individual earnings paths around the average path.

The dispersion is somewhat larger when the annual earnings of full- and part-time workers are considered (Chart 2.5, Panel B). While individual earnings paths vary more widely when variations in annual hours worked are considered along with changes in wage rates, neither average earnings growth nor international comparisons are much affected. The fact that individual earnings growth rates vary substantially is consistent with the widespread belief that even workers in stable jobs may face considerable – and possibly rising – employment and earnings insecurity (see Chapter 5).[23]

3. Group differences in average real earnings growth

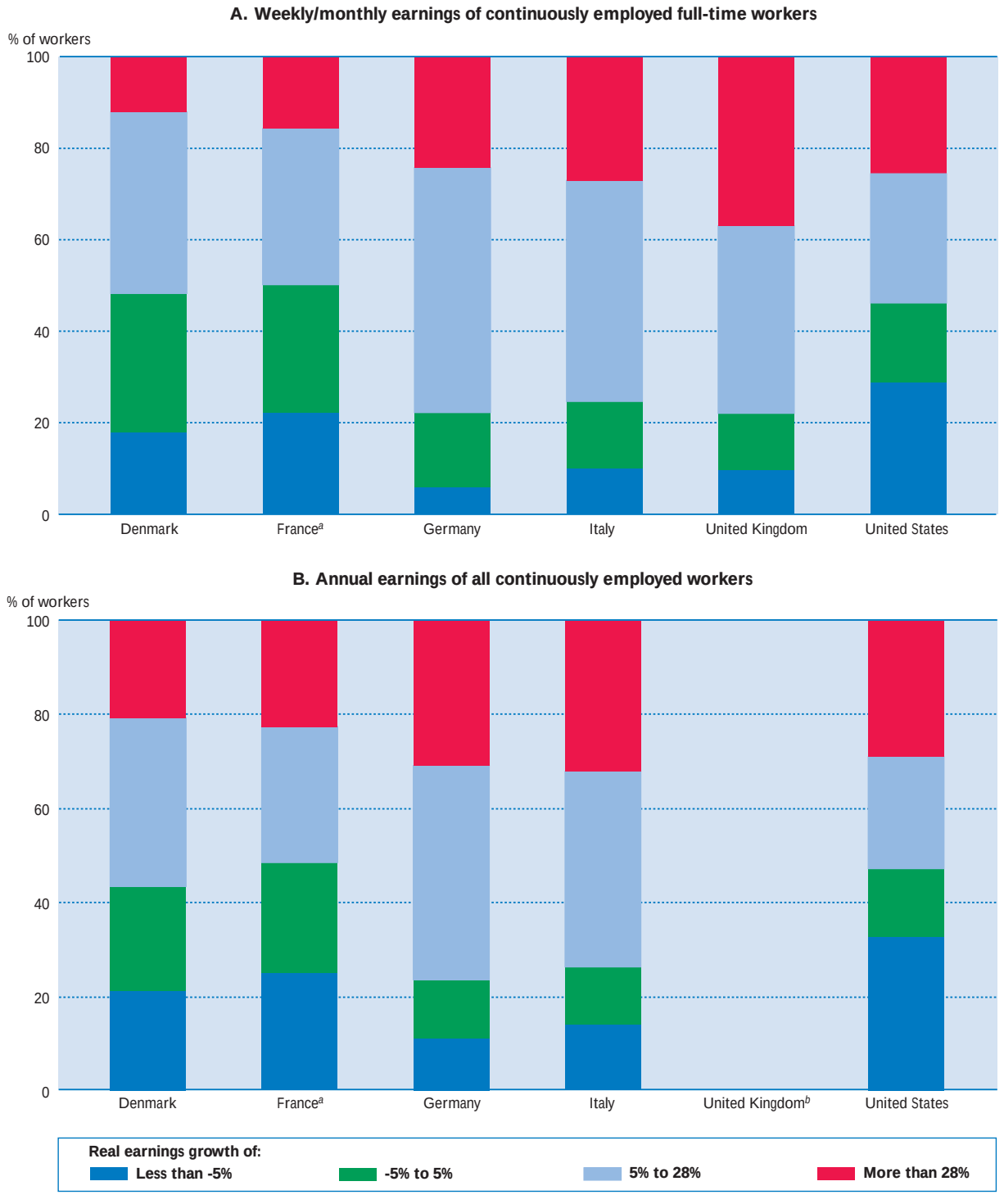
Earnings growth tends to be much higher for some groups of workers than for others (Table 2.9). Young workers just establishing their careers have much more rapid real earnings growth, on average, than do older workers. Growth rates are especially high for German workers under the age of 25 (at the beginning of the period) due to the movement of many such workers from apprenticeship allowances to adult pay schedules. At the other extreme, average growth for American workers aged 50-64 was slightly negative. Earnings growth declined with age in all of the countries, but age differences were less pronounced in Italy than elsewhere. Cross-country differences are more striking by gender and education. The earnings of women grew much more rapidly than those for men in Denmark, the United Kingdom and the United States, and a little more rapidly in Germany, but less rapidly in France and Italy. Better educated workers in Denmark and the United States had much stronger real earnings growth than less educated workers, but earnings growth decreased modestly with educational attainment among German workers.

Do these large differences in earnings growth rates tend to equalise or magnify initial differences in earnings? Consistent with the analysis in Sections B and C, mobility over these six years reduces earnings inequality. When workers are grouped into initial-year earnings quintiles, real earnings grow much more rapidly for workers beginning near the bottom (Table 2.9). For example, over the 1986-1991 period, earnings growth averaged 40 per cent for bottom quintile workers in the United Kingdom, compared with 15 per cent for the top quintile. However, it is important to note that the detailed analysis of relative mobility in Sections B and C indicates that these comparisons can give a misleading impression of how strongly equalising mobility was over the period in questions. The more precise quantification of the equalising effect provided by the Shorrocks method indicates that mobility over 1986-1991 reduced earnings inequality by only between 5 and 30 per cent. Similarly, the analysis of time spent in low-paid employment showed that low-paid jobs cannot be generally characterised as providing a stepping-stone into higher-paid employment.

Another question is whether the international differences in the relationship between worker characteristics and average earnings growth are persistent features of these national labour markets or one-time perturbations of career earnings patterns caused by contemporaneous shifts in the structure of relative wages, such as the rapid increase in educational differentials in the United States during the 1980s. Both factors appear to be important. For example, the very high earnings growth of the youngest age group in Germany reflects the special nature of the school-to-work transition associated with the dual system of secondary education. However, the above-average real wage gains of women in the United Kingdom and the United States, as

Chart 2.5.

Distribution of workers by real earnings growth over 1986-1991



a) Data for 1984-1989.
b) Data not available.
Source: See Table 2.A.1.

Table 2.9. **Mean real earnings growth by workers' characteristics, 1986-1991**

Weekly/monthly earnings of continuously employed full-time workers

	Denmark	France[a]	Germany	Italy	United Kingdom	United States
Sex						
Men	5.5	6.2	18.8	18.1	19.8	6.7
Women	10.3	5.1	20.9	17.9	29.6	13.6
Age						
Under 25	13.8	17.4	55.6	23.8	47.9	27.0
25-34	9.7	8.3	21.4	19.1	26.6	17.7
35-49	6.1	2.0	12.6	15.5	16.3	2.6
50-64	1.8	0.0	7.7	13.8	10.1	–1.0
Education						
Less than upper secondary	4.8	..	21.5	..	..	0.7
Upper secondary	7.2	..	18.9	..	..	7.2
Non-university tertiary	9.1	..	17.1	..	..	8.4
University degree	14.2	..		..	..	16.4
Change of employer						
No change	6.2	5.1	16.9	17.2	18.4	8.1
At least one change	8.3	13.9	34.4	19.7	29.3	11.9
Earnings in 1986[b]						
1st quintile	20.0	12.7	66.3	26.6	40.3	29.5
2nd quintile	9.2	7.3	22.1	14.7	28.0	18.4
3rd quintile	6.5	4.1	16.4	14.5	24.1	8.3
4th quintile	4.5	4.1	13.7	15.5	19.2	3.3
5th quintile	3.9	1.0	12.3	20.0	14.5	0.9
Average earnings over 1986-1991[c]						
1st quintile	5.5	4.1	44.1	19.4	21.0	5.9
2nd quintile	6.5	5.1	20.4	11.3	22.5	11.0
3rd quintile	5.3	5.1	20.1	15.0	21.2	6.2
4th quintile	6.3	6.2	16.2	19.2	22.5	5.9
5th quintile	11.7	9.4	17.0	25.5	24.6	15.0

.. Data not available.
a) Data for 1984-1989.
b) Quintiles defined for weekly/monthly earnings of all full-time workers in 1986.
c) Quintiles defined for weekly/monthly earnings averaged over 1986-1991 for continuously full-time workers.
Source: See Table 2.A.1.

well as of more educated workers in the United States, illustrate how the rising relative wages of these two groups during the 1980s manifested itself as rapid wage growth for these types of workers. These groups did not have above-average earnings growth in countries in which their relative wages were stable or fell a little [OECD (1993); Freeman and Katz (1995); Gottschalk and Smeeding (1997)].[24]

Certain career events and differences in work patterns are also reflected in real earnings growth. A striking uniformity across all of the countries is that workers changing employers at least once over the period experienced more rapid real earnings growth than workers remaining with the same firm. (This relationship is discussed in more detail below). Earnings growth also differed between persistently full-time, full-year workers and those working fewer or more variable hours. In France and Italy, earnings growth was strongest for individuals with the lowest ''employment intensity'', which is an index of annual hours worked over 1986-1991 (Chart 2.6).[25] By contrast, earnings growth was strongest for American workers with the highest levels of employment intensity.

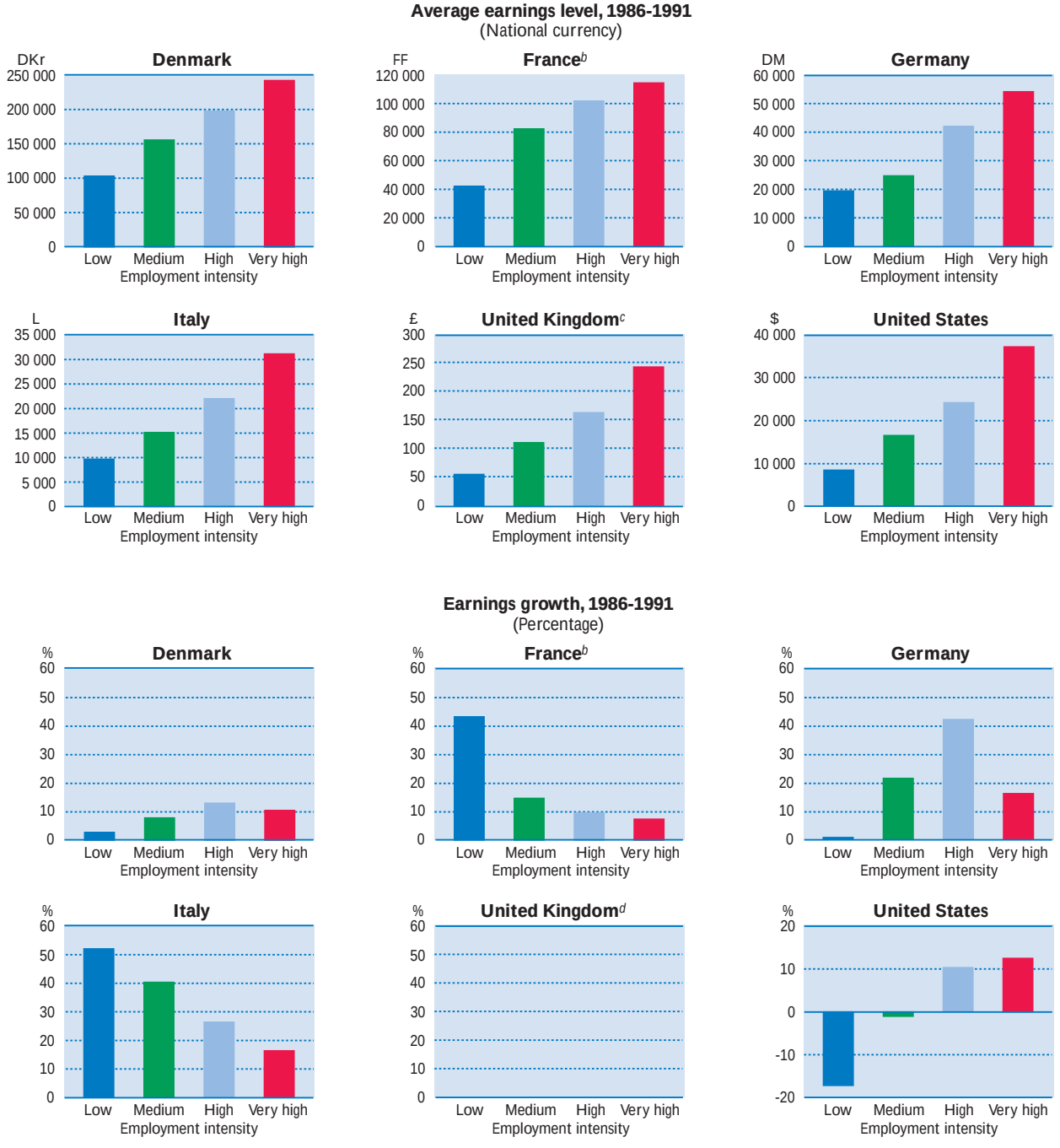
4. Real earnings growth and job change

The positive association noted above, between changing employers and earnings growth, suggests two further questions. First, why do the higher labour turnover rates widely believed to characterise less regulated labour markets, particularly the American labour market, not result in higher earnings mobility? A related and even more difficult question is whether policies to encourage higher labour turnover might provide workers with improved prospects to increase their earnings. Estimates of the proportion of continuously employed workers changing employers, industry or occupation are shown in Table 2.10. These estimates understate labour turnover for the total work force, because

Chart 2.6.

Real earnings and earnings growth by employment intensity, 1986-1991[a]

Annual earnings of all continuously employed workers



a) All earnings are in 1991 currency units. See Annex 2.A for the definition of employment intensity.
b) Data for 1984-1989.
c) Data for weekly earnings.
d) Data not available.
Source: See Table 2.A.1.

Table 2.10. **Average number of years in which workers changed employer, industry or occupation, 1986-1991**

Continuously employed full-time workers

	Denmark	France[a]	Germany	Italy	United Kingdom	United States
Changing[b]						
Employer	1.09	0.6	0.3	0.5	0.6	0.8
Industry	0.30	0.4	0.1	0.2	0.2	0.4
Occupation	0.28	0.6	0.0	0.2	0.4	0.4
Ratio of changes						
Industry/employer	0.28	0.6	0.2	0.3	0.4	0.5
Occupation/employer	0.26	0.9	0.1	0.3	0.7	0.5

a) Data for 1984-1989.
b) Changes defined in terms of workers' main job in each year. Industry and occupation are classified into broad groupings (approximately one-digit).
Source: See Table 2.A.1.

they are calculated using samples of continuously employed full-time workers and, hence, tend to exclude many of the workers who change employers or the type of work that they do (see Annex 2.A).

Labour turnover rates are not uniformly higher in the United States than in Europe. American workers most frequently change broad industrial sector, but change employers less frequently than Danish workers and change occupation less frequently than British and French workers. Germany stands out in this sample of countries for having the lowest turnover rates. German workers are particularly unlikely to change industry and occupation, probably due to the greater investment in and formalisation of specific vocational skills that is associated with the dual system of secondary education.

Although workers changing employers have higher average real earnings growth, it cannot be concluded that greater turnover would also increase upward mobility. The pay-off to turnover among continuously employed workers may greatly overstate the earnings gains from turnover for the entire work force, because many workers for whom changing jobs is most disruptive are omitted from the analysis. For example, displaced workers who experience long spells of unemployment leave, or the labour force, are not accounted for in these estimates.[26] Furthermore, the association of more rapid wage gains with turnover does not, of itself, imply a casual relationship between more job changes and higher earnings growth.

Table 2.11 shows that the propensity of workers to change employers varies quite strongly across groups, in ways that suggest that only certain forms of turnover are likely to result in earnings gains. In all countries, young workers change employers frequently. Less-educated workers also change employers more often than university graduates. With the exception of the United Kingdom, there is a *negative* association between the number of times a worker changed employers between 1986 and 1991 and their average earnings for the entire period (Chart 2.7). This pattern is particularly strong in Italy and the United States and probably reflects, in part, the typically low earnings of youthful and low-education job changers. Overall, these associations suggest caution in concluding that increased turnover should be encouraged on the grounds that it is likely to lead to higher earnings, particularly for adults or highly educated workers. Much of the association between changing employers and more rapid earnings growth appears to be due to youths, who rate high on both measures. This coincidence suggests that moving between employers plays an important role during the initial stages of many careers, but is not a reliable guide to when additional turnover would improve the earnings prospects of more experienced workers. It probably matters a great deal which workers change jobs and under what conditions.

E. CONCLUSIONS

The analysis in this chapter confirms that earnings mobility is one of the defining characteristics of labour markets in OECD countries. When assessing the distribution of the gains from work and their possible implications for policy, a longer run view that incorporates mobility is essential. The analysis presented here highlights several different aspects of mobility, including: the extent to which workers change places in the earnings distribution, thereby lowering long-run inequality below cross-sectional inequality; the dynamics of low-paid employment; and the shape of the real earnings paths traced out by individual workers. These different facets of mobility cannot be reduced to a single measure. Furthermore, international comparisons of earnings mobility vary, depending on which aspect is being emphasised and the details of how it is measured.

Table 2.11. **Relative number of annual changes of employer by workers' characteristics, 1986-1991**

Ratio of average annual changes for the specified group to the average for all continuously employed full-time workers

	Denmark	France[a]	Germany	Italy	United Kingdom	United States
Total	**1.00**	**1.00**	**1.00**	**1.00**	**1.00**	**1.00**
Sex						
Men	1.06	1.06	0.99	1.00	0.95	0.92
Women	0.92	0.89	1.02	0.99	1.08	1.08
Age						
Under 25	2.78	1.55	2.28	1.76	1.72	1.98
25-34	0.98	1.00	1.30	1.04	1.20	1.13
35-49	0.68	0.87	0.49	0.69	0.79	0.79
50-64	0.58	0.82	0.26	0.56	0.56	0.42
Education						
Less than upper secondary	1.17	..	1.19	..	..	0.97
Upper secondary	1.03	..	1.03	..	..	1.01
Non-university tertiary	0.61	..	0.56	..	..	1.19
University degree	0.67	..		..	..	0.81
By earnings level (average over 1986-1991)[b]						
1st quintile	1.54	1.72	1.43	1.99	1.02	1.56
2nd quintile	1.13	0.86	1.33	1.09	1.05	1.32
3rd quintile	0.87	0.68	0.81	0.80	0.89	0.97
4th quintile	0.75	0.69	0.82	0.61	0.94	0.62
5th quintile	0.71	1.06	0.61	0.52	1.06	0.53

.. Data not available.
a) Data for 1984-1989.
b) Quintiles defined for weekly/monthly earnings averaged over 1986-1991 for continuously full-time workers.
Source: See Table 2.A.1.

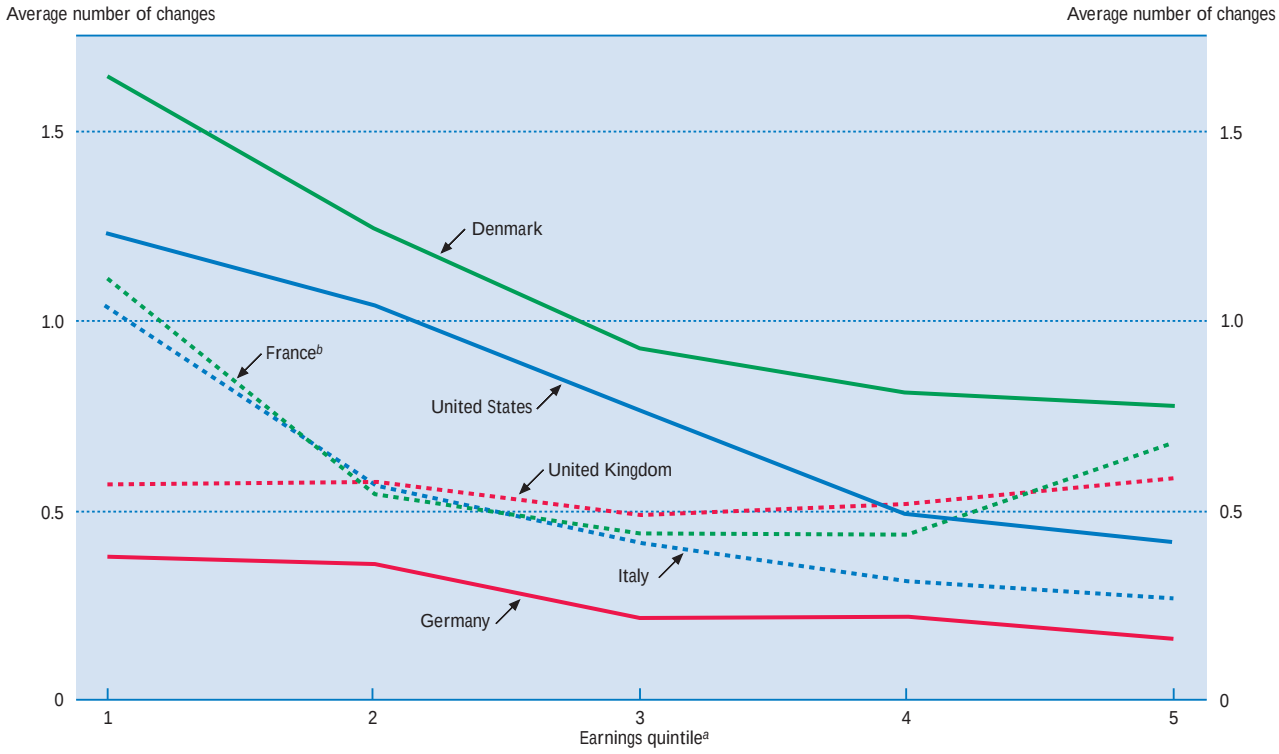
Several cross-cutting themes emerge from this diverse analysis. First, labour market policies need to take account of earnings mobility. For example, measures of the persistence and recurrence of low-paid employment imply that programmes to assist chronically low-paid workers should target women, older and less-educated workers more strongly than programmes intended to help workers experiencing temporarily low earnings. Second, countries with more deregulated labour and product markets do not appear to have higher relative mobility, nor do low-paid workers in these economies experience more upward mobility. Equity concerns about increased earnings inequality, which several continental European governments have identified as an important barrier to implementing some of the policy recommendations of the OECD *Jobs Strategy* [OECD (1997)], cannot be dismissed simply with an appeal to increased labour mobility. Supplementary policies to ameliorate the potential negative effects of any expansion in low-paid employment (*e.g.* employment-conditional benefits) or alternative strategies for reducing unemployment (*e.g.* targeted wage subsidies or payroll tax reductions) merit additional attention. Finally, mobility is a double-edged sword. Some of the earnings inequality in a single year is equalised over a longer time horizon and, hence, may not be a source of important differences in living standards. However, mobility sometimes takes the form of large fluctuations in real earnings that could result in economic insecurity.

The equalising effect of mobility is important, but should not be exaggerated. Perhaps of greatest importance for policy, the substantial rates of upward mobility among low-paid workers do not, by themselves, vitiate most of the concerns associated with low-paid employment. The large flows in and out of low pay do mean, however, that low-paid workers in a given year have very different prospects and, hence, differ greatly in whether they require public assistance and, if so, what sort of assistance would be most appropriate. Further study of the individual characteristics, career events and policy interventions that most improve the odds of making a *sustained* escape from low pay would be especially useful.

Further analysis of earnings volatility, and the extent to which it imperils family living standards, would also be useful. Significant shares of workers experience absolute declines or large increases in

Chart 2.7.

Average number of years in which workers changed main employer by level of earnings, 1986-1991
All continuously employed workers



a) Earnings averaged over the period.
b) Data for 1984-1989.
Source: See Table 2.A.1.

real earnings, suggesting considerable earnings insecurity, as does the finding that much earnings mobility occurs *among* similar workers (according to sex, age and education). However, the analysis presented here is descriptive and additional research will be required to better delineate the determinants of individual earnings fluctuations and their implications for welfare and policy.

Notes

1. In this chapter, Germany always refers to the former West Germany.
2. Changes in annual earnings are interesting in their own right, but they may not provide as good an indication of changes in workers' potential earnings if – as seems likely – the lower earnings associated with part-time employment are due in substantial degree to voluntary labour supply choices.
3. It is very difficult to differentiate between earnings fluctuations that can be "smoothed" and have little or no adverse impact on consumption from those causing economic insecurity. No doubt, some of the within-group mobility, which appears as idiosyncratic variations in the decomposition, reflects either predictable or insurable earnings variations.
4. Even though all of the workers in the sample gain six years of work experience over 1986-1991, some of the cross-sectional earnings inequality due to age differences in earnings is equalised, because wages rise much more quickly for the youngest age group than for the older groups, particular those aged 50 to 64 in 1986. Much longer panels of data would be required to account fully for ageing. However, some earnings differences associated with age in a cross-section might persist over entire working lives, since different age cohorts may fare differently.
5. The considerable empirical success of the permanent-income model of consumption indicates that families are able to smooth their incomes to a considerable degree. However, the "over-responsiveness" of consumption to changes in income, relative to the basic model's predictions, indicates that smoothing is incomplete, perhaps due to the difficulty of predicting future incomes or liquidity constraints that make it difficult to tap future income growth before it is actually received [Hall (1978); Flavin (1981)].
6. The single exception is Germany using the Theil I_2 inequality index, where the full equalising effect is reached in three years. More detailed analysis indicates that the "smoothing" effect of averaging earnings over more years was off-set by rising cross-sectional inequality as a small number of men, initially aged 25 to 34, achieved high earnings levels. This probably reflects an idiosyncrasy of this particular sample, rather than a general characteristic of the German labour market. Studies using longer panels typically find that most of the equalisation occurs in the first four to six years [Buchinsky and Hunt (1996); Finnie (1997)]. However, they also understate the full effect of age, since they only examine earnings mobility during years in which the careers of workers from different age cohorts overlap.
7. In a comparison of Germany and the United States, Burkhauser and Poupore (1997) also find lower mobility using the Gini, rather than alternative indices, but do not find that national rankings are affected by the choice of inequality index. Some of the apparently higher earnings mobility near the top and the bottom of the distribution could reflect measurement errors. Large and transitory errors would place an individual at one or the other extreme in the year in which of the error was recorded. In several of the datasets, a small number of outlier observations, which appeared to reflect large measurement errors, were omitted from the sample.
8. An example of the former is provided by the strong upward mobility at the bottom of the German earnings distribution. This is due to the importance of the low wages (and subsequent strong wage growth) received by apprentices when they first enter the labour market. When the sample is confined to prime-aged workers (Table 2.1, Panel B), Germany has the lowest equalisation from mobility measured by the mean log deviation index. Although no direct evidence is available, the relatively high mobility at the top of the French earnings distribution may reflect measurement error in the data, rather than true mobility. The French annual earnings data appear to be quite accurate, but their conversion into a monthly wage rate is somewhat imprecise for workers with multiple jobs. Measurement errors introduced by this calculation may account for the apparently high level of equalisation at the top of the French wage rate distribution. French mobility estimates for the Theil I_2 indices drop sharply when annual earnings are used (Table 2.1, Panel C).
9. Little is known about whether mobility in recent years is higher or lower than previously, but some limited evidence suggests considerable stability. This question is particularly pertinent for countries that have experienced a recent increase in cross-sectional earnings inequality. Several studies for Canada, Finland, the United Kingdom and the United States have concluded that the recent rise in earnings dispersion within a single year has not been offset by greater relative mobility [Gottschalk and Moffitt (1994); Gittleman and Joyce (1995, 1996); Buchinsky and Hunt (1996); Morrissette (1996); Dickens (1997); Finnie (1997); Eriksson (1997)].
10. This within-group youth effect is distinct from the better known between-group age effect, *i.e.* the tendency for young workers to gain ground on older workers, due to their typically more rapid earnings growth.
11. This decomposition can only be computed for the mean log deviation inequality index. Results are reported for the weekly/monthly earnings of continuously full-time employed workers, but qualitatively

similar results were obtained using annual earnings of full- and part-time workers.

12. From a policy perspective, the definition of low pay as below 0.65 times median earnings is probably more salient than the bottom quintile, but this definition produces quite small samples of low-paid workers in several countries, which may not yield as precise estimates of mobility patterns. A third approach to defining a low-pay threshold would be to set a common absolute (*e.g.* fixed purchasing power) threshold for all countries. The construction of comparable absolute thresholds is complex and is not attempted here. See Keese and Swaim (1997) for a comparison of absolute and relative thresholds.
13. Intermittent workers are difficult or impossible to track in the longitudinal datasets used for most of the countries studied in this chapter.
14. As was explained above, the exclusion of intermittent workers from the sample explains why less than 20 per cent of the workers fall in the first quintile of the earnings distribution in 1986, in Chart 2.2.
15. Chart 2.3 reports escape rates from low weekly/monthly earnings of continuously employed full-time workers. Results are similar when annual earnings of all continuously employed workers are used instead.
16. The United Kingdom has also had strong gains in average earnings, but weak employment growth. The situation was reversed in the United States.
17. Qualitatively similar results obtain for the other countries and for the annual earnings of all workers.
18. This finding is very similar to that found in an earlier literature about the distribution of time spent unemployed [Clark and Summers (1979)].
19. In the statistical literature, this is referred to as "the hazard rate". It is calculated as the conditional probability of exiting low pay in year *t*, given that the worker was low paid continuously from 1986 to year t-1.
20. Cross-country differences in the average accumulation of repeat spells are greater when low pay is defined as less than 0.65 times median earnings, ranging 0.3 years in Denmark and Italy to 0.9 in the United States.
21. That is, the average of earnings over 1985-1987 was used as the starting wage and the average over 1990-1992 as the ending wage.
22. Westergard-Nielsen (1989), Hill (1992), Atkinson, Bourguignon and Morrison (1992) and Bound, Brown, Duncan and Rodgers (1994) discuss measurement error in longitudinal datasets.
23. For evidence that the dispersion of individual growth rates and the risk of significant declines in real earnings was higher during the 1980s than the 1970s in Canada and the United States, see Morrisette (1996), Gottschalk and Moffitt (1994) and Rose (1994, 1995).
24. Whether there was an overall trend toward higher or low earnings inequality is reflected in the association between individual earnings growth rates and their earnings averaged over the full 1986-1991 period. In Germany, cross-sectional inequality fell a little during this period, consistent with earnings growth being higher for workers whose time-averaged earnings were lowest (*i.e.* the lowest growth trajectories tended to slope more steeply upwards). The association between earnings averaged over this period and earnings growth is somewhat erratic in other countries, but there is some indication that gains were strongest at the top of the distribution.
25. Everywhere, and virtually by definition, the level of annual earnings rises with employment intensity. See Annex 2.A for a fuller description of the employment intensity index.
26. Among displaced workers, those experiencing protracted unemployment also have the largest earnings losses once re-employed [Podgursky and Swaim (1987)].

ANNEX 2.A

Data sources, sample construction and data definitions for the longitudinal analysis

1. Sources and representativeness of data on earnings histories

An overview of the data sources used in this chapter is provided in Table 2.A.1. Earnings mobility is analysed over the period 1986-1991, with the sole exception of France, where the data refer to 1984-1989. Business-cycle conditions, which affect earnings mobility, were broadly similar for these countries and years.

The use of longitudinal data raises a number of special data quality concerns that were discussed in the 1996 *Employment Outlook*. In one important respect, these concerns are heightened in the analysis presented in this chapter. Last year, the analysis emphasised comparisons of earnings in 1986 with earnings in 1991. Because many details of an earnings history are lost if only the start and end points are examined, this year the focus has shifted to tracking earnings over the full 1986-1991 period. This provides a more detailed view of earnings histories, but also requires that attention be largely restricted to individuals for whom a continuous earnings history is available, raising the issue of the extent to which such a sample is representative of the overall work force.

For a variety of reasons, some of the individuals in a panel dataset in one year will be lost from the sample over the succeeding year. Such sample attrition can introduce biases if no correction is made for any resulting change in the representativeness of the remaining sample. However, sample attrition is probably only slightly more severe for the analysis in this chapter than for the snapshot measures reported in the 1996 chapter. Only a small number of individuals included in both the 1986 and 1991 samples are missing in one or more of the intervening years and, hence, fall out of the new analysis. The collectors of the German and United States data provide sophisticated probability weights to correct for sample attrition bias that are used in all of the calculations reported here. The other datasets lack such weights, but are probably less vulnerable to this problem since they are collected from administrative records rather than household interviews.

A second form of sample restriction, which is economic rather than statistical, is much more strongly affected by following workers over a successive six-year period. This generally requires that analysis be restricted to individuals employed in *every* year. The exclusion of "intermittent" workers means that great care must be taken in interpreting the results. Intermittent workers may be particularly salient for some of the policy questions related to earnings mobility, especially those relating to low-paid employment. For this reason, the core analysis of time spent in low pay among continuous workers is supplemented by a parallel analysis incorporating data on intermittent workers. However, this supplementary analysis is restricted to Germany and the United States.

Table 2.A.2 provides several measures of the extent and implications of sample attrition and the exclusion of intermittent workers from the sample. Sample sizes fall quite dramatically. The number of workers observed to be continuously employed over 1986-1991 was between 52 and 68 per cent of the number observed in employment in any single year. Attrition was moderately higher for full-time employment, since some workers move between full- and part-time jobs. Continuous workers also earn more than intermittent workers. The differences in earnings between continuous and intermittent workers are largest at the bottom of the earnings distribution and for the annual measure of earnings, which reflects differences in hours worked as well as wage rates. Chart 2.A.1 indicates that, in all countries, half or more of the workers in the continuously employed sample worked full-time and full-year schedules throughout 1986-1991 ("very high" employment intensity). However, even in this sample significant shares of women, low-educated and low-earning workers had lower levels of employment intensity, particularly in Denmark (Table 2.A.3).

2. Data definitions

Mobility is examined in terms of two measures of earnings. As in the 1996 chapter, the emphasis is on a wage-rate estimate, namely, the weekly or monthly earnings of full-time workers. This measure is intended to control for differences in working hours and to provide an indication of earnings potential and how it varies over a career. An important limitation of this measure is that it restricts attention to full-time workers. The exclusion of part-time workers is particularly troublesome when low-paid employment is analysed, but in many of the data sources it is not possible to calculate an accurate wage rate for them. Accordingly, a second earnings measure, the *annual* earnings of both full-and part-time workers, is also examined. Differences in annual earnings, whether across individuals or across time for a given worker, reflect both changes in wage rates and in hours worked. The inclusion of differences in hours worked is of interest, but

Table 2.A.1. **Overview of longitudinal datasets used in earnings mobility analysis**

	Source of data	Type of data	Main groups of wage and salary workers excluded	Data on the non-employed	Earnings concept[a]
Denmark	Data from the Danish Longitudinal Database (DLD), supplied by Niels Westergard-Nielsen and Paul Bingley, Centre for Labour Market and Social Research, Aarhus Business School.	Administrative	–	Yes	Gross weekly earnings
France	Data from Déclarations Annuelles des Données Sociales (DADS), supplied by Yves Guillotin and Alain Bigard, Groupe d'Analyse des Itinéraires et Niveaux Salariaux (GAINS), Université du Maine.	Administrative	General government	No	Net monthly earnings
Germany	Secretariat calculations based on data from the German Socio-Economic Panel (GSOEP).	Household survey	–	Yes	Gross monthly earnings
Italy	Data from the Instituto Nazionale de Previdenza Sociale Dataset (INPSD), supplied by Marco Novarese, Riccardo Revelli and Claudia Villosio, Ricerche e Progetti, Torino.	Administrative	General government	No	Gross monthly earnings
United Kingdom	Data from the New Earnings Survey Panel Dataset (NESPD), supplied by Peter Elias and Abigail McKnight, Warwick University.	Establishment survey (sampled from administrative data)	Very low earners	No	Gross weekly earnings
United States	Secretariat calculations based on data from the Panel Study of Income Dynamics (PSID).	Household survey	–	Yes	Gross weekly earnings

a) This column reports the earnings measure used for samples of full-time workers as a proxy for a wage rate. For all countries except for the United Kingdom, gross annual earnings are also analysed for full-time and part-time workers.

Table 2.A.2. **Earnings levels and sample sizes for the mobility analysis, 1986-1991**

A. Weekly/monthly earnings of full-time workers[a] (1991 prices in national currency)

	Average of single-year values, 1986-1991				Earnings averaged over 1986-1991 for continuously full-time subsample			
	D1	D5	D9	Sample size	D1	D5	D9	Sample size
Denmark	3 041	4 043	6 195	5 273	3 331	4 233	6 449	3 023
France[b]	4 652	7 259	14 274	92 365	5 491	8 022	15 234	45 779
Germany	1 860	3 643	6 225	3 796	2 733	3 995	6 564	1 666
Italy	1 445	2 118	3 428	111 852	1 677	2 290	3 622	56 605
United Kingdom	131	236	431	125 326	162	272	453	42 536
United States	223	549	1 168	5 867	310	634	1 206	3 179

B. Annual earnings of full-time and part-time workers[a] (1991 prices in national currency)

	Average of single-year values, 1986-1991				Earnings averaged over 1986-1991 for continuously employed subsample			
	D1	D5	D9	Sample size	D1	D5	D9	Sample size
Denmark	79 101	174 012	281 267	8 242	116 650	186 823	294 716	5 639
France[b]	16 866	75 873	153 979	117 467	52 288	88 688	171 861	66 349
Germany	9 528	38 851	70 253	4 842	22 807	43 666	72 801	2 670
Italy	4 997	21 866	38 607	115 697	14 636	25 182	41 818	59 989
United Kingdom	..	..	..	..	..	..	..	..
United States	4 374	21 683	51 118	7 114	9 269	25 046	53 507	4 483

.. Data not available.
a) D1, D5 and D9 denote the 10th, 50th (median) and 90th percentiles of the earnings distribution, respectively.
b) Data for 1984-1989.
Source: See Table 2.A.1.

complicates interpretation of the results. Differences in earnings opportunities may now be confounded with choices to work fewer weekly hours than the national standard for full-time employment or to work only part of the year.

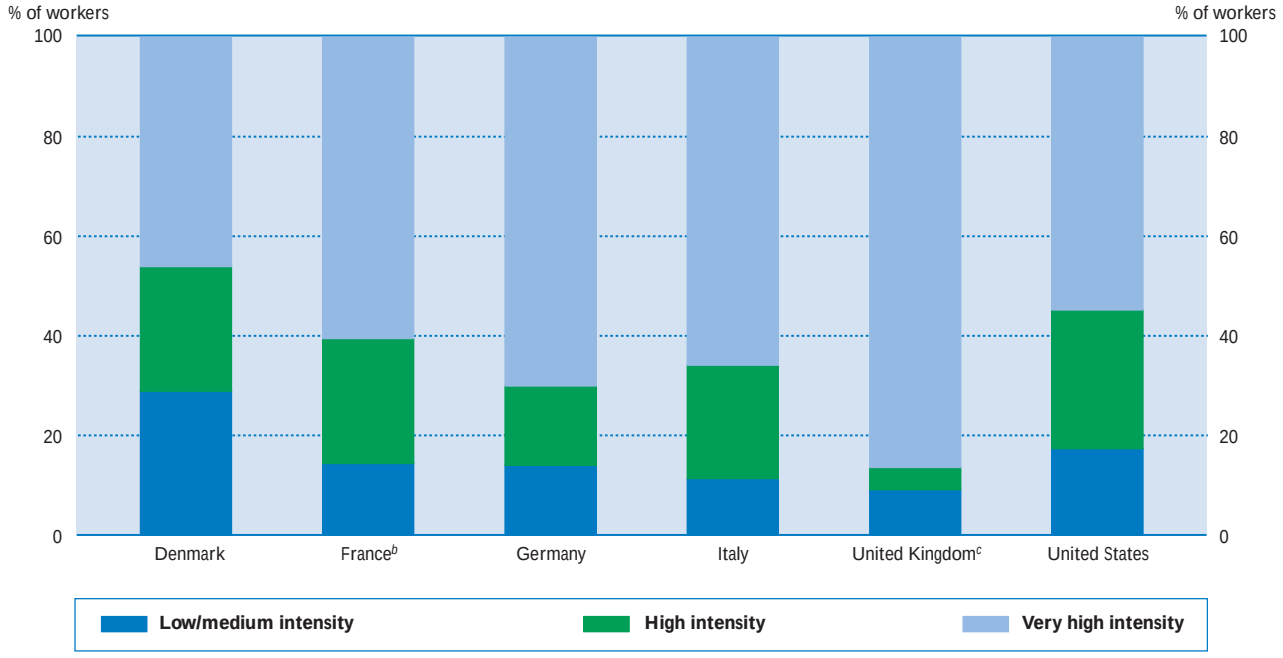
Two additional limitations of the mobility analysis are related to the definition of earnings adopted. First, the analysis of earnings mobility is restricted to dependent employees. Earnings from self-employment may play an important role in the earnings histories of a significant number of workers, but these earnings are measured either imprecisely or not at all in the data sources used for this analysis. National differences in the overall level of self-employment and the extent to which dependent employment and self-employment are combined into single careers may thus affect the comparisons made in this chapter. Second, the earnings measures refer to *gross* cash earnings. Accordingly, they may not provide a completely accurate indication of how total compensation or take-home pay evolves over time.

A multi-year *employment intensity* index was computed so that the implications of part-time and part-year employment for earnings mobility could be examined. The index is computed in two steps. First, individuals are assigned a single-year employment intensity score for each of the six years, 1986-1991. Individuals working full-time during the entire year received the score 3; those working less than, but at least one-half of, full-time and full-year 2; and other workers 1. The six-year employment intensity index is then simply the sum of these annual scores. For purposes of tabulation, workers were sometimes grouped by ranges of this index. Workers with a combined score of 18 (continuously full-time and year-round workers) are labelled as having "very high" employment intensity. Workers with six-year indices in the ranges 15 to 17, 12 to 14 and under 12 are labelled as having, respectively, "high", "medium" and "low" employment intensity. These are intended to provide a useful comparison of relative employment intensities among continuous workers and indicate that women and the youngest, oldest and the least educated workers have below-average employment intensities (Table 2.A.3). By comparison to the full working-age population, virtually all of these workers have high levels of employment intensity.

Chart 2.A.1.

Distribution of workers by employment intensity, 1986-1991[a]

All continuously employed workers



a) See Annex 2.A for an explanation of employment intensity levels.
b) Data for 1984-1989.
c) Employment intensity measure does not incorporate variations in weeks worked per year.
Source: See Table 2.A.1.

Table 2.A.3. **Distribution of employees by employment intensity, 1986-1991**[a]

All continuously employed workers

	Denmark			France[b]			Germany			Italy			United Kingdom[c]			United States		
	Low/ Medium	High	Very high	Low/ Medium	High	Very high	Low/ Medium	High	Very high	Low/ Medium	High	Very high	Low/ Medium	High	Very high	Low/ Medium	High	Very high
Total	**29.1**	**25.3**	**45.6**	**14.4**	**25.1**	**60.5**	**14.0**	**15.9**	**70.0**	**11.4**	**22.8**	**65.9**	**9.1**	**4.5**	**86.4**	**17.4**	**27.9**	**54.8**
Sex																		
Men	20.5	25.4	54.2	10.5	26.3	63.2	2.6	15.5	81.9	8.6	20.3	71.1	0.8	1.4	97.8	5.3	24.2	70.4
Women	39.3	25.2	35.5	21.7	22.7	55.5	36.6	16.9	46.5	17.2	27.9	54.9	22.9	9.6	67.5	29.0	31.3	39.7
Age																		
Under 25	36.3	36.9	26.8	19.6	35.9	44.4	10.0	36.9	53.0	20.9	39.2	39.9	1.4	4.5	94.1	21.4	36.4	42.2
25-34	28.6	31.0	40.5	13.3	25.5	61.2	13.8	16.3	69.9	11.0	21.7	67.4	6.1	3.6	90.3	14.6	26.4	59.0
35-49	26.9	20.1	53.0	13.1	21.6	65.3	14.3	9.4	76.3	7.4	15.0	77.6	12.1	5.1	82.8	15.9	25.8	58.3
50-64	31.1	20.2	48.7	16.4	23.3	60.3	17.6	15.4	67.0	8.9	25.4	65.7	14.4	4.1	81.5	24.3	29.2	46.4
Education																		
Less than upper secondary	39.5	25.9	34.6	..	..	..	18.6	18.7	62.7	..	..	..	..	..	..	20.7	30.3	49.0
Upper secondary	27.8	26.2	46.1	..	..	..	14.1	16.3	69.6	..	..	..	..	..	..	17.5	27.8	54.7
Non-university tertiary	23.7	25.8	50.6	..	..	..	6.6	10.6	82.7	..	..	..	..	..	..	15.7	30.4	53.9
University degree	9.1	20.5	70.3	..	..	..				..	..	..	..	..	..	17.7	23.3	59.0
Average earnings over 1986-1991[d]																		
1st quintile	80.1	15.1	4.9	45.4	30.7	23.8	68.1	18.2	13.6	48.7	37.6	13.7	20.2	7.6	72.1	54.7	33.4	11.9
2nd quintile	31.9	37.9	30.2	8.8	29.5	61.7	8.3	25.4	66.4	5.8	37.9	56.3	1.0	2.5	96.5	15.3	37.3	47.5
3rd quintile	17.5	30.6	52.0	5.3	22.7	71.9	4.7	18.5	76.8	1.3	19.9	78.8	1.8	2.6	95.5	9.3	27.0	63.7
4th quintile	12.7	25.1	62.2	4.7	20.2	75.1	1.7	10.7	87.6	0.6	11.9	87.6	1.4	2.3	96.3	5.0	27.2	67.7
5th quintile	3.3	17.9	78.8	7.8	22.3	70.0	0.2	8.1	91.6	0.2	6.8	93.0	0.4	0.7	98.8	2.6	14.4	83.1

.. Data not available.

a) See Annex 2.A for an explanation of employment intensity levels.

b) Data for 1984-1989.

c) Employment intensity measure does not incorporate variations in weeks worked per year.

d) Quintiles defined for annual earnings (weekly for the United Kingdom) averaged over 1986-1991 for continuously employed workers.

Source: See Table 2.A.1.

ANNEX 2.B

Quantifying how much mobility reduces earnings inequality

Shorrocks (1978) proposed an answer to the question, "How much does mobility reduce inequality?". He argued that a precise answer can be obtained by examining how much more equal the distribution of earnings is when individual earnings are averaged over multiple years, as compared with the distribution in a single year. If a decomposable index is used to measure inequality, the reduction in earnings inequality due to mobility can be split into the share due to mobility among groups of similar workers (within-group mobility) and relative changes in the average earnings of these groups (between-group mobility).

1. Shorrocks' method

It is first necessary to select a measure of inequality. Let $I(\omega)$ denote the chosen inequality index, such as the Gini index or the mean log deviation, where ω denotes the (N x 1) vector of the earnings of the N workers in the sample being analysed. Shorrocks suggests estimating mobility by the extent to which the index $I(\bullet)$ is lower for earnings averaged over $T > 1$ years compared with earnings in a single year. A useful way to make this comparison is to express the inequality of "smoothed" earnings as a proportion of single-year inequality, where the latter is averaged over the time period being investigated. Formally, Shorrocks' ratio is calculated as:

$$R(\mathbf{W}_T) = I(\omega^{mT}) / [\Sigma_{t = 1 \text{ to } T}(\eta_{t,T} * I(\omega_t))], \text{ where}$$

$\mathbf{W}_T$ is the (N x T) matrix of the N workers' earnings in years 1 to T, ω^{mT} denotes the (N x 1) vector of individual earnings averaged over years 1 to T (*i.e.*, $w^{mT} = (1/T)\,\Sigma_{t = 1 \text{ to } T}\, w_t$), ω_t denotes the (N x 1) vector of individual earnings in year t and $\eta_{t,T} = (\Sigma_{j = 1 \text{ to } N}\, w_{j,t}) / (\Sigma_{\tau = 1 \text{ to } T}\, \Sigma_{j = 1 \text{ to } N}\, w_{j,\tau})$ is the share of total earnings (over the years $t = 1$ to T) that accrued in year t.[1] The associated mobility index is simply:

$$M(\mathbf{W}_T) = 1 - R(\mathbf{W}_T)$$

M ranges from 0 (no equalising mobility) to 1 (fully equalising mobility).

If a decomposable inequality index is adopted, the Shorrocks method can be extended to examine the relative importance of within-group mobility and between-group mobility. Suppose the total sample has been divided into G groups (for example age groups). Letting $I^W(\omega)$ denote within-group inequality, $I^B(\omega)$ between-group inequality, and $I^{total}(\omega)$ total inequality for all workers:

$$I^{total}(\omega) = I^W(\omega) + I^B(\omega), \text{ where}$$

$I^W(\omega) = \Sigma_{g = 1 \text{ to } G}\, [\nu_g * I_g(\omega)]$, is simply a weighted average of inequality within each group I_g, the weights $\nu_g = n_g/N$ being the population shares of each group, and

$I^B(\omega) = \Sigma_{g = 1 \text{ to } G}\, [\nu_g * \log(w^{mN}/w^{mN}{}_g)]$, an index of the deviations between the overall mean earnings for the total sample (w^{mN}) and the means for the G groups ($w^{mN}{}_g$).

Analogously, the mobility index for a T-year period can be decomposed into within-group and between-group mobility:

$$M^{total}{}_T(\mathbf{W}) = \sigma^W M^W{}_T(\mathbf{W}) + \sigma^B M^B{}_T(\mathbf{W})$$

Total mobility is a weighted average of the within-group and between-group mobility indexes, which are defined analogously to the total mobility index:

$$M^W{}_T(\mathbf{W}) = 1 - [I^W(\omega^{mT}) / (\Sigma_{t = 1 \text{ to } T}\, (\eta_{t,T} * I^W(\omega_t))] \text{ and}$$

$$M^B{}_T(\mathbf{W}) = 1 - [I^B(\omega^{mT}) / (\Sigma_{t = 1 \text{ to } T}\, (\eta_{t,T} * I^B(\omega_t))].$$

The σ^W and σ^B weights reflect the relative importance of within-group and between-group inequality in total inequality and are defined as:

$$\sigma^W = [\Sigma_{t = 1 \text{ to } T}\, (\eta_{t,T} * I^W(\omega_t)] / [\Sigma_{t = 1 \text{ to } T}\, (\eta_{t,T} * I^{total}(\omega_t)] \text{ and}$$

$$\sigma^B = [\Sigma_{t = 1 \text{ to } T}\, (\eta_{t,T} * I^B(\omega_t)] / [\Sigma_{t = 1 \text{ to } T}\, (\eta_{t,T} * I^{total}(\omega_t)]$$

2. Implementation of Shorrocks' method in this chapter

Four different measures of the inequality index function $I(\bullet)$ are used. In the formulas defining these four indices, $\log(\bullet)$ always denotes the natural logarithm (base e) and w^{mN} denotes the mean of earnings over the N individuals in the specified sample [*i.e.*, $w^{mN} = (1/N)\Sigma_{j = 1 \text{ to } N} w_j$]. The four measures are:

Mean log deviation:

$$I^{mld}(\omega) = (1/N)\, \Sigma_{j = 1 \text{ to } N}\, [\log(w^{mN} / w_j)]$$

Gini:

$$I^{gini}(\omega) = [1/(2N^2\, w^{mN})] * \Sigma_{j = 1 \text{ to } N} \Sigma_{k = 1 \text{ to } N}]w_j - w_k]$$

Theil I_1: $I^1(\omega) = (1/N)\Sigma_{j = 1 \text{ to } N}[(w_j/w^{mN}) * \log(w_j/w^{mN})]$

Theil I_2: $I^2(\omega) = (1/2N)\Sigma_{j = 1 \text{ to } N}[(w_j/w^{mN})^2 - 1]$

All four indices are used to assess how rapidly mobility caused inequality to diminish.[2] Multiple indices are used because no one index fully captures all the relevant aspects of inequality, as each are more sensitive to different aspects of inequality.[3] However, when differentiating within- and between-group mobility, only the mean log deviation index is used, because it alone allows exact decompositions into the shares due to each effect.

Notes

1. Under quite general conditions, Shorrocks shows that the $\eta_{t,\,T}$ are the best weights to use to calculate an "average" inequality level over a multi-year period, which can then be compared with the level of inequality when earnings are first averaged over the same period.
2. The mean log deviation is sometimes referred to as the Theil I_0 index. The Theil I_2 index is one-half of the square of the coefficient of variation.
3. Atkinson (1970) has pointed out that all inequality indices weight different portions of the distribution differently. Among the four indices used, the mean log deviation index is most sensitive to inequality near the bottom of the distribution, the Gini is most sensitive in the middle, the Theil I_2 at the top, and the Theil I_1 at both extremes.

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CHAPTER 3

Economic performance and the structure of collective bargaining

A. INTRODUCTION AND MAIN FINDINGS

1. Introduction

The economic performance of OECD countries varied substantially over the 1970s and 1980s. Considering unemployment, for example, the variation in countries' performances has been much greater since the first oil price shock in 1973 than was the case beforehand. A large literature has developed which seeks to account for the causes of inter-country variation in various measures of economic performance [OECD (1994*b*)]. One strand of this literature has investigated whether differences in institutional settings might be correlated with economic and labour market performance. In particular, much interest has focused on the potential importance of collective bargaining systems.

Wage bargaining can take place at several different levels. At one extreme, firms and employees negotiate over wages and working conditions at the level of the individual enterprise or establishment while, at the other end of the scale, national unions and employers' associations may bargain for the whole country. An intermediate case is that of sectoral, branch or industry-level bargaining. OECD countries occupy quite diverse positions on this scale. For example, the Nordic countries have typically been characterised by centralised bargaining systems, whereas those in the United States and Canada are at the more decentralised end of the range. In between are countries with what are often termed "intermediate" bargaining systems, such as Belgium, Germany and the Netherlands.

Recent years have seen quite substantial changes in some countries' collective bargaining institutions, driven to some extent by arguments relating to the relative economic merits of different bargaining systems.[1] Decentralisation of collective bargaining has taken place notably in the United Kingdom, starting in the 1960s and accelerating in the 1980s, in New Zealand, with the passing of the Employment Contracts Act in 1991 and the dismantling of the *award* system, and in Sweden, where the previous system of centralised bargaining has been replaced by agreements at the sectoral level. On the other hand, recent years have seen moves towards more centralised bargaining systems in Norway and Portugal. In Australia, the wage bargaining system centralised from 1975 to 1987 and then moved back towards enterprise bargaining. The Danish system exhibited the opposite pattern, decentralising in the 1980s and then centralising from 1989 onwards; the same is true of Italy.

Hypotheses about the possible impacts of institutional arrangements on labour market performance may be described by two extremes: at one end, the "Eurosclerosis" view implies that non-market institutions and regulations are "rigidities" which harm economic performance; the opposite end is occupied by the so-called "corporatist" view, which argues that institutional arrangements exist to overcome various market failures, and may, therefore, be beneficial to national economic performance.[2]

Both hypotheses assume a linear relationship between economic performance and the degree of centralisation of the wage bargaining system. This viewpoint was challenged in an influential article in 1988 by Calmfors and Driffill, who argued that the relationship is non-linear, *i.e.* either centralised or decentralised bargaining systems are likely to outperform countries with intermediate, mainly sectoral, bargaining. This perspective, developed and applied by them and others, argued that the relation between bargaining institutions and employment is "U-shaped": employment rates being higher in both decentralised and centralised systems compared with intermediate ones. The relation with the unemployment rate is seen as "hump-shaped": unemployment rates being lower in both decentralised and centralised systems.

The main tasks of this chapter are threefold. First, it extends Calmfors and Driffill's original analysis to cover the 1986 to 1996 period. Second, it builds on the analysis in the 1991 and 1994 *Employment Outlooks* by making use of new quantitative information on trade union density, collective bar-

gaining coverage (the percentage of workers whose terms of employment are determined by a collective agreement), and measures of both the centralisation and co-ordination of bargaining. Third, it examines statistically the correlations between these bargaining measures and a wide range of indicators of economic performance.

2. Main findings

Accurate assessments of the impact of different systems of collective bargaining on measures of economic performance are difficult because of measurement and methodological problems. While it is premature to draw definitive conclusions on this issue, the evidence presented in this chapter does not show many statistically significant relationships between most measures of economic performance and collective bargaining. This negative conclusion holds irrespective of whether collective bargaining systems are proxied by measures of trade union density, collective bargaining coverage or the centralisation and co-ordination of bargaining. One exception to these negative findings is that there is a fairly robust relation between cross-country differences in earnings inequality and bargaining structures. More centralised/co-ordinated economies have significantly less earnings inequality compared with more decentralised/uncoordinated ones. In addition, while not always statistically significant, the chapter finds some tendency for more centralised/co-ordinated bargaining systems to have lower unemployment and higher employment rates compared with other, less centralised/co-ordinated systems.

How should one interpret such findings? While they raise some doubts about the robustness of the conclusions of some previous research which claimed to have found significant relations (*e.g.* a "hump-shaped" relation between unemployment and the ranking of countries from less to more decentralised bargaining, and a "U-shaped" relation between employment and this same ranking), it is probably premature to consider the issue settled. Labour market performance indicators are undoubtedly affected by a number of institutional factors and policy instruments. Some may themselves be independent of a country's system of collective bargaining, while others may interact in complex ways with bargaining variables not addressed in this chapter. More analysis is necessary to elucidate whether there are any robust relations between collective bargaining systems and economic performance.

B. THEORETICAL ARGUMENTS AND EMPIRICAL EVIDENCE

1. Theory

Wage bargaining can take place at the firm (establishment) level, at the national level, or at intermediate levels (*e.g.* branch, industry or sector-level). In a decentralised system, negotiations take place between employee representatives and single employers. Trade unions may also bargain with employer associations at the branch level (multi-employer bargaining). Lastly, in some countries the peak organisations of trade unions and employers negotiate at the national level, sometimes with the government as a third partner (centralised bargaining). In practice, bargaining may occur simultaneously at more than one level: national or branch-level agreements may set (minimum) standards which can be modified at more decentralised levels. In the case of wage bargaining, any difference between the centrally-negotiated agreement and the actual wage increase – so-called "wage drift" – depends on the ability and desire of the peak-level organisations to enforce the central agreement on all their members.

Economic theory advances the following arguments regarding the relationship between wage bargaining and performance. First, if a trade union and an individual employer bargain, the employment effect of wage increases depends strongly on the price elasticity of demand for the firm's product. A monopoly firm, facing price-inelastic demand, can simply pass wage increases on to its customers without losing sales. However, monopolies are rare and most firms are confronted with competitors, or potential competitors, providing substitute products. As the number of competitors increases, or as the products which they supply become closer substitutes for the firm's own output, the price elasticity of demand which the firm faces will rise. In a perfectly competitive market, firms face an infinitely elastic demand curve, so that any price rise resulting from higher wages will reduce the demand for the specific firm's output towards zero. In such markets, the trade-off between wage increases and employment at the firm level is large and will be recognised as such by enterprise-based unions.[3]

Now consider negotiations by a branch-level or industrial union. Unions which bargain at the industry level may exploit their market power to secure higher wages for that industry's workers [Booth (1995); Calmfors (1993)]. The resulting higher price for that industry's output will not reduce demand by as much as in the competitive case, as there are unlikely to be many close substitutes at the industry level, so that employment in the industry will be

less affected by the wage rise. The "price" for the higher wage is paid by consumers. As above, the strength of the wage-employment relationship depends on the number and closeness of substitute products, but it remains true that there are fewer substitutes for, say, cars as a whole than for one particular brand of cars. The general conclusion is that more decentralised bargaining brings greater wage discipline in its wake through the elasticity of demand in the product market; to this extent economies with more decentralised wage bargaining systems will exhibit lower real wages and higher levels of employment.

A second relationship between wage-setting institutions and economic performance hinges on the presence of negative externalities: wage bargains made by a certain group of workers may have harmful effects on other individuals in the economy. Calmfors (1993) identifies seven such externalities:

- *consumer price externalities:* Higher wages for some workers lead to higher prices for all consumers, and thus to lower real disposable income for those who do not benefit from the bargained higher wages;
- *input price externalities:* Higher wages cause higher input prices and, therefore, lower output and employment in the sectors using these inputs;
- *fiscal externalities:* The unemployment and related welfare benefits paid to those who lose their jobs as a result of a bargained wage rise are paid for by all taxpayers, not just by the parties covered by the bargaining agreement [see Holmlund (1993)]. Similarly, these higher wages may bring about lower output and, thus, lower tax payments;
- *unemployment externality:* A rise in unemployment resulting from higher wages makes it more difficult for all unemployed workers to find jobs;
- *investment externality:* Due to labour turnover, not all of the workers currently employed will benefit from the future higher wages to be gained from current investment. Therefore, the union has a reduced incentive to encourage such investment. However, higher bargained wages may help to encourage the substitution of capital for labour, so the overall effect is uncertain;
- *envy externality:* If, as researchers in a number of disciplines have suggested [Adams (1963); Clark and Oswald (1996); Frank (1985)], individual well-being partly depends on some process of comparison with others, higher wages for some workers will reduce the relative wage, and thus the well-being, of others; and
- *effciency wage externality:* If the effort of workers depends on their relative wage, higher wages resulting from a union bargain will lead to lower effort from those workers who are not covered by the bargain; they may also encourage uncovered workers to quit and seek a job in the covered sector. Both of these effects impose costs on uncovered employers.

Additional externalities might include inter-union rivalries under decentralised wage bargaining. Separate bargains for different groups of workers may exacerbate pay leap-frogging, producing inflationary pressure [Blyth (1979); Cörvers and van Veen (1995); Jackman *et al.* (1996); OECD (1994*b*)]. In addition, any employment loss resulting from higher bargained wages in the covered sector will lead to an increase in labour supply to the uncovered sector, which will drive down the wages of uncovered workers.

The key issue here is the extent to which these externalities are taken into account in the bargaining process. If workers are not altruistic, none of them will be internalised under decentralised bargaining because those who receive the benefits are only a very small percentage of those who are harmed by higher bargained wages – all consumers, workers and taxpayers in the economy. As bargaining becomes more centralised and/or co-ordinated, the distinction between those who benefit and those who are harmed becomes less clear. Under centralised wage bargaining, those who benefit from higher wages and those who are harmed are virtually the same group.[4] It is, thus, argued that more centralised unions (and employers' associations) will internalise to a far greater extent the macroeconomic consequences of their actions, and will agree to lower real wage levels, as there are no large outside groups to which the resulting negative effects can be shifted.

Calmfors and Driffill (1988) argue that the net impact of the competitive and externality effects is to produce a U-shaped relationship between a country's economic performance and the centralisation of its bargaining system (and hence a hump-shaped relationship between unemployment and centralisation). Decentralised bargains externalise to a large degree the negative consequences of higher wages, but are constrained by competition in the product market. A centralised union, on the other hand, will internalise more of the negative externalities resultant on the wage outcome as it considers the welfare of all its members in the economy. By contrast, economies with an intermediate level of wage bargaining suffer from both the absence of competitive pressures and from a lack of

internalisation of negative externalities. These latter countries are hypothesised to exhibit less favourable macroeconomic performance.

The above theory emphasizes the role of lower wages in bringing about higher employment. More generally, the different degrees of wage pressure may also feed through to inflation, at least in the short to medium run. Finally, most studies find that unionisation is typically associated with greater equalisation of wages [Bellman and Möller (1993); Blau and Kahn (1996); Hartog and Teulings (1997); Metcalf (1993); Whitehouse (1992); Zweimüller and Barth (1994)]. This may come about by the setting of wage floors, for example. One hypothesis is that more centralised unions may be in a more powerful position to enforce policies reducing earnings inequality.[5]

It is not clear that the net result of the competition and externality effects would be to produce a U-shaped relationship between the centralisation of the wage bargaining system and economic performance. Some authors have proposed a positive linear relationship [Bruno and Sachs (1985); Layard *et al.* (1991); Soskice (1990); Traxler *et al.* (1996)]. Here, the more centralised (''co-ordinated'' or ''corporatist'') a bargaining system is, the more likely it is to take into account the macroeconomic impacts of any wage agreement. In other words, the favourable performance effects of increasing centralisation that come from internalising externalities are likely to outweigh any concomitant detrimental effects from reduced product market competition. This criticism is essentially one of the relative importance of the two constituent parts of the U-shape hypothesis (*i.e.* the effects of product market competition and of internalising externalities), and not of the theory itself. Its resolution remains an empirical matter.

2. Extensions of the basic model

The model above is a simple one. It does not take into account the increasingly important role that international trade plays in OECD economies, potential interactions between centralisation/co-ordination and trade union density, and the possible coexistence of centralised and decentralised bargaining. These extensions are discussed in turn.

The existence of international trade changes the model considerably by introducing a new class of foreign products which can act as substitutes for domestically produced goods. Foreign competition reduces the ability of industry unions to push for large wage increases by increasing the elasticity of product demand which the domestic industry's output faces [Danthine and Hunt (1994); Driffill *et al.* (1996); Rama (1994)]. For example, when there are no imported cars, there are far fewer substitutes for cars as a product than for one brand of cars. But when trade is introduced, one country's cars are but a few of many different brands available, hence the elasticity of demand facing one country's car output may still be quite high. The same argument can be made with respect to exports. As a result, the theoretical relationship between centralisation of bargaining and economic performance will tend to flatten out in an open economy.[6]

Second, there may be interactions between trade union density and collective bargaining coverage on the one hand, and the centralisation and co-ordination of bargaining on the other. Layard *et al.* (1991, p. 138), for example, argue that the nature of the relationship between economic performance and union coverage depends on whether the bargaining system is centralised or decentralised, due to the effects discussed in this section.

The last extension concerns the possibility that a significant degree of wage drift at the local level may undermine the purpose of a centrally-negotiated wage [Holden (1990); Holmlund and Skedinger (1990); Rødseth (1995)]. Although some degree of wage drift is unlikely to be harmful, too large a level may cause the central organisations to lose their legitimacy.

3. Previous empirical results

Empirical work on this topic is relatively sparse and inconclusive. Some analyses found a positive relationship between a country's economic performance and its degree of ''corporatism'' [Bruno and Sachs (1985); Cameron (1984); Crouch (1985); Tarantelli (1986)]: more corporatist economies exhibited better economic performance, typically measured by some composite ''misery'' index, such as the sum of the inflation and unemployment rates. This finding was challenged by Calmfors and Driffill (1988), who ranked countries according to the perceived degree of centralisation of their wage bargaining systems. They reported some evidence of a U-shaped relationship between economic performance and centralisation: in the 1974-1985 period, intermediate countries exhibited, on average, worse economic performance than did either centralised or decentralised systems. More recent empirical work, using a variety of countries, time periods and performance indicators, has produced a mixed set of findings, as summarised in Table 3.1. Two broad approaches, both based on country rankings, have been used in this literature. The first [Grier (1997); OECD (1988)] is to classify countries into groups (such as ''centralised'' and ''decentralised'') and use dummy variables in the regression analysis. The second [Bean (1994); Jackman *et al.* (1996); Scarpetta (1996)] is to enter the country rank directly as a

Table 3.1. **Economic performance and the structure of collective bargaining: some recent findings**

Study	Performance measure	Number of countries	Years	Findings	Support for U/hump-shape hypothesis
Bean (1994)	Unemployment	20	1956-1992	Linear relationship with coordination.	No
Bleaney (1996)	Unemployment and inflation	17	1973-1989	Negative linear relationship between corporatism and unemployment; some evidence of a hump-shaped relation with centralisation in later years.	Mixed
Dowrick (1993)	Productivity growth	18	1960s-1980s	U-shaped conclusion that intermediate economies grow more slowly.	Yes
Freeman (1988)	Employment, unemployment and wage growth	19	1984, 1979-1984/85	U-shaped relationship between dispersion of wages, as a proxy measure of corporatism, and employment; hump-shaped relationship with unemployment and wage growth.	Yes
Golden (1993)	Unemployment, employment, Okun index and API[a]	17	1974-1984	Mixed results.	Mixed
Grier (1997)	Real GNP growth	24	1951-1988	Negative relationship with decentralised economies growing the fastest.	No
Heitger (1987)	Productivity growth	18	1960s-1970s	U-shaped view that intermediate economies grow more slowly.	Yes
Jackman (1993)	Unemployment	20	1983-1988	Linear relationship.	No
Jackman *et al.* (1996)	Unemployment	20	1983-1994	Linear relationship.	No
McCallum (1986)	Okun index[a] and real wage rigidity	18	1974-1984	Linear relationship between corporatism and performance.	No
OECD (1988)	Unemployment and inflation	17	1971-1986	Hump-shaped relationship for unemployment.	Yes
Rowthorn (1992*b*)	Employment and unemployment	17	1973-1985	U-shaped and hump-shaped relationships, respectively, but only in the 1980s.	Yes
Scarpetta (1996)	Unemployment	15 to 17	1970-1993	Negative relationship between unemployment and co-ordination; Some evidence of U-shaped relationship between unemployment and centralisation.	Mixed
Soskice (1990)	Unemployment and API[a]	11	1985-1989	Positive relationship between co-ordination and performance.	No
Traxler *et al.* (1996)	Unemployment, employment, Okun index and API[a]	16	1974-1985	Negative relationship between co-ordination and unemployment; U-shaped relationship between co-ordination and employment; mixed results for the Okun index and API.	Mixed

a) The Okun index is the sum of the unemployment and inflation rates; the Alternative Performance Index (API) is the sum of the unemployment rate and the current account deficit as a percentage of GDP.

Table 3.2. **Indicators of macroeconomic performance: Calmfors and Driffill's (1988) Table 2 updated**

	Unemployment rate				Employment/population ratio[a]				Okun index[b]				Alternative performance index[c]			
	Levels 1974-1985	Change 1974-1985 over 1963-1973	Levels 1986-1996	Change 1986-1996 over 1974-1985	Levels 1974-1985	Change 1974-1985 over 1963-1973	Levels 1986-1996	Change 1986-1996 over 1974-1985	Levels 1974-1985	Change 1974-1985 over 1963-1973	Levels 1986-1996	Change 1986-1996 over 1974-1985	Levels 1974-1985	Change 1974-1985 over 1963-1973	Levels 1986-1996	Change 1986-1996 over 1974-1985
Centralised economies																
Austria	2.4	0.7	5.2	2.9	66.6	–1.4	63.6	–3.0	8.1	2.2	7.9	–0.2	3.5	1.6	4.9	1.4
Norway	2.2	0.6	4.6	2.5	73.0	5.8	74.7	1.7	11.2	4.3	8.7	–2.5	4.1	1.9	5.6	1.5
Sweden	2.4	0.4	4.5	2.2	78.1	5.7	76.4	–1.8	12.1	5.3	9.5	–2.6	3.6	2.3	3.8	0.2
Denmark	7.4	6.0	9.8	2.5	73.3	–0.2	73.4	0.2	17.1	9.4	12.7	–4.4	10.7	7.9	10.2	–0.6
Finland	4.8	2.6	10.2	5.4	71.3	0.8	67.3	–4.0	15.7	7.3	13.6	–2.2	6.7	3.9	8.6	1.9
Unweighted average	**3.8**	**2.1**	**6.9**	**3.1**	**72.4**	**2.2**	**71.1**	**–1.4**	**12.9**	**5.7**	**10.5**	**–2.4**	**5.7**	**3.5**	**6.6**	**0.9**
Intermediate economies																
Western Germany	4.9	4.0	7.3	2.4	64.6	–4.2	63.9	–0.7	9.3	4.9	9.4	0.1	4.1	4.5	8.6	4.6
Netherlands[d]	5.9	4.5	6.9	1.0	54.4	–6.2	55.0	0.6	11.8	3.5	8.7	–3.2	4.8	3.6	10.5	5.7
Belgium	8.7	6.6	11.2	2.5	56.6	–3.1	55.2	–1.3	16.3	10.2	13.4	–2.9	9.7	8.5	14.7	5.1
New Zealand	2.3	2.1	7.2	4.9	64.3	0.2	59.9	–4.5	15.7	10.1	12.6	–3.0	8.8	8.8	4.0	–4.8
Australia	6.3	4.5	8.5	2.2	65.7	–1.4	67.3	1.5	16.7	10.9	13.5	–3.2	9.8	5.8	4.1	–5.7
Unweighted average	**5.6**	**4.3**	**8.2**	**2.6**	**61.1**	**–2.9**	**60.2**	**–0.9**	**14.0**	**7.9**	**11.5**	**–2.4**	**7.4**	**6.2**	**8.4**	**1.0**
Decentralised economies																
France[e]	6.4	4.1	10.6	4.2	63.5	–2.4	59.6	–3.9	16.9	9.8	13.2	–3.7	6.8	5.1	10.8	3.9
United Kingdom	6.7	4.5	8.5	1.8	68.8	–2.3	68.9	0.1	19.0	11.6	13.0	–6.1	6.5	4.5	6.8	0.3
Italy	6.1	2.1	10.3	4.2	55.5	–1.6	52.9	–2.5	22.0	13.6	15.5	–6.6	8.8	4.7	10.3	1.5
Japan	2.2	0.9	2.6	0.4	70.1	–1.1	72.8	2.7	9.1	1.6	3.7	–5.3	1.3	1.0	5.2	3.8
Switzerland	0.5	0.5	2.2	1.8	74.2	–3.7	79.8	5.6	4.6	0.1	4.9	0.3	–3.3	–3.8	8.1	11.4
United States	7.5	2.8	6.2	–1.3	65.0	3.4	71.3	6.3	15.2	6.9	9.7	–5.5	8.1	3.7	4.2	–3.9
Canada	8.6	3.7	9.5	0.9	65.7	3.4	69.4	3.7	17.2	8.6	12.7	–4.5	9.8	4.3	6.5	–3.3
Unweighted average	**5.4**	**2.7**	**7.1**	**1.7**	**66.1**	**–0.6**	**67.8**	**1.7**	**14.9**	**7.5**	**10.4**	**–4.5**	**5.4**	**2.8**	**7.4**	**2.0**
Unweighted average excluding Switzerland	***6.2***	***3.0***	***7.9***	***1.7***	***64.7***	***–0.1***	***65.8***	***1.1***	***16.6***	***8.7***	***11.3***	***–5.3***	***6.9***	***3.9***	***7.3***	***0.4***

a) Total employment divided by the working-age population (15-64).
b) Defined as the sum of the unemployment rate and the inflation rate.
c) Defined as the sum of the unemployment rate and the current account deficit as a percentage of GDP.
d) 1969-1973 instead of 1963-1973.
e) 1965-1973 instead of 1963-1973.

Sources: OECD, analytical database and *OECD Economic Outlook,* June 1997. Japanese inflation figures prior to 1971 were taken from *Historical Statistics of Japan,* Volume 4; a number of pre-1975 figures for the current account deficit as a percentage of GDP were obtained from OECD, *National Accounts 1960-1993,* 1996.

cardinal variable. Both methods have their drawbacks (the first relies on an arbitrary grouping of countries, while the second treats a country with a rank of six as exactly twice as centralised as a country with a rank of three). This chapter will adopt the first of these approaches.

4. Updating Calmfors and Driffill

Calmfors and Driffill's original paper considered the relationship between the centralisation of collective bargaining and the unemployment rate, the employment/population ratio, the Okun index (the sum of the unemployment and inflation rates), and an "alternative performance indicator" (the sum of the unemployment rate and the current account deficit as a percentage of GDP, API). Table 3.2 updates their Table 2, *conserving* the centralisation ranking of countries they used. Later sections of this chapter will update the centralisation rankings to the 1990s, and consider what other aspects of collective bargaining systems may be correlated with economic performance. As in Calmfors and Driffill's original table, average figures for countries with decentralised bargaining systems are presented both including and excluding Switzerland, due to some doubt as to the appropriate classification of the latter country.

The first two columns under each measure of performance reproduce the results in Calmfors and Driffill's Table 2. Some of the results are consistent with their U-shape hypothesis: intermediate countries have the lowest employment/population ratio and the highest value of the alternative performance index (API) over the years 1974-1985. However, no such relationship is evident for either the unemployment rate or the Okun index over the same period.

With respect to the *change* in these performance variables, from 1963-1973 to 1974-1985, the results are a little sharper: intermediate countries' unemployment rates rose faster, and their employment/population ratios fell the most. For example, the average rise in unemployment in intermediate countries was 4.3 percentage points compared with less than 3 percentage points for countries with either more centralised or more decentralised wage bargaining. Furthermore, the value of intermediate countries' API rose more than did that of either centralised or decentralised countries.[7]

The third and fourth columns incorporate data from 1986 to 1996. Do the results from the previous analysis follow through to the 1986-1996 period? While the same broad pattern appears, only the difference in the level of the employment rate is significant between countries with intermediate and non-intermediate wage bargaining systems. Centralised countries experienced the greatest rise in unemployment, whereas decentralised countries showed the greatest improvement in the Okun index over this time period, but the greatest rise in the API.

Thus, this update of the Calmfors and Driffill study shows little systematic evidence of a continued U-shaped relationship over the past decade between their country classification of bargaining systems and performance. The following sections extend this analysis by considering a much more comprehensive set of collective bargaining measures than previously available, including information on centralisation, co-ordination, trade union density and collective bargaining coverage.

C. CHARACTERISTICS OF WAGE BARGAINING SYSTEMS

A key issue for the relationship between bargaining systems and economic performance is the institutional capacity to organise bargaining such that the macro-economic implications of its outcomes are taken into account. Empirical analysis depends crucially on the classification of countries' collective bargaining characteristics. The next subsection highlights two qualitative characteristics of wage bargaining systems, "centralisation" and "co-ordination", and two cardinal measures: trade union density and the collective bargaining coverage rate.

1. Key concepts: corporatism, centralisation and co-ordination

Whereas it is relatively straightforward to measure trade union density and collective bargaining coverage, the degree of so-called "corporatism", while closely related to measures of centralisation and co-ordination, is more difficult to use in applied work. This is because: *i)* there is no standard definition of corporatism; *ii)* the institutional features behind corporatism are difficult to quantify; and *iii)* several different aspects of the economic and political system have to be combined into one measure.

Lehmbruch (1984) identifies three standard definitions of corporatism:

- the existence of strong centralised organisations of employers and worker representatives with an exclusive right of representation;
- the privileged access of such centralised organisations to government; and
- social partnership between labour and capital to regulate conflict over interests, and co-ordination with government.

Instead of corporatism, other authors have concentrated on the notions of "centralisation" [Calmfors and Driffill (1988)] or "co-ordination" [Soskice (1990)] to characterise the wage-setting system. *Centralisation* describes the locus of the formal structure of wage bargaining. Typically, three broad strata are distinguished: the national or central bargain negotiated between peak organisations, which may cover the whole economy (centralised bargaining); negotiations between unions and employers' associations regarding wages and conditions of work for particular industries or crafts (intermediate bargaining); and firm-level bargaining between unions and management (decentralised bargaining).

Analysis of *co-ordination* instead focuses on the degree of consensus between the collective bargaining partners. Bargaining may well be co-ordinated even when it is decentralised, as in the case of pattern bargaining or covert co-ordination. Co-ordination and centralisation may then be thought of as two different routes to achieving the same aims. Soskice (1990) uses such an approach to re-evaluate Calmfors and Driffill's classification, arguing that bargaining systems in Japan and Switzerland are centralised, due to the existence of co-ordinated employers' associations and networks in both countries.[8] This chapter follows the latter approach and combines information on centralisation and co-ordination into one summary measure of the location of collective bargaining.

2. Measures of collective bargaining in OECD countries

The analysis of the relationship between the wage bargaining system and economic performance needs to incorporate the bargaining system's breadth, the level at which it takes place and the degree of co-ordination. Even relatively centralised bargaining will have little effect if few workers are covered. This chapter captures the "breadth" of bargaining by two cardinal measures of trade union presence in the labour market: collective bargaining coverage and trade union density. These measures will be considered in conjunction with the more subjective measures of centralisation and co-ordination.

Table 3.3 presents information on all four measures of collective bargaining for 19 OECD countries for 1980, 1990 and 1994 (or the latest available year). The values for trade union density and collective bargaining coverage are shown in Chart 3.1.[9] In the United States, the union density rate in 1994 was around 16 per cent. In Europe, trade union density ranged from 9 per cent in France (the lowest recorded in the OECD area) to 91 per cent in Sweden. Between 1980 and the early 1990s, it roughly halved in France, New Zealand and Portugal, and fell by a quarter in Australia, Austria, Japan, the Netherlands, the United Kingdom and the United States. On the other hand, five countries have posted increases in trade union density since 1980, especially Spain (albeit from a low base), Finland and Sweden. There are some signs of a slacking in the general fall in union density. Between 1980 and 1990, 15 of the 19 countries recorded a fall, from 1990 to 1994 less than half experienced reductions. The (unweighted) average density rate fell from 46 per cent in 1980 to 40 per cent in 1990, and it remained at this level in 1994.

In most countries, the percentage of workers who are covered by collective agreements is higher than the percentage belonging to trade unions. France is the extreme case, combining the lowest unionisation rate and one of the highest coverage rates. There are two reasons for the higher collective bargaining coverage rate: *i)* employers may extend collective agreements to non-union workers; or *ii)* collective bargaining agreements may be extended by statute to third parties.[10] The coverage rate will thus depend at least as much on the share of employers belonging to employers' associations and the authorities' use of statutory extensions as on trade union density itself.[11] The coverage rate has shown only a small fall in the 1980s, in contrast to the sharper contraction in union density. The unweighted average coverage rate was 72 per cent in 1980, 70 per cent in 1990 and 68 per cent in 1994. However, Japan, New Zealand, the United Kingdom and the United States have experienced a noticeable reduction in collective bargaining coverage.

The third and fourth parts of Table 3.3 extend the classification of collective bargaining systems to include OECD Secretariat estimates of the *prevailing bargaining level* and the *degree of co-ordination*. The latter measure includes both union and employer co-ordination. Each characteristic has been assigned a value between 1 (for uncoordinated/decentralised) and 3 (for co-ordinated/centralised). Values for the classification of countries' bargaining levels are taken from Table 5.1 of OECD (1994*a*), with some modifications made in light of recent developments for some countries. The values for co-ordination are the result of combined information taken from Visser's (1990) classification of trade union co-ordination, the Calmfors and Driffill (1988) index and information gathered by the OECD on employers' associations.

Countries judged to have consistently centralised bargaining systems include Austria, Belgium and Finland. At the other end of the scale, Canada, Japan, New Zealand and the United States are characterised by enterprise or plant-level bargaining, and thus have the lowest values for the

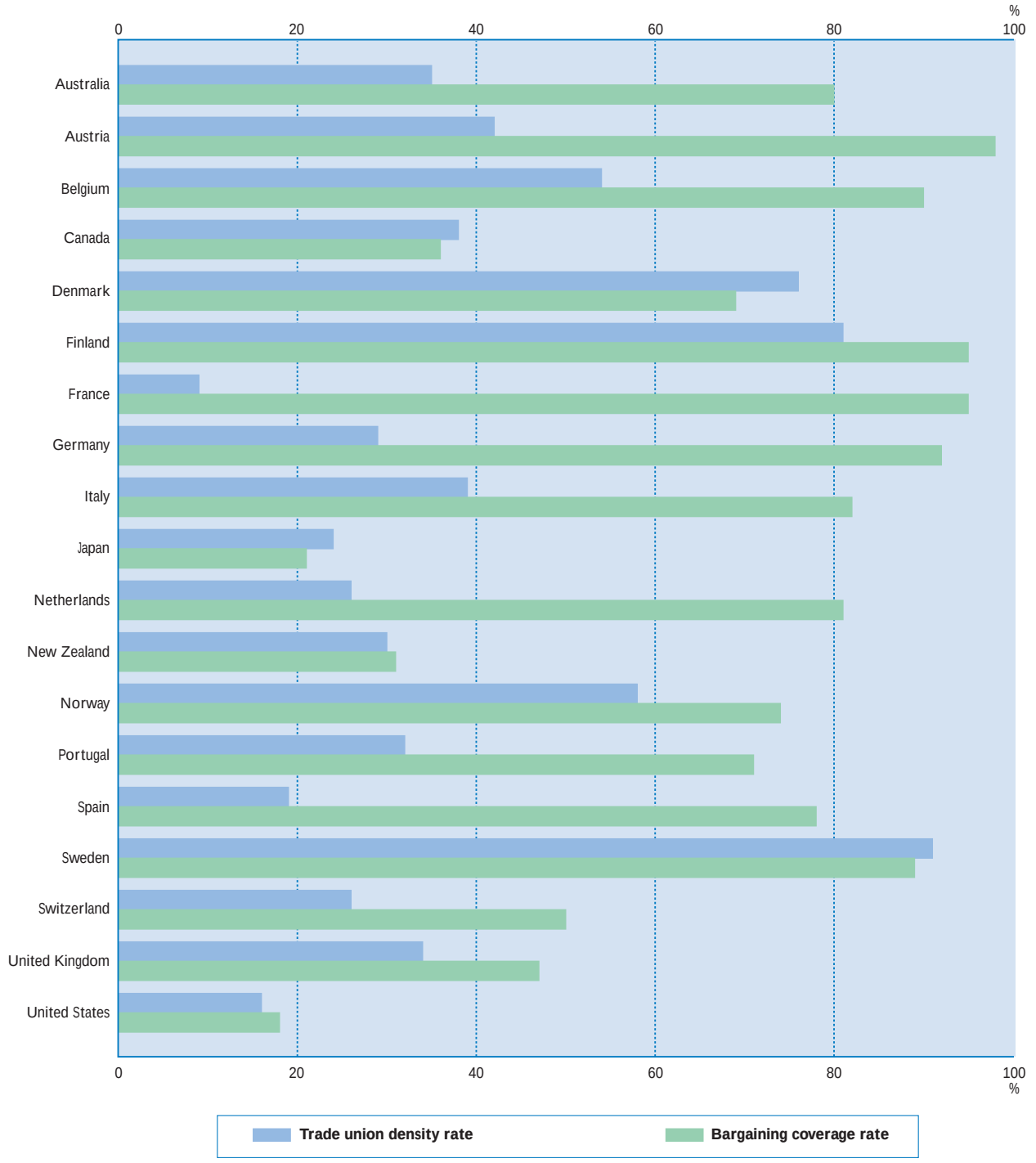
Table 3.3. **Collective bargaining characteristics of OECD countries**

	Trade union density[a]						Bargaining coverage[a]						Centralisation						Co-ordination					
	1980	Ranking	1990	Ranking	1994	Ranking	1980	Ranking	1990	Ranking	1994	Ranking	1980	Ranking	1990	Ranking	1994	Ranking	1980	Ranking	1990	Ranking	1994	Ranking
Australia	48	11	41	8	35	9	88	5	80	8	80	9	2+	3	2+	1	1.5	14	2+	7	2+	5	1.5	15
Austria	56	6	46	6	42	6	(98)	1	98	1	98	1	2+	3	2+	1	2+	1	3	1	3	1	3	1
Belgium	56	6	51	5	54	5	(90)	4	90	4	90	5	2+	3	2+	1	2+	1	2	10	2	10	2	9
Canada	36	12	36	11	38	8	37	17	38	17	36	16	1	17	1	17	1	16	1	18	1	17	1	16
Denmark[b]	76	2	71	3	76	3	(69)	14	69	13	69	13	2+	3	2	8	2	5	2.5	4	2+	5	2+	6
Finland	70	3	72	2	81	2	95	2	95	2	95	2	2.5	2	2+	1	2+	1	2+	7	2+	5	2+	6
France	18	18	10	19	9	19	85	7	92	3	95	2	2	8	2	8	2	5	2–	13	2	10	2	9
Germany	36	12	33	12	29	13	91	3	90	4	92	4	2	8	2	8	2	5	3	1	3	1	3	1
Italy	49	10	39	9	39	7	85	7	83	7	82	7	2–	15	2–	14	2	5	1.5	15	1.5	15	2.5	4
Japan	31	15	25	16	24	16	28	18	23	18	21	18	1	17	1	17	1	16	3	1	3	1	3	1
Netherlands	35	14	26	15	26	15	76	9	71	12	81	8	2	8	2	8	2	5	2	10	2	10	2	9
New Zealand	56	6	45	7	30	12	(67)	15	67	14	31	17	2	8	1.5	16	1	16	1.5	15	1	17	1	16
Norway	57	5	56	4	58	4	(75)	11	75	11	74	11	2	8	2+	1	2+	1	2.5	4	2.5	4	2.5	4
Portugal	61	4	32	13	32	11	70	12	79	9	71	12	2–	15	2+	1	2	5	2–	13	2	10	2	9
Spain[c]	9	19	13	17	19	17	(76)	9	76	10	78	10	2+	3	2	8	2	5	2	10	2	10	2	9
Sweden	80	1	83	1	91	1	(86)	6	86	6	89	6	3	1	2+	1	2	5	2.5	4	2+	5	2	9
Switzerland	31	15	27	14	27	14	(53)	16	53	15	50	14	2	8	2	8	2	5	2+	7	2+	5	2+	6
United Kingdom	50	9	39	9	34	10	70	12	47	16	47	15	2	8	2–	14	1.5	14	1.5	15	1+	16	1	16
United States	22	17	16	17	16	18	26	19	18	19	18	19	1	17	1	17	1	16	1	18	1	17	1	16

a) See Chart 3.1 for the exact years referred to by the 1994 trade union density and collective bargaining coverage figures.
b) Collective bargaining coverage figures have been revised downwards from those presented in OECD (1994*a*). See Annex 3.A.
c) Trade union density figures have been revised and do not agree with those in OECD (1994*a*). See Visser (1996*b*).
Sources: Quantitative data relating to collective bargaining coverage and trade union density for 1980 and 1990 were taken from OECD (1994*a*); for 1994 values, see Annex 3.A. Bracketed 1980 collective bargaining coverage values indicate that information was not available and that 1990 values have been used. Values for centralisation and co-ordination were developed in previous work under the OECD's industrial relations programme and inspired by various other rankings undertaken by social research (see text).

Chart 3.1.

Trade union density and collective bargaining coverage rates, 1994[a]



a) All data refer to 1994 except: collective bargaining coverage in Canada (1993), Finland (1995), France (1995), Italy (1993), Japan (1995), Norway (1993) and Portugal (1993), and trade union density in Denmark (1993), Finland (1995), Germany (1993), Italy (1992), the Netherlands (1993), Portugal (1990), Sweden (1993) and Switzerland (1992).

Source: See Annex 3.A.

Table 3.4. **Comparison of collective bargaining rankings in selected studies**[a]

	Soskice[b] 1990	Calmfors/Driffill[c] 1988	Bruno/Sachs[d] 1986	Blyth[e] 1979	Schmitter[f] 1981	Cameron[g] 1984	Tarantelli[h] 1986	Lehmbruch[i] 1984	Lijphart/Crepaz[j] 1991	Layard/Nickell/ Jackman[k] 1991
Australia	. .	8	3	10	. .	9	10	3	4	7
Austria	10	17	17	16	15	16	16	15	18	17
Belgium	. .	10	9	8	9	15	6	10	10	11
Canada	. .	1	2	1	5	5	5	3	2	3
Denmark	. .	14	11	13	12	13	12	10	14	17
Finland	. .	13	10	12	12	14	8	10	11	17
France	3	7	5	5	3	2	3	18	7	11
Germany	6	12	16	9	8	11	15	10	12	14
Italy	4	5	4	3	1	6	1	6	6	7
Japan	11	4	8	6	. .	3	14	18	9	11
Netherlands	5	11	15	7	10	12	9	15	15	11
New Zealand	. .	9	7	11	. .	. .	4	3	3	3
Norway	8	16	13	15	14	17	11	15	17	17
Portugal	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .
Spain	. .	. .	. .	. .	. .	1	. .	. .	. .	7
Sweden	7	15	13	14	12	18	13	15	16	17
Switzerland	9	3	12	. .	7	7	. .	10	13	11
United Kingdom	2	6	6	4	2	10	2	6	5	3
United States	1	2	1	2	5	4	7	3	1	3
Rank correlation with trade union density[l]	0.32	0.71***	0.34	0.74***	0.65**	0.88***	0.25	–0.01	0.43*	0.53**
Rank correlation with collective bargaining coverage[l]	0.17	0.70***	0.46*	0.55**	0.46*	0.57**	0.24	0.21	0.52**	0.69***
Rank correlation with centralisation/ co-ordination rank[l]	0.79***	0.78***	0.67***	0.87***	0.84***	0.68***	0.69***	0.46*	0.75***	0.84***

. . Data not available.
* Significant at the 10 per cent level.
** Significant at the 5 per cent level.
*** Significant at the 1 per cent level.
a) For consistency, a high rank (1 or 2, for example) implies a low degree of centralisation, co-ordination or corporatism.
b) Covert and overt co-ordination of unions and employers' associations.
c) Centralisation of unions and employers' organisations.
d) Centralisation of unions, shop-floor representation, employers' co-ordination, existence of works councils.
e) Level of bargaining, union and employers' co-operation.
f) Organisational centralisation and the number of unions.
g) Centralisation of unions, control capacity of central organisation, union membership.
h) Degree of ideological and political consensus of unions and employers, centralisation of bargaining, regulation of industrial conflict.
i) Influence of unions in the policy formulation process.
j) Average of several indices.
k) Unions' plus employers' co-ordination.
l) The Spearman rank correlations reported in the last three rows are computed using the collective bargaining information contained in Table 3.3 for 1980 or 1990, depending on which of these two years is closest to that indicated in the column title.
Sources: See bibliography [apart from Blyth, which is taken from Calmfors and Driffill (1988)].

centralisation measure. Finally, sector-level bargaining is predominant in continental Europe.

The existence of wage drift shows that centralisation measures do not reveal the whole picture: "centralised" bargaining can turn out to be uncoordinated if lower-level negotiations undermine its intentions. Nor is centralisation a necessary condition for co-operation in bargaining: co-ordination among dominant employers and unions in a decentralised or industry bargaining setting, and pattern bargaining, where certain dominant employers and unions act as *de facto* leaders, may be an alternative to, or a functional equivalent of, centralisation, and can result in economy-wide co-ordinated outcomes. Germany and Switzerland have traditionally co-ordinated bargaining, as shown by high scores on the co-ordination measure, despite separate negotiations taking place for each industry; the increased importance of industry-level bargaining in Austria in the 1980s has not significantly reduced the degree of co-ordination there [Traxler *et al.* (1996)]. Despite the preponderance of enterprise bargaining in Japan, unions and, in particular, employers' associations often co-ordinate bargaining strategies among individual members [Sako (1997)].[12] Denmark, Finland and Norway are also characterised by co-ordinated bargaining, while bargaining in Canada, New Zealand, the United Kingdom and the United States is uncoordinated.

The degree of centralisation and co-ordination has changed considerably in a number of countries over the past fifteen years. For example, in Sweden centralised bargaining weakened and finally disappeared, a move which was echoed to a lesser extent in a few other Nordic countries [Due *et al.* (1994); Visser (1996*a*); Wallerstein and Golden (1997); Wise (1993)]. The recent experience of New Zealand shows how rapidly changes can occur. Between 1989 and 1994, as a direct effect of changes in legislation, the number of workers covered by collective bargains decreased by one-half, while the share of workers covered by multi-employer contracts fell even more, from 90 to 14 per cent [Harbridge and Honeybone (1996)]. Notable decentralisation has also taken place in Australia [Brosnan and Bignell (1994)] and the United Kingdom [Millward *et al.* (1992)]. However, there has been no uniform trend across OECD countries towards more decentralised bargaining: in some countries, such as Italy, Norway and Portugal, bargaining became more centralised and/or co-ordinated (through tripartite agreements, "social pacts", etc.), while in others the degree of centralisation and co-ordination did not change. In some cases, there were even simultaneous movements in both directions.

The comparison of OECD Secretariat measures of collective bargaining described above with other measures proposed in the literature is undertaken in Table 3.4. The information on trade union density, collective bargaining coverage, centralisation and co-ordination in Table 3.3 also includes ranks for each of these measures for each year. The bottom three rows of Table 3.4 present the Spearman correlation coefficients between the ranks from Table 3.3 and the other rankings in Table 3.4. For the purpose of this comparison, three ranks have been used: the ranks of trade union density and collective bargaining, taken directly from Table 3.3, and a composite rank which is calculated as the rank of the sum of the centralisation and co-ordination ranks. The correlation coefficient is calculated for the year closest to that at the head of each of the columns. For example, the correlations with Calmfors and Driffill's ranking are calculated using 1990 values from Table 3.3, whereas those for Schmitter use the 1980 values.

The results show that Table 3.3's centralisation and co-ordination index is correlated strongly with almost all of the other indices of centralisation or corporatism used in the literature. However, both trade union density and collective bargaining coverage are correlated at the 5 per cent level with only half of the ten indices in Table 3.4.

D. SIMPLE CORRELATIONS BETWEEN ECONOMIC PERFORMANCE AND COLLECTIVE BARGAINING

1. Measures of economic performance

This section reports the results of correlating the following performance indicators to the level of collective bargaining variables in 1980, 1990 and 1994: the unemployment rate, the employment/population ratio, inflation, real earnings growth and earnings inequality (measured as the ratio of the 9th decile of the earnings distribution to the 1st decile).

All of the variables, apart from earnings inequality, are measured as averages over the five-year period for which the date of the collective bargaining information represents the midpoint. For example, for the 1980 data, averages are taken over the period 1978 to 1982; for the 1994 data, the averages are taken over the period 1992 to 1996. Arithmetic averages are calculated for unemployment and the employment/population ratio, whereas geometric averages are calculated for inflation and real earnings growth. The use of five-year averages helps to control for the effects of the cycle.[13] The question of simultaneity will be addressed in Section E.

2. Collective bargaining and economic performance: linear correlations

The top half of Table 3.5 presents Spearman rank correlation coefficients between economic performance and collective bargaining indicators by year. Across all three of the collective bargaining indicators there are relatively few statistically significant correlations (12 out of 45). The only consistently significant set of results is that of a negative correlation between most of the collective bargaining indicators and earnings inequality.

3. Collective bargaining and economic performance: U-shaped/hump-shaped correlations

The bottom half of Table 3.5 investigates the statistical evidence for a U-shaped or hump-shaped relationship between collective bargaining and economic performance. This is undertaken using the following recoding of the collective bargaining ranks: ranks 1-10 are left unchanged and ranks 11-19 are replaced by the values 9 to 1, respectively. This procedure produces a ranking which is high for countries in the middle of the distribution and low for countries at either end. A positive correlation implies that intermediate countries (such as the Netherlands or Spain) have higher levels of the performance indicator than countries with either high or low ranks of the collective bargaining variables.

A variable which is negatively related to this ascending-descending ranking thus falls from the lowest value of the collective bargaining measure to the middle of the distribution, and then rises again for countries with the highest rankings. This method imposes that the U-shaped or hump-shaped relationships be symmetrical, with their maxima or minima at the midpoint of the distribution.

The results show that there are almost no significant U-shaped or hump-shaped correlations between economic performance and these three

Table 3.5. **Spearman rank correlation coefficients between collective bargaining and measures of economic performance**

	Simple ranking								
	Ranking by trade union density			Ranking by collective bargaining coverage			Ranking by centralisation/ co-ordination		
	1980	1990	1994	1980	1990	1994	1980	1990	1994
Performance measures									
Unemployment rate	–0.117	0.056	0.263	–0.050	0.193	0.423*	–0.280	–0.136	0.189
Employment rate	0.401*	0.224	–0.065	–0.211	–0.414*	–0.621***	0.289	–0.086	–0.451*
Inflation	0.212	0.205	–0.149	–0.098	–0.003	0.204	–0.325	0.018	0.142
Real earnings growth	–0.400*	–0.066	0.291	0.248	0.321	0.144	–0.035	0.087	–0.130
Earnings inequality	–0.572**	–0.607***	–0.371	–0.390	–0.341	–0.469*	–0.596**	–0.474**	–0.530**
	Ascending-descending ranking								
	Ranking by trade union density			Ranking by collective bargaining coverage			Ranking by centralisation/ co-ordination		
	1980	1990	1994	1980	1990	1994	1980	1990	1994
Performance measures									
Unemployment rate	–0.142	–0.039	–0.262	0.235	0.262	0.251	0.113	–0.135	–0.177
Employment rate	–0.142	–0.135	0.086	–0.452*	–0.321	–0.381	0.239	0.092	0.201
Inflation	–0.203	0.081	0.218	0.649***	0.404*	0.292	0.252	0.286	–0.126
Real earnings growth	0.287	0.060	–0.123	0.175	0.000	–0.086	–0.281	–0.388	–0.350
Earnings inequality	0.190	0.323	0.333	–0.356	–0.488**	–0.336	0.229	0.213	0.361

* Significant at the 10 percent level.
** Significant at the 5 percent level.
*** Significant at the 1 percent level.

Sources: OECD analytical database, except the data for earnings inequality, which were obtained from Table 5.2, *OECD Employment Outlook*, July 1993 and Table 3.1, *OECD Employment Outlook*, July 1996. From 1990 onwards, unemployment, employment and real wage data for western Germany were obtained from Statistiches Bundesamt Wiesbaden publications, except for the employment rate and real wage growth for 1995 and 1996, which are Secretariat estimates.

measures of collective bargaining. The only significant relationship of note is the hump-shaped one between collective bargaining coverage and inflation in 1980 and 1990, which becomes insignificant in 1994.

There are obvious drawbacks to the simple rank correlations presented here. First, they do not allow the joint relationship between economic performance and more than one measure of collective bargaining to be addressed. Second, the approach used in the bottom half of Table 3.5 imposes a certain symmetric form on the non-linear relationship, which may be inappropriate. Both of these issues are addressed by the use of multivariate regression techniques in the next section.

E. REGRESSION RESULTS ON ECONOMIC PERFORMANCE AND COLLECTIVE BARGAINING

To use the centralisation and co-ordination information in Table 3.3 in regression analysis, countries are split up into three separate groups. For the 1980 data, Australia, Austria, Denmark, Finland, Germany, Norway and Sweden are classified as centralised/co-ordinated; Belgium, Japan, the Netherlands, Spain and Switzerland are intermediate countries; and Canada, France, Italy, New Zealand, Portugal, the United Kingdom and the United States are decentralised/uncoordinated. This classification changes for 1990 as Portugal moves from decentralised/uncoordinated to intermediate; Denmark moves from centralised/co-ordinated to intermediate; and France moves from decentralised/uncoordinated to intermediate.[14] With respect to the 1994 data, Sweden moves from centralised/co-ordinated to intermediate. Italy moves to centralised/co-ordinated from decentralised/uncoordinated, while Australia moves in the opposite direction.[15]

1. Regression results: grouped data

Table 3.6 presents the results of Ordinary Least Squares regression analysis of all of the economic performance variables on four measures of collective bargaining: trade union density, collective bargaining coverage, and two dummy variables, one for a centralised/co-ordinated collective bargaining system, and the other for an intermediate bargaining

Table 3.6. **Measures of economic performance and characteristics of the collective bargaining system: pooled regression results, 1980, 1990 and 1994**[a]

	Unemployment rate	Employment rate	Inflation	Growth of real earnings	Earnings inequality
Estimated coefficients					
Trade union density	–0.018	0.192***	0.007	–0.003	–0.014***
	(0.027)	(0.050)	(0.022)	(0.007)	(0.004)
Bargaining coverage	0.075***	–0.235***	0.039*	0.016**	–0.006*
	(0.025)	(0.047)	(0.021)	(0.006)	(0.004)
Centralised/co-ordinated country	–2.921*	2.898	–2.966**	–0.584	–0.356*
	(1.517)	(2.820)	(1.225)	(0.367)	(0.212)
Intermediate country	–1.086	–0.001	–2.607**	0.219	–0.560***
	(1.248)	(2.320)	(1.008)	(0.302)	(0.181)
Year 1990	1.677	1.430	–5.215***	0.727**	0.013
	(1.184)	(2.201)	(0.956)	(0.286)	(0.171)
Year 1994	3.815***	–0.615	–7.145***	0.066	0.099
	(1.190)	(2.212)	(0.961)	(0.288)	(0.179)
Constant	2.246	72.701***	8.825***	–0.162	4.293***
	(1.890)	(3.514)	(1.526)	(0.457)	(0.270)
Number of observations	57	57	57	57	51
R-squared	0.283	0.424	0.610	0.289	0.534
F-statistic	3.29***	6.14***	13.04***	3.38***	8.40***
Residual sum of squares	644.4	2 227.5	420.3	37.7	10.6
Standard error of the residual	3.59	6.67	2.90	0.87	0.49

* Significant at the 10 per cent level.
** Significant at the 5 per cent level.
*** Significant at the 1 per cent level.
a) Standard errors are in parentheses.
Source: See Table 3.5.

system as discussed above. The omitted category for collective bargaining system is decentralised/uncoordinated. The estimated coefficients on the centralised/co-ordinated and intermediate dummy variables thus refer to the performance of these systems relative to that of decentralised/uncoordinated collective bargaining systems. This grouping of three years' worth of data produces a maximum of 57 observations. All regressions include year dummies for 1990 and 1994. All of the five equations are significant. The best-explained equations (as measured by the R^2 statistic) are those for inflation, earnings inequality and the employment rate.

The first two rows of Table 3.6 show that there is a positive relationship between trade union density and the employment rate, and a negative relationship with earnings inequality. Collective bargaining coverage exhibits a positive relationship with unemployment, real earnings growth and inflation, and a negative relationship with employment.

The most interesting results are those on the dummy variables for centralised/co-ordinated country and intermediate country. The U-shape hypothesis, outlined in Section B, suggests that centralised/co-ordinated countries and decentralised/uncoordinated countries should outperform intermediate countries. For positive performance indicators, such as the employment rate, this means that the coefficient of the centralised/co-ordinated variable may be either positive or negative, while that of the intermediate country dummy variable should be negative and smaller than that of the centralised dummy. For negative performance indicators, such as unemployment and inflation, the inverse relationship is predicted.

There is no clear evidence of such relationships in terms of the unemployment and employment rates: the only statistically significant result is that centralised/co-ordinated countries have lower unemployment rates. For inflation, centralised/co-ordinated and intermediate countries do equally well, both posting lower inflation figures than decentralised/uncoordinated countries. The strongest results relate to earnings inequality. Here the coefficients show that both centralised/co-ordinated and intermediate countries have more equal earnings distributions than decentralised/uncoordinated countries. The coefficient on intermediate countries is more negative than that on centralised/co-ordinated countries, but the difference between these two estimated coefficients is not statistically significant.

The conclusion is that intermediate countries perform no worse than centralised/co-ordinated countries in terms of inflation and earnings inequality, while decentralised/uncoordinated countries do. Centralised/co-ordinated countries have the lowest unemployment rates.

These results, again, appear to provide little support for the hypothesis that countries with intermediate levels of bargaining experience worse economic performance (the U- and hump-shape hypotheses).[16] The conclusion from this analysis is that intermediate countries sometimes do as well as centralised/co-ordinated countries and sometimes do as well as decentralised/uncoordinated countries, but in no case is their performance clearly inferior to both. In sum, the U-shape hypothesis simply does not stand up to the data.[17]

It is of interest to compare these results with those in Scarpetta (1996). This latter is a careful study of various measures of unemployment in 15 to 17 OECD countries, using both a static model with annual data from 1983 to 1993 and a dynamic model for the period 1970-1993. Unemployment is modelled as a function of active labour market policy expenditure, the unemployment benefit replacement rate, employment protection legislation, the cycle, and a number of other variables. Amongst these are indices of co-ordination and of centralisation, both of which are treated as cardinal variables. Specifications including co-ordination consistently show that more co-ordinated countries have lower unemployment rates. Specifications including the centralisation rank and its square, in an attempt to find U or hump-shaped relationships, find some evidence of a hump-shaped relationship. Co-ordination and centralisation are never included in the same specification, making comparisons with this chapter's results more difficult. The co-ordination finding is consistent with the results in Table 3.6. The weaker centralisation finding is not replicated in our results, which could come from the difference in countries and years analysed, or from the method used.

2. Specification and sensitivity analysis

This subsection considers several possible problems with the relatively simple methods used in Table 3.6. The first part focuses on questions of equation specification, and the second looks at the sensitivity of results to data outliers.

Specification issues

Three issues of model specification are examined: that there is simultaneity bias; that the construction of the centralised/co-ordinated and intermediate dummies is flawed; and that a more flexible estimation procedure consists in replacing these two dummy variables with the rank itself and its square, considered as cardinal variables.

The first point concerns the potential bias from the approach taken which relates collective bargaining variables in 1980, for example, to performance indicators which include information on *precedent* periods, in this case the average between 1978 and 1982. The bias comes from the possibility that the values of the collective bargaining variables might themselves be partly determined by prior macroeconomic performance. As a check, the analysis was rerun using economic performance data referring to the subsequent five-year period (which rules out the use of the 1994 data). The negative conclusion with respect to the validity of the U-shape hypothesis was unaffected by this change.

The second test is based on the discussion in Soskice (1990) regarding the relationship between centralisation and co-ordination. Thus far, the dummy variables have been treated as substitutes for each other, with the classification based on the sum of the ranks of the centralisation and co-ordination series. An alternative view is that what is important is whether a country has either centralisation or co-ordination at a high level.

Consequently, an alternative measure of centralised/co-ordinated and intermediate countries was constructed. A country is defined as "strongly centralised/co-ordinated" if, on the scale of the centralisation and co-ordination measures in Table 3.3, it had a value of 2.5 or above on either measure, and "intermediate" if it had at least one measure at level 2- or above, but none at 2.5 or above. An advantage of this approach is that it is absolute, taking into account the general move towards decentralisation/uncoordination of bargaining in OECD countries, whereas a rank-based system tends to label countries at the top of the rank corporatist, even if there has been a substantial movement in the entire distribution. In the event, this alternative classification made no general difference to the negative conclusion regarding the U-shape hypothesis.

The final specification issue concerns using the simple rank (and its square) of the sum of the centralisation/co-ordination ranks in Table 3.3 rather than dummy variables. This method has simplicity to recommend it, as well as being independent of judgements about which countries are really centralised/co-ordinated or intermediate. It does, however, treat rank variables as cardinal, which is incorrect. The results for unemployment and employment were consistent with those in Table 3.6, no significant relationship being found. However, the cardinal approach finds no relation between centralisation/co-ordination and inflation, instead of the strong results using the dummy variables in Table 3.6. On the other hand, the cardinal results show a very strong hump-shaped relationship between centralisation/co-ordination and real earnings growth, which was not found in any of the specifications with dummy variables. Also a very strong U-shaped relationship was found with earnings inequality, as opposed to Table 3.6's findings of no difference between centralisated/co-ordinated and intermediate countries, but much higher earnings inequality for decentralisated/uncoordinated countries. The earnings inequality results with the cardinal ranks are, however, very sensitive to the inclusion of Austria, which is not the case with the results using the dummy variables. These results suggest that the subjective grouping of countries by their collective bargaining attributes, which is the method preferred in this chapter, and searching for non-linear relationships using rank information treated cardinally are not always good substitutes for each other.

Outliers in the data

A final issue is the sensitivity of the results to outliers in the data. Details of the tests undertaken, and the ensuing estimation results, are provided in Annex 3.B. The overall conclusion from this investigation is that there is little change in the conclusions drawn from Table 3.6 when outliers are accounted for.

3. Interactions

Some analyses of the effects of collective bargaining on economic performance imply rather more complicated transmission mechanisms than those presented so far. There are obviously limits to the sophistication which can be used with only a small number of observations, but, as discussed in Section B, several theories which predict interaction effects of collective bargaining variables can be evaluated empirically. The results of these tests are summarised in Table 3.7.

First, centralisation and co-ordination could have different effects at different levels of trade union density or collective bargaining coverage. To evaluate this, the two dummy variables for centralisation and co-ordination rank were interacted with both union density and collective bargaining coverage and added to the regressions in Table 3.6. The results, in the upper panel of Table 3.7, show that the previous conclusions regarding the relationship between centralised/co-ordinated, intermediate and decentralised/uncoordinated countries are largely unchanged by these experiments. The interaction terms themselves are often insignificant. One notable finding is that there is some evidence that high collective bargaining coverage has a positive impact on the employment and unemployment performance of centralised/co-ordinated countries, but a negative effect on the employment and

Table 3.7. **Interactions between measures of economic performance and characteristics of the collective bargaining system**[a]

	Unemployment rate		Employment rate		Inflation		Growth of real earnings		Earnings inequality	
Estimated coefficients										
Collective bargaining interactions										
Trade union density and intermediate country	–0.063 (0.052)	×	0.039 (0.102)	×	–0.100** (0.044)	×	0.015 (0.013)	×	–0.003 (0.008)	×
Bargaining coverage and intermediate country	0.138*** (0.048)	×	–0.180* (0.094)	×	0.027 (0.040)	×	–0.023* (0.012)	×	0.010 (0.007)	×
Trade union density and centralised/co-ordinated country	×	0.065 (0.059)	×	0.034 (0.109)	×	0.041 (0.046)	×	0.006 (0.014)	×	0.002 (0.008)
Bargaining coverage and centralised/co-ordinated country	×	–0.137 (0.097)	×	0.381** (0.179)	×	–0.173** (0.077)	×	0.046* (0.023)	×	0.043*** (0.013)
Centralised/co-ordinated country	–1.236 (1.678)	5.292 (9.136)	0.258 (3.266)	–31.302* (16.789)	–3.540** (1.397)	9.622 (7.188)	–0.821* (0.423)	–4.807** (2.197)	–0.206 (0.248)	–4.141*** (1.242)
Intermediate country	–7.211** (3.350)	–1.413 (1.244)	9.508 (6.519)	0.473 (2.287)	–0.705 (2.790)	–2.936*** (0.979)	1.092 (0.844)	0.272 (0.299)	–1.076** (0.495)	–0.503*** (0.168)
Import interactions										
Centralised/co-ordinated country	–3.370** (1.471)	×	3.253 (2.850)	×	–3.119** (1.238)	×	–0.599 (0.374)	×	–0.360 (0.217)	×
Intermediate country and high imports	–2.591* (1.371)	×	1.191 (2.657)	×	–3.120*** (1.154)	×	0.168 (0.348)	×	–0.574*** (0.211)	×
Intermediate country and low imports	0.948 (1.498)	×	–1.610 (2.903)	×	–1.913 (1.261)	×	0.288 (0.380)	×	–0.539** (0.241)	×

× Not applicable.
* Significant at the 10 per cent level.
** Significant at the 5 per cent level.
*** Significant at the 1 per cent level.
a) All regressions also include trade union density, collective bargaining coverage, year dummies and a constant. Standard errors are in parentheses.
Sources: See Table 3.5. Import data come from OECD, *National Accounts 1960-1994,* 1996.

unemployment performance of intermediate countries. High bargaining coverage thus seems to exacerbate the unemployment difference found between centralised/co-ordinated and intermediate countries in Table 3.6.

A second hypothesis is that increased levels of foreign competition, by raising the price elasticity of product demand, make it harder for union bargaining at the sectoral level to raise wages. To test this, two new dummy variables were created: one for intermediate countries with a high level of imports as a percentage of GDP (defined as an import ratio greater than the median for the group of intermediate countries), the other for intermediate countries with a low level of imports.[18] The results are reported in the lower panel of Table 3.7. There is a notable difference between high and low-import intermediate countries in terms of their unemployment rates. High-import intermediate countries record just as good unemployment performance as centralised/co-ordinated countries, and better than decentralised/uncoordinated countries, which lends some support to the theoretical prediction regarding import penetration and economic performance.[19]

4. Changes over time

It is likely that countries differ in very many ways other than their collective bargaining systems and that these unobserved differences are significant determinants of economic performance. To the extent that such differences are also correlated with the collective bargaining system, their omission may lead to false inferences being drawn about the correlation between collective bargaining and economic performance. One way of resolving this problem is to examine changes in economic performance and changes in collective bargaining over time in the same country. The analysis of changes over time also avoids the thorny issue of making comparisons of levels of centralisation and co-ordination of bargaining between countries.

Chart 3.2 and Table 3.8 show the relation between the change in the economic performance indicators (defined, apart from earnings inequality, as the change in the average level of the indicator between 1980-1984 and 1990-1994) and the change in the centralisation/co-ordination of bargaining between 1980 and 1990. Countries are split into two groups: those which decentralised or moved towards more uncoordinated collective bargaining between 1980 and 1990 (Denmark, Finland, New Zealand, Spain, Sweden and the United Kingdom) and those which did not. These countries can be easily identified from the information in Table 3.3. A move towards decentralised or uncoordinated bargaining is defined as a reduction in either of the centralisation or co-ordination scores between 1980 and 1990 (in no case is there a reduction in one score and an increase in the other).

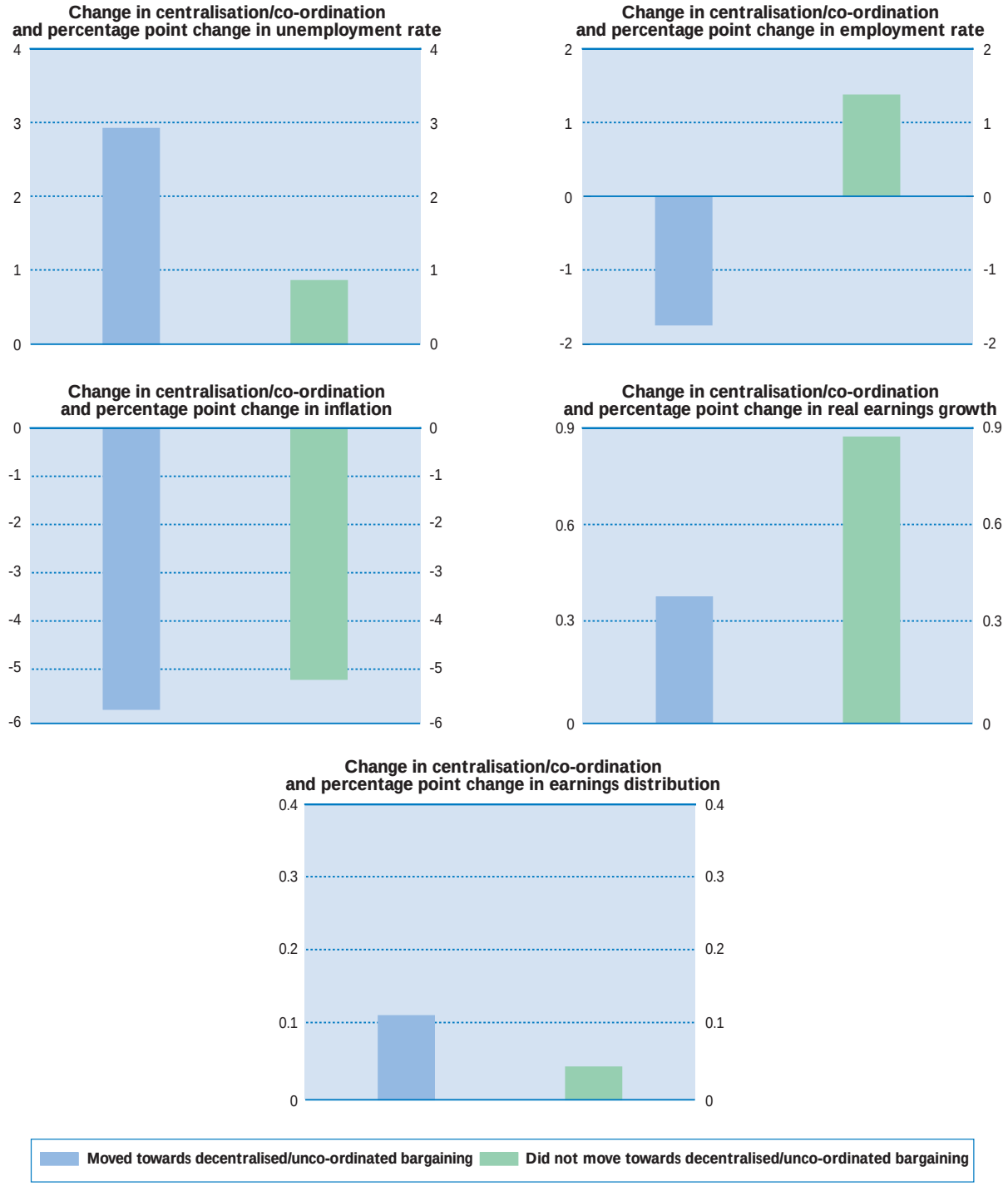
Chart 3.2 presents the simple means of the change in performance for these two groups of countries. Countries which moved towards decentralisation or uncoordinated bargaining between 1980 and 1990 recorded a larger rise in unemployment than those which did not; the mirror-image of this result is shown in the change in the employment rate. These differences are significant at the ten per cent level. In addition, countries which decentralised or moved towards uncoordinated bargaining experienced lower real wage growth compared with countries which did not make such changes in the collective bargaining system. Last, countries which decentralised or moved towards uncoordinated bargaining recorded a slightly larger increase in earnings inequality over the period.

These patterns can be formalised by regressions of the change in economic performance on the change in trade union density and collective bargaining coverage, plus a dummy variable indicating a move towards decentralisation/uncoordination in collective bargaining. The results are presented in Table 3.8. They show that there is a significant relationship, even with few observations, between this dummy variable and falling employment rates (changes in trade union density are positively correlated with the change in the unemployment rate, but not with the change in the employment rate). There is also weaker evidence that moves towards more decentralisation/uncoordination are associated with greater falls in inflation, but higher unemployment (both of these estimates are significant at between the ten and fifteen per cent level). There is no significant relationship between earnings inequality and moves towards more decentralisation/uncoordination. These results are robust to the sensitivity analysis described in Annex 3.B.

The ''change'' results for centralisation/co-ordination mostly mirror those in Table 3.6's pooled cross-section analysis. The exception is that with respect to earnings inequality. The coefficients in Table 3.6 show that earnings inequality is estimated to be higher in decentralised/uncoordinated countries, but that there is little difference in earnings inequality between centralised/co-ordinated and intermediate countries. The implication is that earnings inequality rises when the collective bargaining system changes from centralised/co-ordinated or intermediate to decentralised/uncoordinated. However, between 1980 and 1990 none of the six countries which moved towards a decentralised/uncoordinated bargaining system made this change of system (two were centralised/co-ordinated in both

Chart 3.2.

Change in economic performance and change in centralisation/co-ordination[a]



a) The change in centralisation/co-ordination levels refers to the change between 1980 and 1990; the change in economic performance is defined as the average level in 1990-1994 *minus* the average level in 1980-1984.

Source: See sources to Table 3.2 and Table 3.4.

Table 3.8. **Changes in measures of economic performance and changes in characteristics of the collective bargaining system**[a]

	Change in unemployment rate	Change in employment rate	Change in inflation	Change in growth of real earnings	Change in earnings inequality
Estimated coefficients					
Change in trade union density	0.167**	–0.114	0.261**	–0.103**	0.001
	(0.068)	(0.109)	(0.102)	(0.044)	(0.007)
Change in bargaining coverage	0.109	–0.209*	–0.272**	0.125**	–0.015*
	(0.073)	(0.117)	(0.110)	(0.047)	(0.007)
Moved towards a decentralised/ unco-ordinated collective bargaining system	1.622	–3.207*	–2.586	0.342	0.010
	(1.044)	(1.682)	(1.577)	(0.674)	(0.107)
Constant	2.222***	0.327	–3.389***	0.214	0.039
	(0.753)	(1.213)	(1.137)	(0.486)	(0.078)
Number of observations	19	19	19	19	17
R-squared	0.457	0.350	0.469	0.476	0.285
F-statistic	4.21**	2.70*	4.41**	4.55**	1.73
Residual sum of squares	58.9	152.6	134.1	24.5	0.5
Standard error of the residual	1.98	3.19	2.99	1.19	0.19

* Significant at the 10 per cent level.
** Significant at the 5 per cent level.
*** Significant at the 1 per cent level.
a) Standard errors are in parentheses.
Source: See Table 3.5.

1980 and 1990, one moved from centralised/co-ordinated to intermediate, one remained intermediate, and two were decentralised/uncoordinated in both years).

F. CONCLUSIONS

Following an influential article published in 1988 by Calmfors and Driffill, the hypothesis that the relation between the centralisation of bargaining institutions and employment is U-shaped, and that with unemployment is hump-shaped, has attracted much attention. This chapter has investigated this proposition in a number of ways. An initial update of Calmfors and Driffill's original table showed some weak evidence that intermediate, as opposed to centralised or decentralised, countries exhibit worse economic performance, as measured by their rates of unemployment and inflation.

However, centralisation is not the only important characteristic of collective bargaining. The degree of unionisation, the coverage of collective bargaining and the degree of co-ordination in bargaining should also be considered. This chapter has sought to assess the impact of these other facets of collective bargaining systems on performance. Accurate assessments of the impact of different systems of collective bargaining on measures of labour market performance, such as unemployment or employment rates, are difficult in part because of the complexity of specifying the interactions of and measuring each facet of these systems. While it is somewhat hazardous to make global statements, the statistical results presented, whether based on simple correlations or multivariate analysis, are best characterised as ''negative'' in the sense that there seems to be little robust evidence for either a U-shaped relation between the structure of collective bargaining and employment or a hump-shaped relation with the unemployment rate. Indeed, in many instances, the analysis has not found statistically significant relationships between measures of economic performance and collective bargaining, whether the latter is proxied by measures of trade union density, collective bargaining coverage or the centralisation and co-ordination of bargaining. One exception to this is that there is a fairly robust relation between cross-country differences in earnings inequality and bargaining structures. More centralised/co-ordinated economies have significantly less earnings inequality compared with more decentralised/uncoordinated ones.

Further analysis showed no strong evidence of an interaction between centralisation/co-ordination

and the level of either trade union density or collective bargaining coverage. There is, however, some evidence supporting the prediction that intermediate countries with higher levels of imports as a percentage of GDP have better economic performance than intermediate countries with lower import penetration.

Finally, the examination of changes in collective bargaining characteristics and changes in economic performance tentatively suggest that countries which moved towards decentralisation or less coordination over the past decade have experienced larger declines in the employment rate than countries which did not experience such decentralisation/uncoordination.

To conclude, many of the statistical results show little in the way of significant statistical relations between measures of economic performance and certain indices of bargaining systems, with the major exception of earnings inequality. A key question is how one can interpret such findings. While they raise serious doubts about the robustness of the conclusions of some previous research which claimed to have found significant relations (*e.g.* a "hump-shaped" relation between unemployment and a "U-shaped" one between employment and the ranking of countries from less to more decentralised bargaining), it is probably premature to consider the issue settled. Labour market performance indicators are undoubtedly affected by a number of institutional factors and policy instruments. Some may themselves be independent of a country's system of collective bargaining, while others may interact in complex ways with bargaining variables. More analysis is necessary to elucidate whether there are any robust relations between bargaining systems and economic performance.

Notes

1. Golden and Wallerstein (1996) present a detailed summary of collective bargaining in 15 OECD countries from 1950 to 1990; see also Katz (1993). Recent European developments are discussed in van Ruysseveldt and Visser (1996) and Crouch and Traxler (1995).
2. For example, Henley and Tsakalatos (1993, p. 2) maintain that corporatist institutional features "have enabled a more prolonged achievement of full employment than where such corporatist features were absent".
3. The concession bargaining which has occurred in several countries in recent years [Mitchell (1994)] is an illustration of the recognition by both firms and unions of the link between costs, and thus prices, and output and employment.
4. If workers are altruistic, externalities may be taken fully into account without the presence of centralised wage bargaining. However, it seems unlikely that altruism is pervasive enough in practice to internalise completely the effects on others. It should be noted also that not all externalities will be internalised under centralised bargaining, as those who consume and/or pay taxes, but do not work, are not directly represented in the bargaining process.
5. Another strand of research has considered the relationship between collective bargaining and productivity, which is not explored in this chapter. This relationship is, *a priori*, ambiguous [Metcalf (1993)]. For instance, unions may discourage investment by their ex-post appropriation of rents and as a result of the investment externality described above. On the other hand, they may be associated with higher productivity growth because higher wages induce substitution towards capital or because of union "voice" effects encouraging participation and discussion [Freeman and Medoff (1984)] which may, among other things, lead to greater efforts by firms to train workers [Green *et al.* (1996)]. In addition, in a standard labour demand framework, higher real wages, and their associated lower employment, imply higher average productivity for those who remain employed.
6. An analogous issue, which is not discussed in this chapter, is the interaction between bargaining and the degree of accommodation of monetary policy to any bargained wage rise: see Bleaney (1996) and Iversen (1996).
7. These points are partially supported by statistical tests of the hypothesis that intermediate countries have worse average economic performance than do either centralised or decentralised countries. For the level variables, only the difference in the employment rate between intermediate and decentralised/centralised countries is statistically significant. However, the mean change in the unemployment rate, the employment/population ratio, and the API are all significantly different (at the 10 per cent level) between intermediate and non-intermediate countries. In every case, the average change in performance is worse for intermediate countries.
8. A similar approach has recently been taken by Traxler *et al.* (1996).
9. Some caution is warranted in the interpretation and comparison of the data on trade union density and collective bargaining coverage, as they are measured with error and very often do not come from the same source. Some countries in Chart 3.1 have collective bargaining coverage rates which are lower than their union density figures. This may result in part from the difficulty of making accurate calculations of the coverage of collective bargains [see Sako (1997) for the case of Japan] and from the different data sources used. In addition, as noted by Scheuer (1997) with respect to the Danish figures, union members are often present in firms where collective bargaining does not take place.
10. Legal extension arrangements may influence both trade union density and the degree of organisation of employers. With legal extension, some workers gain the benefits of collective agreements without being union members. This may make workers less likely to join a union. On the other hand, employers will have a greater interest in influencing the results of negotiations, if they know that these will apply to their firms irrespective of whether they bargain with a union or not. Thus, the existence of extension arrangements creates a greater incentive to join the employers' association.
11. The trade union density and collective bargaining coverage figures in Table 3.3 are not very strongly correlated: a regression of the latter on the former produces R^2 coefficients of less than 20 per cent in each of the years examined.
12. Blyth (1979, p. 75) defines centralisation as "the extent to which trade union and employer organisations are federated or joined into strong central bodies at the national level with substantial executive (negotiating) powers capable for instance of negotiating with one another and dealing with government on behalf of their members". Calmfors and Driffill's definition of centralisation as "the extent of inter-union and inter-employer co-operation in wage bargaining with the other side", as well as their two operationalised measures "co-ordination level within central organisations" and "existence of parallel central organisations and their co-operation" relate, in fact,

more to "co-ordination" than to "centralisation". Rowthorn (1992*a*) also argues that co-ordination of wage bargaining does not necessarily depend on formal structures since unions may co-ordinate wage bargaining irrespective of the degree of formal centralisation. For example, in Germany regional settlements by the metal workers union usually set the benchmark for wage increases in the metal industry as a whole, followed by those for other industries. As indicated above, Table 3.3 has tried to take these considerations into account by providing separate rankings for centralisation and co-ordination.

13. Although not shown here, the addition of a variable measuring the output gap (defined as the ratio of actual total economy output to its potential) to the regressions reported has no effect on the results. This variable is always very insignificant in these regressions, suggesting that this use of five-year averages does indeed iron out a lot of the cyclical effects.

14. There is some doubt regarding this movement in France's classification, as it can be argued that French bargaining remained decentralised during the 1990s [Barrat *et al.* (1996)]. The results in Table 3.6 are not changed by the question of France's classification.

15. The approach taken in this chapter, to assign countries to broad groups reflecting their bargaining system, precludes the use of country dummies in the regressions, as these would be very collinear with the centralised/co-ordinated and intermediate dummy variables.

16. Many different specifications were investigated, without altering the conclusion that there is little evidence for the U-shape/hump-shape hypothesis. These include: dropping trade union density; dropping collective bargaining coverage; using a cardinal specification of the centralisation/co-ordination variable and adding country dummies; not using the observations for which collective bargaining coverage information is missing in 1980 (and which are therefore in parentheses in Table 3.3); and adding the output gap, the replacement rate, expenditure on active labour market policies and an index of employment protection. In addition, there is little evidence of the key relationships changing when the three years of data are examined separately. The exception is inflation. In 1980, intermediate countries have the best inflation performance. The size of the estimated coefficient falls in 1990, although remaining significant, but becomes insignificant in the 1994 results (this same pattern is apparent in the correlation coefficients in Table 3.5).

17. How can this conclusion be squared with the numbers presented in Table 3.2, which seemed to show that intermediate countries performed worse than both centralised and decentralised countries? The resolution of this apparent contradiction could lie in the ranking given to countries, the countries included in the sample (Calmfors and Driffill's work does not include either Spain or Portugal), or the presence of control variables for the union density rate and collective bargaining coverage rate in the analysis. The question of ranking the 17 countries that are common to both samples is likely to be a crucial one: of these 17 countries, six are ranked differently in 1980, eight in 1990 and nine have different rankings in the 1994 data. To test whether it is the difference in ranking that lies behind the lack of support found for the U-shape hypothesis, the regressions in Table 3.6 were re-estimated with the two dummy variables for centralisation and co-ordination ranking being replaced by those based on the Calmfors and Driffill ranking. Only unemployment, employment and inflation are analysed as they are the performance measures common to the two investigations. The results, for a number of different specifications, although not shown here, show no evidence that intermediate countries (on Calmfors and Driffill's definition) do worse than decentralised countries in terms of unemployment or employment, and that they outperform them with respect to inflation. The conclusion from this analysis is that it is not the countries included nor the "explanatory" variables added which is driving these results. This can be seen from Table 3.2. The largest part of the "U-shape" almost always comes from the superior economic performance of centralised/co-ordinated countries. The only significant difference (at the 10 per cent level) between intermediate and decentralised/uncoordinated countries is that for the change in the Okun index from 1974-1985 to 1986-1996. For every other performance measure in Table 3.2, there is little to choose between intermediate and decentralised/uncoordinated countries.

18. The high-import intermediate countries are the Netherlands, Switzerland (1980 and 1990), Belgium (1980), Denmark (1990) and Portugal (1994).

19. The same results can be obtained analysing intermediate countries by their level of exports relative to GDP.

ANNEX 3.A

Sources of data on trade union density and collective bargaining coverage

General

Where data are based on sample surveys, coverage rates were calculated directly from them. Otherwise, the coverage rate was calculated on the basis of the number of employees covered by a collective agreement divided by the corresponding total number of wage and salary earners. Data on total wage and salary earners were taken from OECD *Labour Force Statistics*. Data on trade union density for all European countries are from Visser (1996*b*).

Sources and methods by country

Australia

Trade union density data are calculated from an August 1994 survey of trade union members carried out as a supplement to the monthly labour force survey [Australian Bureau of Statistics, *The Labour Force in Australia*, December 1994]. The figure for collective bargaining coverage was supplied by the Department of Industrial Relations and the Australian Bureau of Statistics.

Austria

The figure for collective bargaining coverage was supplied by Franz Traxler, University of Vienna, based on the methodology outlined in the *Employment Outlook* [OECD (1994*a*)].

Belgium

There are no official coverage statistics; an estimate of the collective bargaining coverage rate was provided by an expert at the Ministry of Employment and Labour.

Canada

The trade union density figure comes from the 1995 OECD *Economic Survey* of Canada. Collective bargaining data were supplied by Statistics Canada from the 1993 Survey of Labour Income and Dynamics (SLID).

Denmark

An estimate of collective bargaining coverage, on the basis of a number of questions in a survey of 1 720 employees, was taken from Scheuer (1997), who emphasizes that previously published figures appear to be substantially over-estimated. In the absence of additional information concerning the evolution of collective bargaining coverage, the 1994 figure of 69 per cent has been taken to apply to 1990 also.

Finland

The collective bargaining coverage rate was provided by the Ministry of Labour on the basis of data from the *Statistical Yearbook of Finland*.

France

There are no published figures on collective bargaining coverage. The 95 per cent coverage figure used comes from an estimate by the Direction des Relations du Travail that 800 000 wage and salary earners do not have their pay determined by collective bargains [communication from Claude Siebel, Director of Direction de l'Animation de la Recherche, des Etudes et des Statistiques (DARES)].

Germany

Collective bargaining coverage rates were communicated directly by the Ministry for Labour and Social Affairs.

Italy

Collective bargaining covers all workers in theory. The rate of collective bargaining coverage was then estimated by Istituto Nazionale per lo Studio della Congiuntura (ISCO), using National Accounts data, as 100 minus the estimated share of informal workers (irregular workers, illegal immigrants, etc.).

Japan

The *Year Book of Labour Statistics* contains data on bargaining coverage compiled from information provided by unions. The main difference from all other figures used in this chapter is that these data refer only to union members covered by a collective agreement. In 1995, about 30 per cent of persons belonging to trade unions were not covered by such agreements.

To calculate the actual collective bargaining coverage rate, the figure for members covered by collective agreements is taken (*Year Book of Labour Statistics*, 1995, Table 191), minus the small number of government-sector union members (from the same table) who, in general, cannot conclude collective bargains. This study then uses data on the difference between unionisation and bargaining coverage in the United States, whose labour relations system, in terms of bargaining level and union density, somewhat resembles that of Japan. In the United States, the total number of employees covered by collective agreements exceeded the number of union members in 1995 by 12.1 per cent. This percentage was used to estimate Japan's total bargaining coverage. The denominator

of the collective bargaining coverage rate is calculated as the total number of wage and salary earners (*Year Book of Labour Statistics*, Table 4), adjusted to exclude the number of employees in the government sector (OECD Analytical Database).

Trade union density figures are taken from the *Year Book of Labour Statistics* 1994, Tables 4 and 211.

Netherlands

Data on coverage are taken from Table 1.2 of *CAO-AFSPRAKEN*, 1995 (Ministry of Social Affairs and Employment, Den Haag, February 1995). The denominator of the collective bargaining rate is calculated as the total number of wage and salary earners (OECD *Labour Force Statistics, 1974-94*).

New Zealand

Data on trade union membership and collective bargaining coverage were supplied by Raymond Harbridge, Industrial Relations Centre, Victoria University. Employment data are taken from the *Household Labour Force Survey*. Union membership density is the ratio of union membership to average full-time equivalent (FTE) employment in the concurrent and previous three quarters. FTE is defined as full-time plus one-half of part-time workers.

Norway

The estimates for collective bargaining coverage come from a 1993 survey described in Torunn S. Olsen, "EUs arbeidslivspolitikk: Nasjonale og europeiske utfordringer", *Tidsskrift for samfunnsforskning*, No. 4, Vol. 36, 1995.

Portugal

Collective bargaining coverage figures were supplied by the Industrial Relations Division of the Ministry of Education and Employment.

Spain

Estimates of collective bargaining coverage have been revised relative to those in OECD (1994*a*) according to figures and interpretation supplied by the Ministerio de Trabajo y Asuntos Sociales. The number of workers covered by collective bargains are from the *Boletin de Estadisticas Laborales*, Ministerio de Trabajo y Asuntos Sociales. Information is given on both the number of workers covered by firm agreements and the number of workers covered by sector agreements. It is estimated that 80 per cent of the former are also counted in the latter and a correction has been made for this double counting.

Sweden

Data were compiled by Christian Nilsson of Uppsala University from reports of private-sector agreements between trade unions and employers' associations, and from agreements between individual employers and trade unions.

Switzerland

Collective bargaining coverage is described in detail in Dario Lopreno, "Conventions collectives de travail (CCT) en vigueur en Suisse au 1er mai 1994", *Vie économique*, 10/95.

United Kingdom

Collective bargaining for 1990 was calculated using the *New Earnings Survey* and *Workplace Industrial Relations Survey* [see OECD (1994*a*)]. This figure was updated to 1994 using the change in coverage recorded in the 1990 and 1994 *Time Rates of Pay and Hours of Work* surveys.

United States

Both trade union density and the collective bargaining coverage rate come from Table 40 of *Employment and Earnings*, January 1995, which is based on figures from the Current Population Survey.

ANNEX 3.B

Sensitivity analysis of outliers in the data

There are a great number of tests that can be carried out to detect the presence of outliers. The two approaches adopted here both rely on information captured in measures of *residuals* and *leverage*. A large residual (e_i) is one for which the fitted or predicted value is far from the observed value; an observation with high leverage (h_i) is one for which the values of the explanatory variables are far removed from those of most of the other observations.

The first approach consists of a search for outliers from the regression analysis. Exclusion is based on the value of the *studentised residuals*, $r_i = e_i/(s_{(i)}\sqrt{(1 - h_i)})$, where $s_{(i)}$ is the root mean square error of the regression omitting observation i.[1] The r_i can be interpreted as the t-statistic for testing the significance of a dummy variable representing observation i. Values of r_i greater than two indicate an outlier. The pooled regressions in Table 3.6 were then re-estimated excluding outliers.

The second method uses a technique for dealing with potentially over-influential observations. The data are first filtered, with all observations having a value of Cook's Distance greater than one being dropped.[2] Subsequently, as suggested by Li (1985), Huber iterations are performed followed by biweight regressions (in which the weights run

Table 3.B.1. **Measures of economic performance and characteristics of the collective bargaining system: pooled robust regression results, 1980, 1990 and 1994**[a]

	Unemployment rate	Employment rate	Inflation	Growth of real earnings	Earnings inequality
Estimated coefficients					
Trade union density	0.005	0.190***	0.009	0.000	–0.013***
	(0.024)	(0.054)	(0.015)	(0.007)	(0.005)
Bargaining coverage	0.059**	–0.227***	0.019	0.016**	–0.008*
	(0.022)	(0.050)	(0.014)	(0.007)	(0.004)
Centralised/co-ordinated country	–3.088**	2.985	–1.482*	–0.689*	–0.438*
	(1.314)	(2.995)	(0.859)	(0.398)	(0.231)
Intermediate country	–1.835*	–0.354	–2.332***	0.135	–0.608***
	(1.081)	(2.465)	(0.707)	(0.327)	(0.197)
Year 1990	1.590	1.545	–4.181***	0.634**	0.022
	(1.026)	(2.338)	(0.671)	(0.310)	(0.186)
Year 1994	3.185***	–0.379	–5.733***	–0.042	0.043
	(1.031)	(2.350)	(0.674)	(0.312)	(0.195)
Constant	2.492	72.233***	8.075***	–0.106	4.281***
	(1.638)	(3.732)	(1.071)	(0.495)	(0.294)
Number of observations	57	57	57	57	51
R-squared	0.255	0.387	0.681	0.239	0.513
F-statistic	2.85**	5.26***	17.81***	2.62**	7.74***
Residual sum of squares	483.8	2 512.9	206.9	44.3	12.5
Standard error of the residual	3.11	7.09	2.03	0.94	0.53
Countries/years omitted (°) or given low weight (< 0.2)	*Spain 1994* *Spain 1990*	×	*Portugal 1980°* *Spain 1980°* *Portugal 1990* *Italy 1980* *Norway 1980*	×	*Portugal 1994* *Austria 1980* *Austria 1994*

× Not applicable.
* Significant at the 10 per cent level.
** Significant at the 5 per cent level.
*** Significant at the 1 per cent level.
a) Standard errors are in parentheses.
Source: See Table 3.5.

from zero, for omitted observations, to one). The results of this second procedure are reported in Table 3.B.1. They are very similar to those given by the earlier "manual" analysis (which are therefore not reported).

The countries which are omitted from the analysis or which are given low weights are listed at the foot of each column of results. The significant differences between the results from this procedure and those in Table 3.6 are as follows: the results now suggest that both centralised/co-ordinated and intermediate countries experienced significantly lower levels of unemployment, as opposed to only the former beforehand. The results for the inflation rate continue to show both centralised/co-ordinated and intermediate countries experiencing lower levels of inflation than decentralised/uncoordinated countries. The results for earnings inequality and growth of real earnings are largely unchanged from those in Table 3.6. There is no relation between collective bargaining coverage and inflation in the robust results. The inflation equation is the one which exhibits the most influential observations at the foot of the table.

Notes

1. Alternative tests consist of analysing leverage versus residual-squared (L – R) plots or of considering DFITS coefficients, where $DFITS_i = r_i/\sqrt{(h_i(1 - h_i))} = e_i/(s_{(i)}\sqrt{h_i})$. Both of these approaches are taken in Scarpetta (1996).
2. Cook's Distance is related to the DFITS statistic as $D_i = s_{(i)}^2 DFITS_i/ks_i^2$, where k is the number of variables (including the constant) in the regression and s_i is the root mean square error of the regression including the ith observation.

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CHAPTER 4

Trade, earnings and employment: assessing the impact of trade with emerging economies on OECD labour markets

A. INTRODUCTION AND MAIN FINDINGS

1. Introduction

Over the past two decades, the labour market position of unskilled workers appears to have worsened in most OECD countries. The clearest indicator of this deterioration is the marked increase in the unemployment rate of unskilled workers relative to their skilled counterparts. As a result, in all countries, unemployment rates for unskilled workers are several times higher than for skilled workers. In addition, in some countries, the earnings of unskilled workers have declined in relative (and sometimes real) terms [OECD (1996*a*)]. The fact that relative earnings and/or unemployment of unskilled workers have shown similar trends in most of the OECD area suggests that global forces might be at work. Two explanations have been much discussed in the literature, namely increased trade with so-called ''low-wage'' countries and technological change biased against the use of unskilled labour.[1]

International trade is a powerful engine of wealth creation. However, even if trade liberalisation raises a nation's economic welfare, this does not necessarily imply that all economic actors will gain from it. Globalisation has brought about an increase in trade for OECD countries with countries whose living standards and labour costs are much lower than theirs. To the extent that low-wage countries are specialised in sectors that are relatively intensive in the use of their abundant factor of production (unskilled labour), it is often argued that imports from such countries could negatively affect the demand for unskilled workers in OECD countries. This would show up in either falling relative earnings or higher relative unemployment for the unskilled, depending on the degree of rigidity in wages and prices. To the extent that the OECD countries are specialised in sectors that are relatively intensive in skilled labour, exports of these products should raise the relative demand for skilled labour.

On the other hand, many observers have pinpointed skill-biased technical change as the most likely culprit. They argue that the rapid diffusion of information technologies and computers, as well as the adoption of new forms of work organisation, has tended to increase the demand for skilled relative to unskilled labour in all countries.

Much of the literature treats trade and technology as two separate factors, but it is important to note that they may well be inter-related processes. In a context of stronger international competition, firms may come under increasing pressure to adopt new technologies quickly [OECD 1996*b*)]. Technological progress, in turn, can support the expansion of international trade in a variety of ways which are well described in the so-called ''new trade theories''.

Despite the proliferation of empirical research recently on the topic, few attempts have been made to examine the issue of trade and labour markets in a comparative perspective. Most empirical studies to date focus on the United States' experience. In addition, many of these studies have been criticised on the grounds that the assumptions underlying the analysis are unrealistic – such as, for example, when labour markets are assumed to be perfectly flexible. Finally, research is often mute on what is meant by ''skill''.

The purpose of this chapter is to evaluate the labour-market impact of trade between the OECD countries and a group of emerging economies (EEs), in particular to assess whether such trade has contributed to the observed deterioration in the labour market position of unskilled workers in OECD countries. The emerging economies are: Argentina; Brazil; Chile; China; Chinese Taipei; Hong Kong, China; India; Indonesia; Korea; Malaysia; Singapore; and Thailand. These economies were chosen because of their economic dynamism and because they account for most of non-OECD manufacturing trade. The chapter starts with a description of recent trends in OECD labour markets, including a discussion of the concept of skill (Section B). Patterns of trade with EEs are reviewed in Section C. The channels through which trade with EEs may affect OECD labour markets are outlined in Section D which also presents results of an empirical analysis of the issues, based

on a microeconomic data base. Policy implications are discussed in Section E.

2. Main findings

First, there is clear evidence of a worsening in the labour market position of unskilled workers. Between 1980 and the early 1990s, in all OECD countries, the employment rate of low-skilled workers fell relative to their skilled counterparts. As a result, in most countries, their unemployment rate is two-to-three times higher than the rate for skilled workers. The picture for earnings differentials is less clear: only in the United Kingdom, the United States, as well as in the manufacturing sector of New Zealand, is there clear evidence of a deterioration in the earnings of unskilled compared with skilled workers.

These trends cannot be ascribed to labour supply factors alone. In fact, the relative supply of less-educated workers has tended to decline in most countries, a trend which, other things being equal, should have contributed to reducing wage inequalities. The evidence points rather to relative demand shifts as a major driving force.

Second, imports of manufactures from the EEs as a share of OECD GDP have increased from 0.3 per cent in 1967 to 1.6 per cent in 1994. The United States, Canada and the Netherlands experienced the fastest import growth from these countries. Though the increase is substantial, these imports still represent a very small share of GDP in most OECD countries. In addition, OECD exports of manufactures to the EEs have grown broadly in line with imports so that total trade in manufactures has remained close to balance throughout the period.

Third, a sectoral breakdown of imports from the EEs suggests that their incidence is especially high in sectors characterised by both relatively low earnings and a high incidence of manual labour, *e.g.* textiles and clothing. Whereas imports from the EEs are often concentrated in a few products, OECD exports to these countries tend to be more broadly-based. Nonetheless, the incidence of exports to the EEs is relatively high in several sectors where earnings are, on average, relatively high and the incidence of manual labour relatively low, *e.g.* machinery and equipment. These facts point to differences in labour endowments as one key determinant of trade flows between OECD countries and the EEs.

Fourth, conventional trade theories predict that, under certain circumstances, freer trade between skilled-labour-abundant OECD countries and unskilled-labour-abundant EEs will lead to a decline in the relative price of unskilled-labour-intensive products imported from low-wage countries. Lower prices, in turn, will exert pressures on labour markets. A slow rate of productivity growth in unskilled-labour-intensive sectors relative to skilled-labour-intensive sectors produces similar theoretical predictions. During the 1980s, relative import prices in import-competing sectors in OECD countries declined, while export prices rose in export-oriented sectors. In the light of this fact and the finding that import-competing sectors tend to be unskilled-labour-intensive, the possibility that trade with the EEs may have contributed to the labour market problems of unskilled workers in OECD countries cannot be excluded on *a priori* grounds.

This issue is not easy to assess quantitatively. No dominant empirical pattern emerges. In the majority of the countries, however, the drop in the relative prices of import-competing sectors has been accompanied by either lower relative wages, lower relative employment or both. Conversely, therefore, the relative situation of workers in export sectors has improved.

Econometric analysis suggests that trade-price changes have had an impact, albeit small and not always statistically significant, on the wages of unskilled workers. Results also suggest that the trade-price effect on unskilled employment has been somewhat larger. Sectoral total factor productivity gains appear to exert a much stronger influence on unskilled wages – though not on employment. These results confirm the findings of several recent studies which refer to the experience of the United States only.

It is possible that such trade pressures on the unskilled labour market persist, as new major players such as China and India become integrated into the world economy. The appropriate policy response, however, does not lie in protection which, as both theory and history amply demonstrate, would adversely affect skilled as well as unskilled workers. Instead, the challenge is to create the appropriate incentives to help both individuals and firms adjust to a rapidly changing environment.

B. THE STYLISED FACTS ON EMPLOYMENT, EARNINGS AND TRADE

The first aim in this section is to present the evidence on several key labour market outcomes for unskilled relative to skilled workers in OECD countries. In particular, trends in earnings and employment by broad skill category over the past two decades are examined, both for the whole economy and the manufacturing sector. Second, the evolution of trade is reviewed, focusing on OECD trade in manufactures with the emerging economies. The

reason for paying particular attention to manufactures is that the bulk of OECD trade with the EEs is conducted in such products: in 1994, 86 per cent of total OECD imports from the EEs consisted of manufactured goods. Therefore, any labour market effects of trade with EEs should be most noticeable in the manufacturing sector rather than in the service sector which tends to be much more insulated from international trade.

1. Trends in employment by skill category

It is important to start by defining the measures of "skills" used in this chapter. There are obviously many dimensions of skills, ranging from physical abilities to cognitive and interpersonal skills [OECD (1996*c*); ILO (1995)]. Single-variable empirical measures of skills cannot capture all these dimensions. In the literature, the two most commonly used indicators are based either on education or on occupation.

Measures based on *education*, defined either as years of schooling completed or final degree obtained, are usually assumed to capture cognitive dimensions of skill which, from a human capital perspective, can be expected to increase a worker's productivity. However, skills acquired on-the-job or through training are typically excluded from these measures. In addition, such measures make no adjustment for the varying quality of schooling. Nevertheless, educational attainment is a time-invariant characteristic attached to the individual, contrary to characteristics attached to a particular job.[2]

Measures based on *occupation* are defined according to the tasks performed in a particular job (managerial, administrative, technical, clerical, etc.). One problem with these measures is that they are generally not available at a great level of detail, so that existing cross-country studies mainly use rough proxies such as the ratio of either production to non-production workers or blue- to white-collar workers.

Berman *et al*. (1994) show that, for the United States manufacturing sector, the blue/white collar and production/non-production classifications are closely related, and reflect differences in average educational attainments. Machin *et al.* (1996) also find that, for the United Kingdom and the United States, the evolution of manufacturing employment for occupational (production/nonproduction) and educational groupings is very similar. A large body of evidence also shows that educational attainment is positively linked to labour market outcomes. Thus, despite their admitted imperfections, broad classifications of skills based on either educational attainment or occupation are operational, and they are used for this chapter.[3]

Chart 4.1 shows average annual growth rates of total and manufacturing employment by educational attainment.[4] The first thing to note is that total manufacturing employment either declined or barely increased in all countries for which the data are available, except Japan, the Netherlands and the United States.[5] Further, in all countries except the United States, manufacturing employment of workers with the lowest level of education decreased, while it grew for those with the highest level of attainment. The trend among workers with an intermediate (*i.e.* upper secondary) level of education is less clear: some countries registered a decline, others an increase.

Of course, these trends could simply reflect the fact that educational attainment among the population and work force is rising. Indeed, according to Table 4.1*a* which reports the evolution of educational attainment among the population aged 25 to 64, the population share of the lowest-educated men and women decreased in most countries, while the share of the highest-educated increased. As a result, the ratio of low- to high-educated men and women declined (Table 4.1*a*, Columns 3 and 6). Exceptions are Austria, where the ratio for both sexes rose over the period 1989-1994, and Switzerland, where the ratio for women rose over the same period.

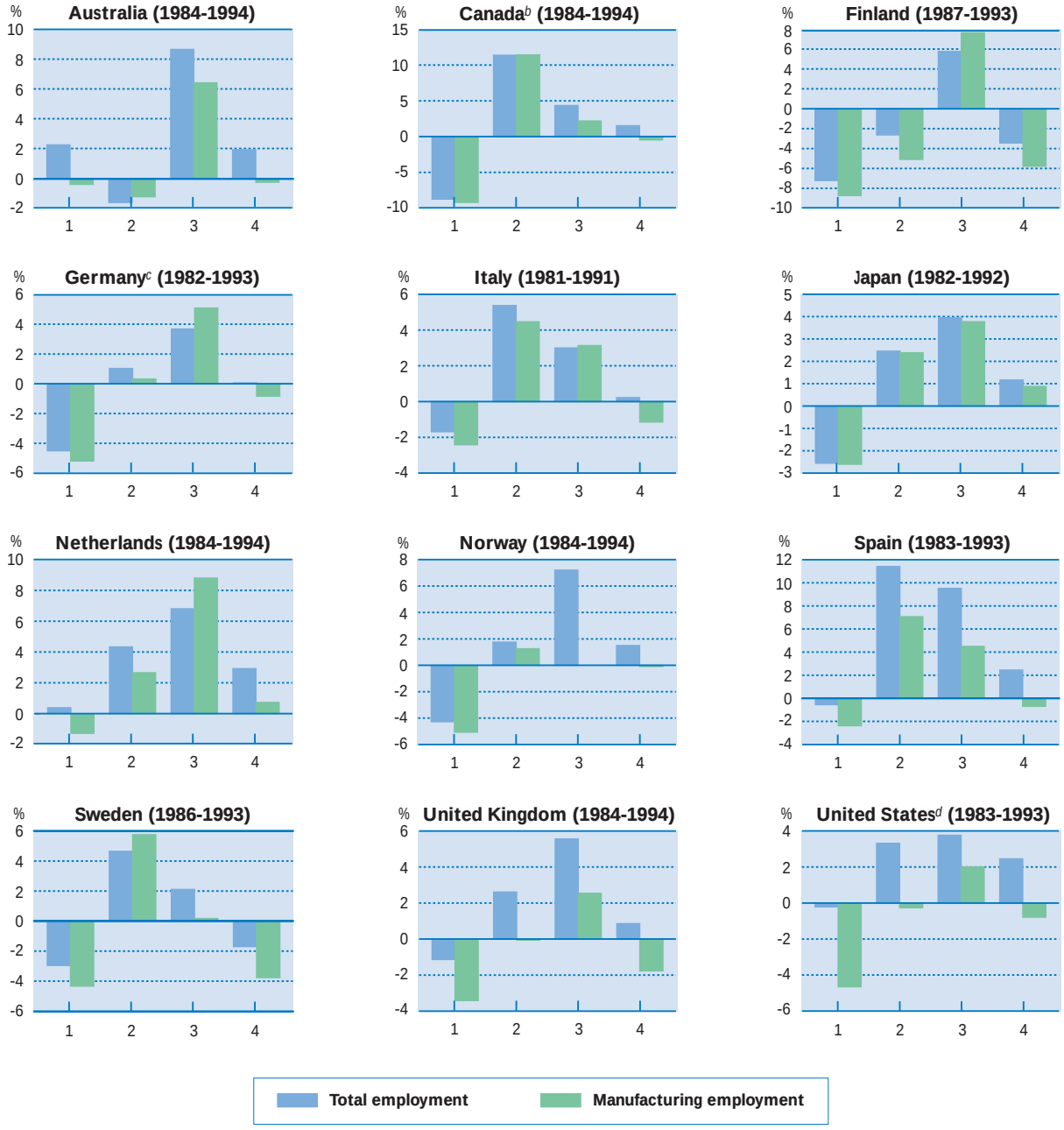
Even though the supply of low-educated workers tended to fall, evidence on employment-population ratios and unemployment rates suggests a deterioration in the labour-market position of low-educated workers in the majority of the countries:

- employment-population ratios fell for both low- and high-educated men in 17 out of 20 countries, while they deteriorated for both groups of women in 11 countries (Table 4.1*b*, Columns 1 to 6). In 15 out of 20 countries, the employment-population ratio of low-educated men declined more than was the case for high-educated men (Table 4.1*b*, Column 3). Relative to high-educated women, the employment-population ratio of low-educated women deteriorated in half of the countries (Table 4.1*b*, Column 6); and
- the evidence on unemployment rates tells a similar story (see Columns 7 to 12). The unemployment rates of lower-educated workers increased noticeably during the 1980s and early 1990s (Germany, Ireland and the Netherlands being important exceptions). Unemployment rates increased as well for higher-educated workers, but remained at comparatively much lower levels. As a result, the difference between the unemployment rates of low- versus high-educated workers increased sharply in most countries for both

Chart 4.1.

Evolution of employment by level of educational attainment[a]

Average annual growth rates



a) 1 = lower secondary or less; 2 = upper secondary; 3 = higher education (tertiary); and 4 = all employed.
b) The large increase in the employment share of people with an upper secondary education may be partly due to efforts made since 1992 to improve the classification of post-secondary educational programmes.
c) Data refer to western Germany.
d) The totals for the manufacturing sector exclude the food, drink and tobacco industry, for which figures were not available.
Source: OECD Education database.

men (except in Germany, Ireland, the Netherlands and Sweden) and women (except in Belgium, Germany, Italy and the Netherlands).

In sum, the relative employment decline for low-skilled workers reported in Chart 4.1 can only partly be due to relative supply changes. Taken together, the falling relative employment-population ratios and the increasing relative unemployment rates tend to indicate that the employment situation of lower educated workers has deteriorated by more than their declining relative share in the population would lead to expect. Although it is somewhat mixed, the evidence seems to point rather to relative demand shifts as an important driving force.

2. Trends in earnings and employment by skill category: whole economy contrasted with manufacturing sector

This sub-section examines the earnings and employment differentials between high- and low-skilled workers in the whole economy and the manufacturing sector (see Annex 4.A for definitions and sources).

Charts 4.2*a* and 4.2*b* show the evolution of the earnings and employment differentials (defined as ratios) between more and less skilled workers. In the case of differentials based on educational attainment, those with a higher or tertiary education are being compared to those with less than an upper secondary education. Comparisons by occupation vary across countries. For France, managers and professionals are compared with labourers and sales and clerical workers. For other countries, comparisons refer to white- and blue-collar or production and nonproduction workers. In all cases, the earnings and employment gaps are calculated as indices, with 1985 or 1986 being the base year.[6]

Looking first at the whole economy, the most striking point is that, except for the United Kingdom and the United States, the earnings gap, as measured here, remained quite stable between 1980 and 1995. In Spain, it increased slightly during part of the 1980s, and stabilised thereafter. In Australia, the earnings gap followed a gentle downward trend. In Austria, Canada and Norway, the earnings gap increased somewhat in the early 1990s, while the opposite occurred in France, Germany, Italy and Switzerland. In the United Kingdom, the earnings gap increased rapidly between 1985 and 1990, and continued increasing, although at a slower rate, through the 1990s.[7] In the United States, the earnings gap increased at a steady rate throughout the whole period. In contrast to this mixed picture for the earnings gap, in all countries the employment gap increased, often substantially.

Evidence for the manufacturing sector is unfortunately available only for seven countries, and comparison with the whole economy is not always possible (Chart 4.2*b*). In Australia, the earnings gap remained constant until 1990, and then dropped more rapidly than for the total economy. In addition, the manufacturing employment gap also started declining after 1990. In Denmark, both gaps were very stable over the period. The earnings differential in Finland fell by over 10 per cent between 1980-1994, while the employment gap increased substantially. The earnings gap for the Japanese manufacturing sector exhibits no trend, in line with the pattern for the total economy. However, the employment gap increased much less in manufacturing, compared with the whole economy. The earnings gap in New Zealand's manufacturing sector increased much more than in the whole economy, while the evolution of the employment differential was very similar in both cases. In Spain, the earnings gap shows similar trends in the manufacturing sector and in the total economy.

In summary, the relative employment of low-skilled workers has deteriorated virtually everywhere. By contrast, as defined and measured here, there is little clear evidence of a deterioration in the relative earnings of unskilled compared with skilled workers, except in the United Kingdom and the United States. The evolution of the relative labour market position of low-skilled workers has not been worse in the manufacturing sector than in the total economy, with the notable exception of New Zealand.

3. Evolution in OECD manufacturing trade with the EEs, 1967-1994[8]

As Chart 4.3 indicates, imports of manufactured products from EEs as a share of OECD GDP have increased steadily over the period considered, from almost 0.3 in 1967 to 1.6 per cent in 1994. Imports from within the OECD amounted, in 1994, to 9.2 per cent of OECD's GDP, or 80 per cent of total manufacturing imports (weighted by GDP). There are, nevertheless, relatively large differences in the importance of imports from EEs among major OECD trading countries. In 1994, the European Union and Canada imported 7.4 and 8.5 per cent of their manufacturing from EEs, respectively; almost 90 per cent of their imports of manufactures came from other OECD countries. This contrasts with the United States and Japan, for which one-quarter and one-third of manufacturing imports came from the EEs, while OECD countries accounted for 70 and

Table 4.1*a*. **Trends in the population of less versus more educated workers**[a]

Percentages of the total population of men and women

		Men			Women		
		Level of education			Level of education		
		Low	High	Ratio of low to high	Low	High	Ratio of low to high
Australia[b]	1989	37.0	12.3	**3.0**	52.4	7.6	**6.9**
	1994	39.9	14.2	**2.8**	59.7	12.6	**4.7**
Austria	1989	24.0	7.4	**3.2**	45.1	5.3	**8.5**
	1994	24.6	7.2	**3.4**	39.3	4.1	**9.6**
Belgium	1989	60.0	10.2	**5.9**	65.4	4.4	**15.0**
	1994	49.2	13.0	**3.8**	52.1	7.2	**7.2**
Canada	1981	40.2	14.3	**2.8**	39.3	8.5	**4.6**
	1989	29.4	17.2	**1.7**	27.8	13.0	**2.1**
	1994	26.4	18.5	**1.4**	25.5	15.2	**1.7**
Denmark	1981	43.5	11.7	**3.7**	56.0	9.3	**6.0**
	1988	37.8	13.0	**2.9**	48.0	8.0	**6.0**
	1994	35.9	14.2	**2.5**	44.2	13.1	**3.4**
Finland	1982	53.1	9.5	**5.6**	56.4	5.7	**9.8**
	1989	42.1	11.9	**3.5**	42.7	7.4	**5.8**
	1994	37.2	12.5	**3.0**	35.6	9.2	**3.9**
France	1981	55.7	8.4	**6.6**	65.4	6.4	**10.2**
	1989	47.5	8.6	**5.5**	56.3	5.4	**10.5**
	1994	28.7	10.7	**2.7**	37.0	7.9	**4.7**
Germany	1989	12.3	13.4	**0.9**	31.0	7.0	**4.4**
	1992	11.4	14.8	**0.8**	24.9	8.3	**3.0**
Ireland	1989	64.9	8.9	**7.3**	59.0	5.8	**10.2**
	1994	58.3	10.2	**5.7**	51.3	7.4	**6.9**
Italy	1989	72.0	6.7	**10.8**	76.5	4.7	**16.2**
	1994	65.0	8.5	**7.7**	68.6	6.5	**10.5**
Netherlands	1990	38.6	8.9	**4.3**	52.0	3.3	**15.5**
	1994	34.7	8.7	**4.0**	45.8	4.1	**11.2**
New Zealand	1981	61.7	6.4	**9.6**	72.3	3.0	**24.3**
	1990	37.4	11.5	**3.3**	49.3	7.5	**6.6**
	1994	37.1	10.7	**3.5**	48.2	7.8	**6.2**
Norway	1981	30.3	10.2	**3.0**	36.8	4.2	**8.8**
	1989	21.2	12.7	**1.7**	24.0	8.4	**2.8**
	1994	18.8	17.2	**1.1**	19.8	15.5	**1.3**
Portugal	1989	91.8	4.8	**19.2**	91.3	3.5	**26.4**
	1994	81.2	7.8	**10.4**	80.6	6.7	**12.0**
Spain	1981	86.5	7.1	**12.2**	92.7	4.2	**22.0**
	1989	77.2	10.3	**7.5**	83.1	8.3	**10.0**
	1994	71.4	11.2	**6.4**	76.1	10.8	**7.1**
Sweden	1981	49.0	11.6	**4.2**	52.5	9.3	**5.6**
	1989	33.6	13.2	**2.5**	32.1	11.8	**2.7**
	1994	29.3	12.6	**2.3**	26.1	11.9	**2.2**
Switzerland	1989	15.2	13.7	**1.1**	27.3	6.2	**4.4**
	1994	11.2	11.6	**1.0**	24.4	5.2	**4.7**
Turkey	1991	80.2	7.6	**10.6**	85.5	4.4	**19.3**
	1994	77.8	8.2	**9.5**	83.8	5.3	**15.8**
United Kingdom	1984	39.7	11.0	**3.6**	52.2	5.2	**10.0**
	1989	30.4	11.6	**2.6**	43.5	6.2	**7.0**
	1994	19.9	14.8	**1.3**	31.1	8.6	**3.6**
United States	1981	19.9	26.2	**0.8**	19.6	17.9	**1.1**
	1989	18.1	26.6	**0.7**	17.9	20.5	**0.9**
	1994	15.3	26.7	**0.6**	14.4	22.3	**0.6**

a) Data refer to the population of age 25-64 years. The classification of educational attainment is based on the International Standard Classification for Education (ISCED).
A **low** level of education corresponds to ISCED levels 0, 1 and 2, that is, up to lower secondary education.
A **high** level of education corresponds to ISCED levels 6 and 7, that is, up to tertiary education.

b) The figures for 1994 must be interpreted with caution. Between 1992 and 1993 there was a change in the interpretation of ISCED which may lead to an overestimation of the increase in less educated workers between 1989 and 1994.

Sources: OECD (1996*e*) and OECD (1996*f*).

Table 4.1*b*. **Trends in the employment and unemployment of less versus more educated workers**[a]

Percentages

		Employment rates by level of education[b]						Unemployment rates by level of education[c]					
		Men			Women			Men			Women		
		Low	High	Difference[d]	Low	High	Difference[d]	Low	High	Difference[d]	Low	High	Difference[d]
Australia	1989	76.7	90.9	**14.2**	44.2	74.1	**29.9**	7.9	3.1	**4.8**	6.5	5.1	**1.4**
	1994	73.0	90.2	**17.2**	50.5	78.3	**27.8**	11.9	3.5	**8.3**	8.6	4.3	**4.3**
Austria	1989	73.4	92.3	**18.9**	39.6	82.1	**42.5**	3.4	0.8	**2.6**	3.8	2.2	**1.6**
	1994	70.0	91.6	**21.6**	47.0	83.9	**36.9**	4.8	1.7	**3.1**	5.1	2.1	**3.0**
Belgium	1989	68.4	91.9	**23.5**	29.6	79.9	**50.3**	7.1	1.6	**5.5**	18.5	3.1	**15.4**
	1994	64.6	88.0	**23.4**	31.7	80.8	**49.1**	9.3	3.7	**5.6**	18.2	4.5	**13.7**
Canada	1981	79.6	94.6	**15.0**	39.5	73.7	**34.2**	7.3	2.0	**5.3**	8.9	4.4	**4.5**
	1989	71.9	91.8	**19.9**	42.2	80.3	**38.1**	9.6	3.2	**6.4**	10.8	4.2	**6.6**
	1994	64.6	87.5	**22.9**	40.9	80.7	**39.8**	14.3	5.2	**9.1**	14.4	5.2	**9.2**
Denmark	1981	77.1	93.1	**16.0**	59.5	86.9	**27.4**	8.6	2.7	**5.9**	7.9	1.9	**6.0**
	1988	72.2	92.5	**20.3**	59.1	90.6	**31.5**	10.5	3.6	**6.9**	13.6	3.0	**10.6**
	1994	65.7	89.8	**24.1**	55.5	87.9	**32.4**	16.3	5.2	**11.1**	18.4	4.6	**13.8**
Finland	1982	79.2	96.6	**17.4**	67.6	87.7	**20.1**	4.4	..	**..**	5.5	..	**..**
	1989	71.6	93.8	**22.2**	65.0	88.9	**23.9**	4.0	0.7	**3.3**	3.9	2.2	**1.7**
	1994	54.6	86.5	**31.9**	50.9	84.0	**33.1**	24.2	7.0	**17.2**	21.0	6.0	**15.0**
France	1981	80.3	92.5	**12.2**	47.6	78.7	**31.1**	5.4	3.0	**2.4**	8.5	3.6	**4.9**
	1989	73.0	91.8	**18.8**	46.8	82.2	**35.4**	8.7	2.0	**6.7**	13.8	4.7	**9.1**
	1994	62.1	86.0	**23.9**	44.0	76.2	**32.2**	13.5	5.9	**7.6**	15.9	6.4	**9.5**
Germany	1989	68.7	91.8	**23.1**	33.1	71.5	**38.4**	13.8	3.3	**10.5**	13.7	7.5	**6.2**
	1992	73.0	90.7	**17.7**	42.0	78.7	**36.7**	9.0	3.3	**5.7**	8.9	4.6	**4.3**
Ireland	1989	64.4	92.8	**28.4**	22.9	76.7	**53.8**	23.8	2.5	**21.3**	10.3	2.9	**7.4**
	1994	67.0	91.8	**24.8**	24.4	77.8	**53.4**	18.0	2.8	**15.2**	21.6	4.4	**17.2**
Italy	1989	78.0	91.0	**13.0**	30.5	79.9	**49.4**	3.8	3.1	**0.7**	11.9	7.2	**4.7**
	1994	72.2	88.0	**15.8**	28.5	75.0	**46.5**	6.4	4.4	**2.0**	12.8	9.3	**3.5**
Netherlands	1990	72.4	84.6	**12.2**	31.7	74.8	**43.1**	7.4	3.8	**3.6**	13.4	8.4	**5.0**
	1994	70.6	87.0	**16.4**	36.2	74.9	**38.7**	7.1	3.6	**3.5**	9.8	5.2	**4.6**
New Zealand	1981	88.3	94.8	**6.5**	47.9	69.4	**21.5**	3.1	1.3	**1.8**	2.2	3.1	**0.9**
	1990	73.7	92.2	**18.5**	52.2	70.4	**18.2**	9.8	1.8	**8.0**	6.2	4.9	**1.3**
	1994	71.4	92.1	**20.7**	51.7	78.5	**26.8**	11.1	2.0	**9.1**	7.2	2.5	**4.7**
Norway	1981	83.1	94.5	**11.4**	52.8	85.4	**32.6**	1.5	0.4	**1.1**	2.8	1.6	**1.2**
	1989	76.4	96.2	**19.8**	54.1	91.8	**37.7**	6.1	0.8	**5.3**	6.4	1.3	**5.1**
	1994	69.2	93.2	**24.0**	51.6	89.1	**37.5**	7.2	1.7	**5.5**	5.6	1.3	**4.3**
Portugal	1989	78.7	79.5	**0.8**	56.2	61.3	**5.1**	2.1	2.1	**0.0**	6.4	7.7	**1.3**
	1994	81.1	92.6	**11.5**	54.8	92.5	**37.7**	5.2	2.4	**2.8**	7.0	2.3	**4.7**
Spain	1981	81.3	89.8	**8.5**	23.8	67.8	**44.0**	9.5	2.0	**7.5**	5.8	9.3	**3.5**
	1989	75.2	84.8	**9.6**	25.3	68.3	**43.0**	10.7	6.6	**4.1**	19.4	16.0	**3.4**
	1994	67.3	82.0	**14.7**	26.1	68.2	**42.1**	17.6	9.8	**7.8**	28.7	18.2	**10.5**
Sweden	1981	85.3	95.2	**9.9**	68.7	93.2	**24.5**	3.0	0.6	**2.4**	2.3	0.7	**1.6**
	1989	89.1	95.3	**6.2**	77.4	94.6	**17.2**	1.1	1.1	**0.0**	1.7	0.4	**1.3**
	1994	81.8	90.8	**9.0**	74.8	89.5	**14.7**	9.6	3.4	**6.2**	7.7	3.4	**4.3**
Switzerland	1989	92.9	93.3	**0.4**	56.3	74.3	**18.0**	0.3	0.3	**0.0**	2.6	2.2	**0.4**
	1994	89.1	91.8	**2.7**	58.2	73.2	**15.0**	4.7	2.6	**2.1**	5.5	6.7	**1.2**
Turkey	1991	83.4	92.3	**8.9**	26.3	73.0	**46.7**	5.7	2.3	**3.4**	5.7	5.8	**0.1**
	1994	82.9	89.3	**6.4**	26.6	76.4	**49.8**	6.2	3.6	**2.6**	5.5	5.5	**0.0**
United Kingdom	1984	71.7	91.3	**19.6**	53.1	72.6	**19.5**	13.7	2.7	**11.0**	8.5	6.0	**2.4**
	1989	71.7	93.2	**21.5**	55.2	80.9	**25.7**	12.1	2.1	**10.0**	7.6	3.1	**4.5**
	1994	61.0	90.0	**29.0**	52.0	84.3	**32.3**	18.8	4.0	**14.8**	8.2	3.7	**4.5**
United States	1981	69.8	91.8	**22.0**	38.7	71.6	**32.9**	10.3	2.2	**8.1**	9.8	2.8	**7.0**
	1989	68.9	92.4	**23.5**	41.9	79.5	**37.6**	9.4	2.3	**7.1**	8.1	2.0	**6.1**
	1994	62.4	90.6	**28.2**	39.2	80.1	**40.9**	12.8	2.8	**10.0**	12.4	2.9	**9.5**

.. Data not available.

a) The classification of educational attainment is based on the International Standard Classification for Education (ISCED).
A **low** level of education corresponds to ISCED levels 0, 1 and 2, that is, up to lower secondary education.
A **high** level of education corresponds to ISCED levels 6 and 7, that is, up to tertiary education.

b) For each level of education, the employment rate is the share of employed workers aged 25-64 years in the total population aged 25-64 years.

c) For each level of education, the unemployment rate is the share of unemployed workers aged 25-64 years in the total labour force aged 25-64 years.

d) Difference of less to more educated workers, in absolute values.

Sources: OECD (1996*e*) and OECD (1996*f*).

Chart 4.2a.

Evolution of earnings and employment differentials by skill category: whole economy

1985 = 100[a]

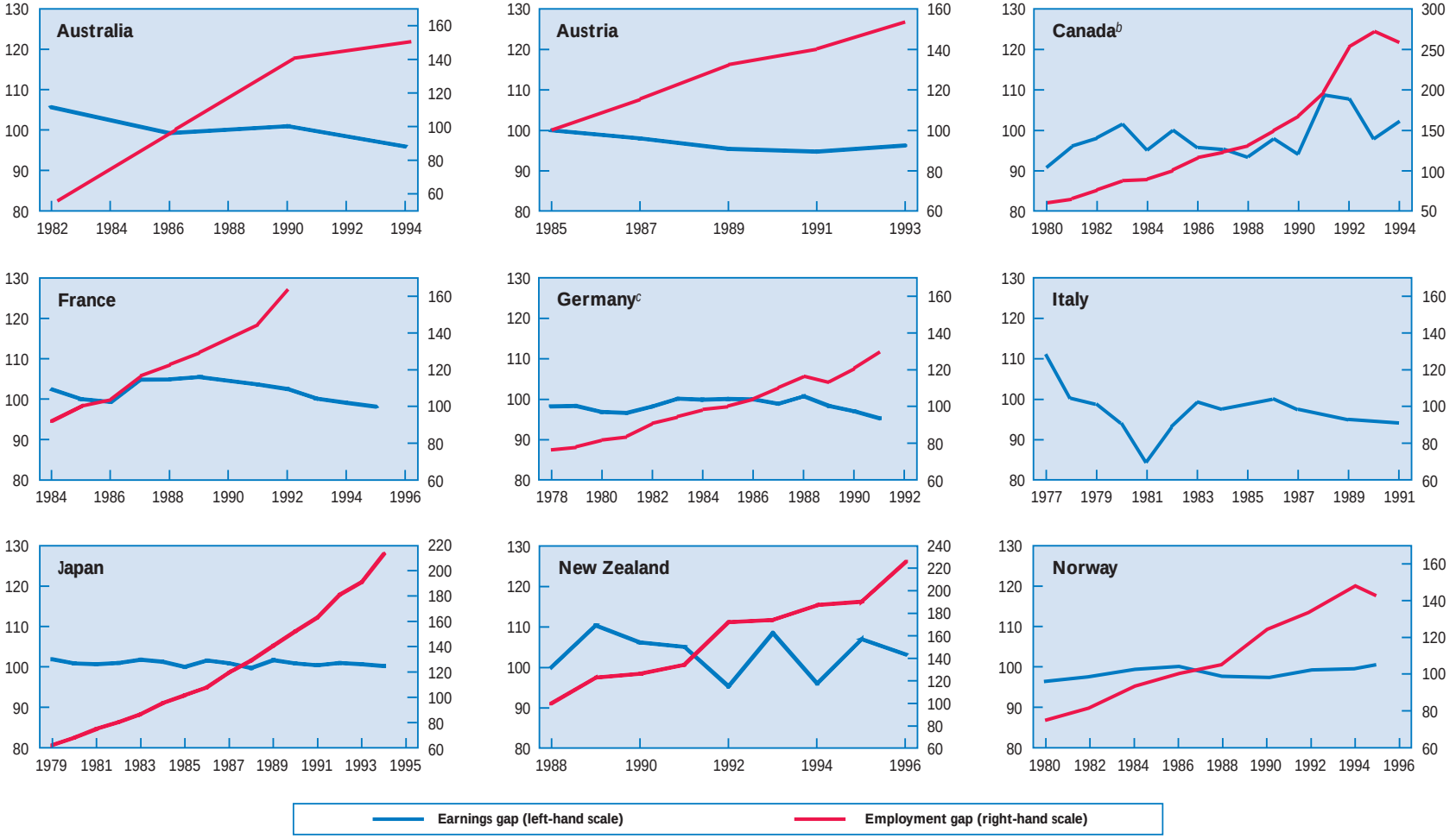
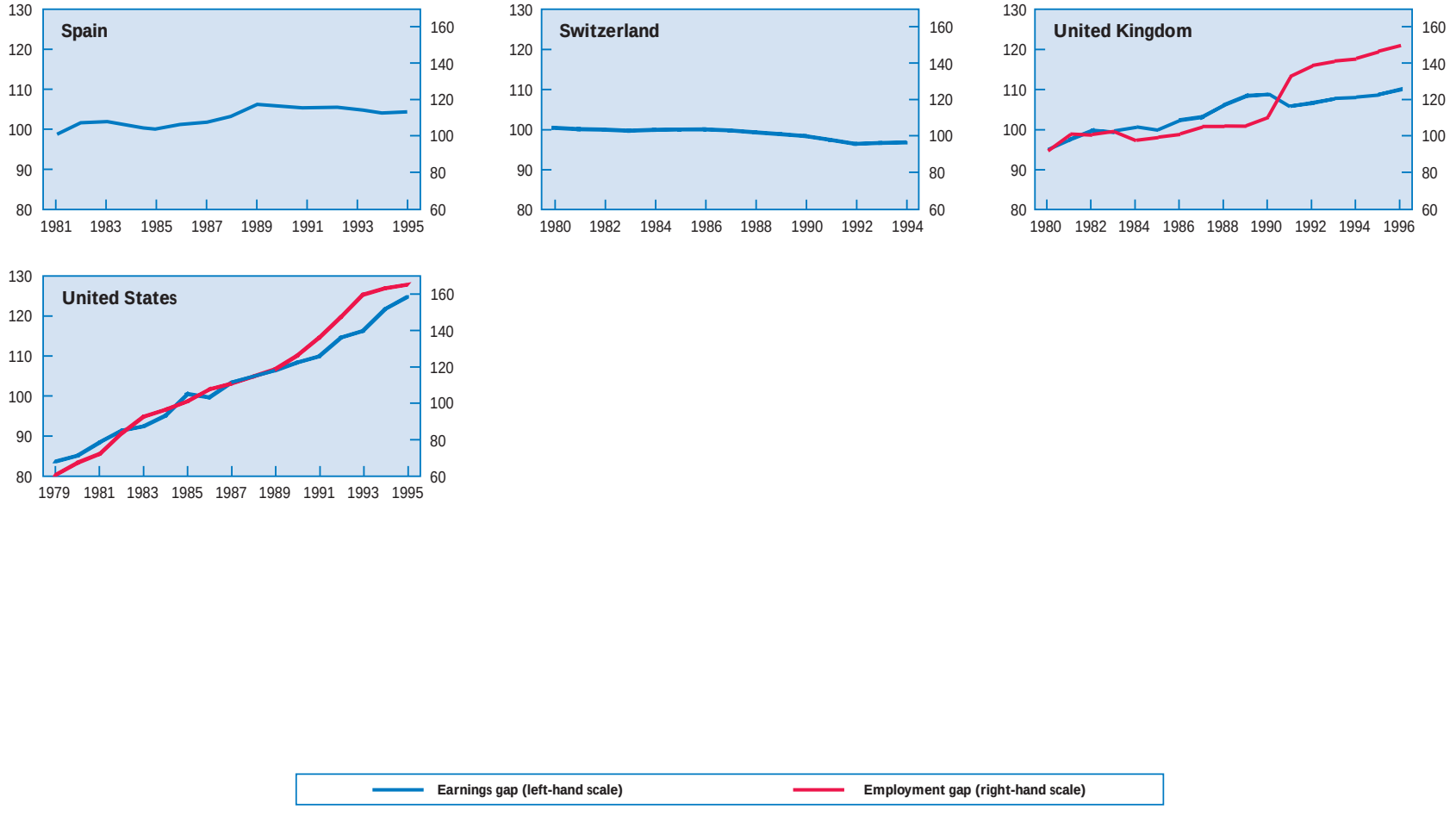


Chart 4.2a. *(cont.)*

Evolution of earnings and employment differentials by skill category: whole economy

1985 = 100[a]

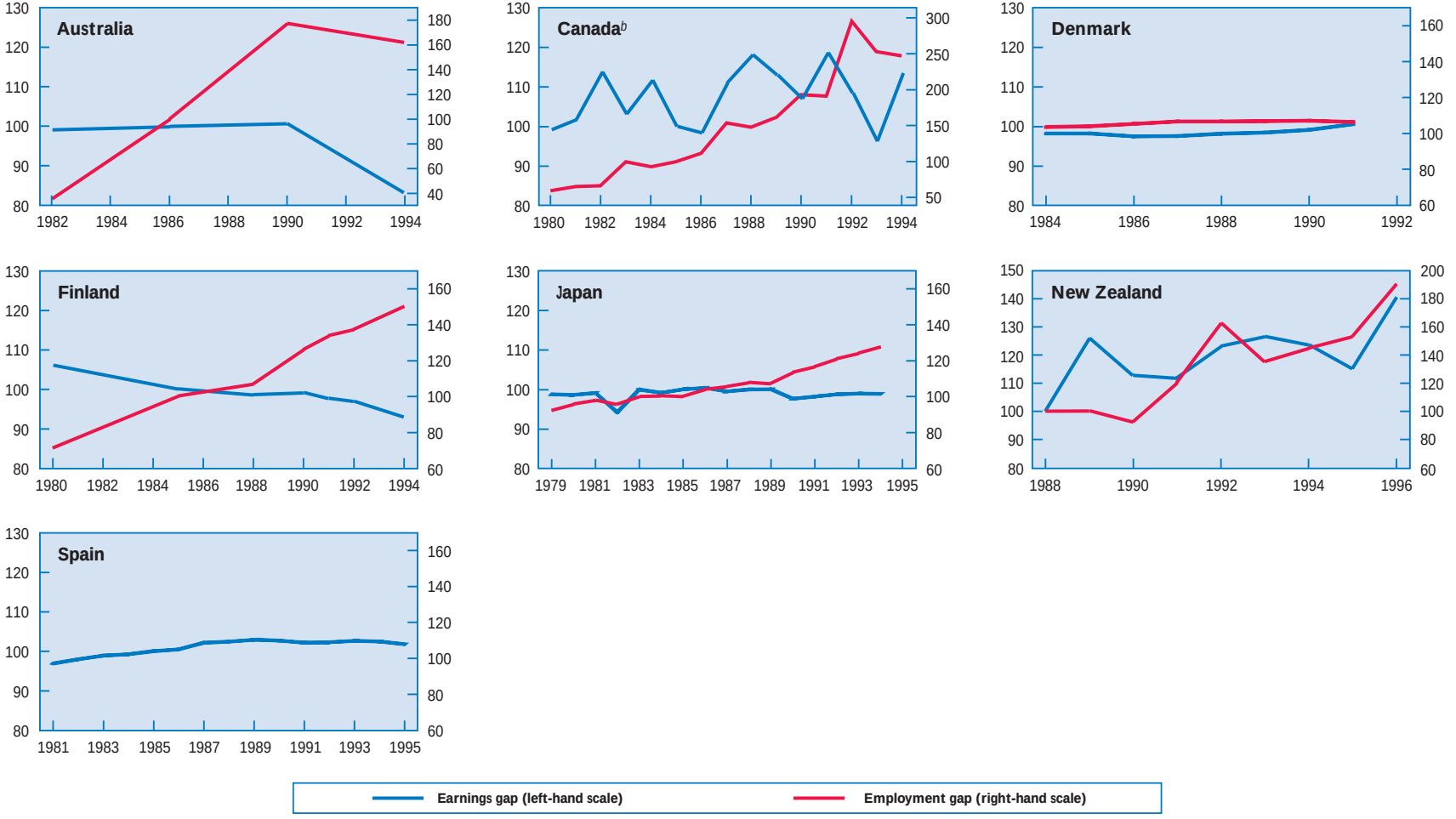


a) 1986 = 100 for Australia, Italy and Norway; 1988 = 100 for New Zealand.
b) For Canada, the low-education group is defined as ISCED 0/1 (*i.e.* up to primary education) due to a change in definition of ISCED 2 in 1988.
c) Data refer to western Germany.
Note: The earnings (employment) gap is defined as the ratio of earnings (employment) of high-skilled workers to earnings (employment) of low-skilled workers. The figures refer to educational attainment for all countries except France, Norway, Spain and Switzerland, for which the data refer to occupational groups.
Source: See Annex 4.A.

Chart 4.2*b*.

Evolution of earnings and employment differentials by skill category: manufacturing sector

1985 = 100[a]



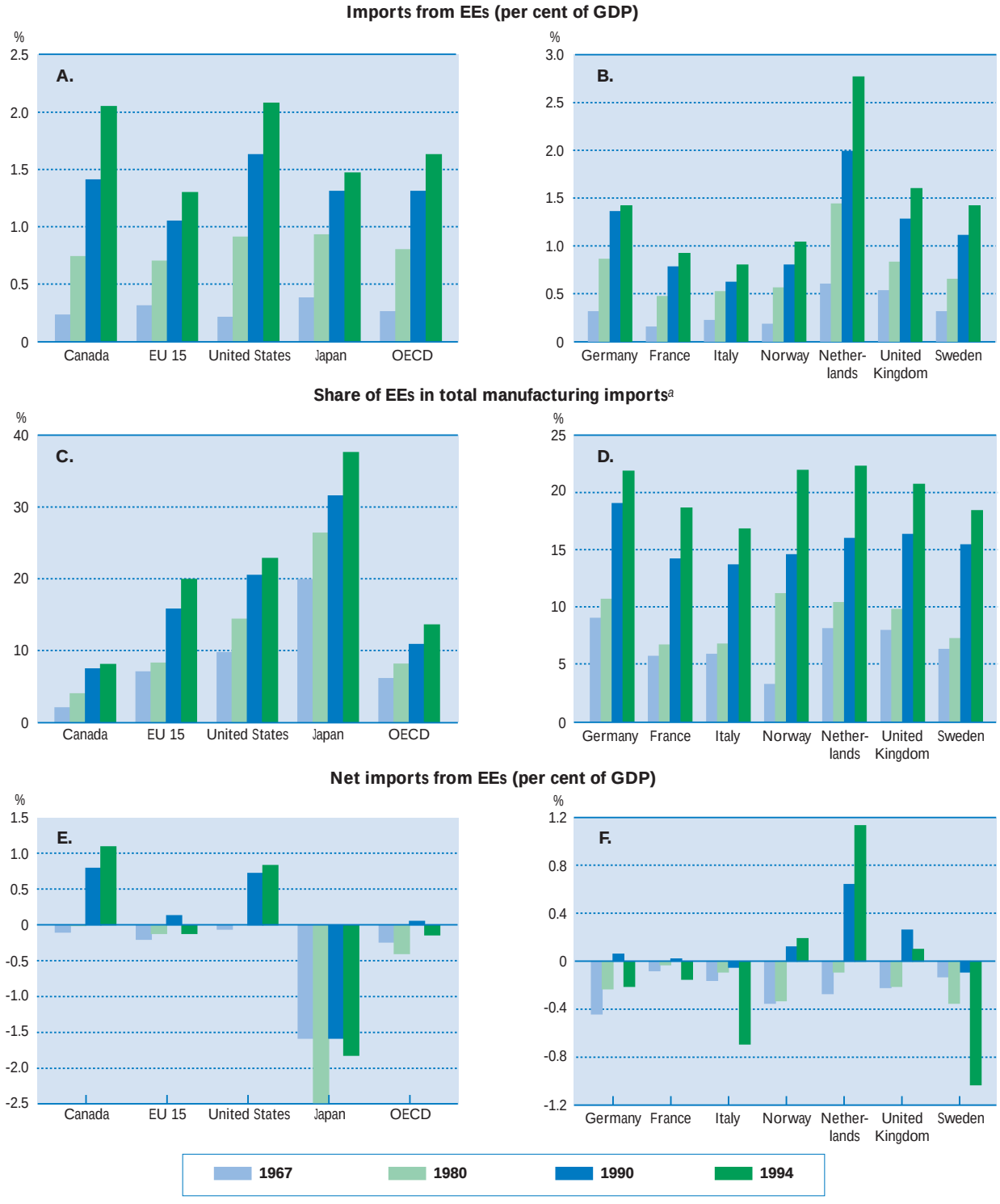
a) 1986 = 100 for Australia; 1988 = 100 for New Zealand.

b) For Canada, the low-education group is defined as ISCED 0/1 (*i.e.* up to primary education) due to a change in definition of ISCED 2 in 1988.

Note: The earnings (employment) gap is defined as the ratio of earnings (employment) of high-skilled workers to earnings (employment) of low-skilled workers. The figures refer to educational attainment for all countries except Denmark, Japan and Spain, for which the data refer to occupational groups.

Source: See Annex 4.A.

Chart 4.3.
Trends in OECD manufacturing trade with emerging economies (EEs)



a) Manufacturing imports from the EU 15 countries are excluded from the calculations.
Source: CHELEM database 1996, Centre d'études prospectives et d'informations internationales (CEPII), Paris.

54 per cent of the total, respectively. In addition, the share of EEs in total manufacturing imports increased for all countries considered, from 4 per cent in 1967 to 14 per cent in 1994 (Chart 4.3, C).

OECD manufacturing exports to EEs have increased even faster than their imports from EEs, especially in the 1990s. As a result, the OECD was for most of the period – except in the late 1980s – a net exporter (see Chart 4.3, E, net exports being shown as negative net imports). In particular, Japan, which imports the most from the EEs, exports even more to them: the value of its *net* exports in 1994 amounted to 1.8 per cent of GDP. The European Union was also a net exporter for most of the period, though by a very small margin. This contrasts with the figures for the United States and Canada, whose net imports in 1994 amounted to about 1 per cent of GDP.

Trade patterns across individual European countries are very similar to the European Union total (see Chart 4.3, B, E and F). In particular, looking at F, most European countries are net exporters of manufactures to the EEs, with the exceptions of the Netherlands, Norway and the United Kingdom (with a decline in 1994).

In sum, if trade balances are the main determinant of labour market outcomes, one would expect the United States, Canada and the Netherlands to have been most affected by import pressures from EEs. Overall, the picture that emerges here is one of a growing, but balanced, integration of the EEs in OECD trade.

C. SECTORAL COMPOSITION OF TRADE WITH THE EMERGING ECONOMIES

The links between trade and labour markets are complex. It is not correct to infer causality directly from the observed parallel increases in trade with EEs on the one hand and unemployment and the dispersion in relative earnings in OECD countries on the other. The stylised facts presented earlier show a more complicated picture. Likewise, the fact that trade with the EEs is relatively balanced and represents only a very small share of OECD GDP does not necessarily rule out the possibility that such trade may have had a significant labour market impact. Even when trade is balanced overall, some sectors may be net exporters while others are net importers and thus are subject to foreign competition pressures. Workers may not easily move from import-competing sectors to export sectors, so that even overall balanced trade could result in transitory labour-market problems. And, as will be seen later, longer-run effects cannot be excluded *a priori* when, for example, the labour content of import-competing sectors is different from that of export sectors.

This section addresses several inter-related questions: What sectors face import competition from the EEs? Is the production process of those sectors characterised by relatively low earnings and/or a high intensity of unskilled labour? Conversely, what are the characteristics of the sectors that export to the EEs? To answer these questions fully, appropriate indicators of ''skill'' intensity at a detailed sectoral level would be needed. Since such indicators are not available, crude proxies such as wage levels and the incidence of operative labour (*i.e.* production labour) by sector are used. Despite these severe statistical limitations, available evidence enables some tentative conclusions to be drawn:

- a sectoral breakdown of imports from EEs suggests that, in most OECD countries, their incidence is relatively high in six sectors: textiles and apparel; wood products; rubber and plastics; computer equipment; transport (other than aircraft and motor vehicles); and a variety of light consumer products such as toys, ranged in the category ''other manufacturing''.[9] As shown in Table 4.2, these sectors are all *net* importers, *i.e.* the value of imports from the EEs exceeds the value of the sector's exports to these countries. There are very few exceptions to this general pattern (in Belgium, the ''other manufacturing'' sector is a net exporter; Japan is a net exporter to the EEs of computer equipment and ''other transport'' material; and New Zealand is a net exporter of wood products). The level of imports in these sectors varies considerably across countries. Import intensities are generally high for Australia, Canada, Japan (except in computer equipment and ''other transport'' material), New Zealand and the United States. Import intensities are lower in many European Union countries, in particular Austria, Belgium, France, Italy, Portugal and Spain. In sum, there are only slight differences among OECD countries in the nature of the sectors which are typically above-average net importers from the EEs. Hereafter, these sectors are called ''import-competing'' sectors;[10]
- average earnings in import-competing sectors are much lower than the average in the total manufacturing sector for all OECD countries under study and indeed almost all import-competing sectors can be characterised as low-wage ones (Table 4.3);[11]

Table 4.2. **Sectors with a high incidence of net imports from emerging economies (EEs), 1993**

Net imports from EEs as a per cent of trade turnover[a]

	Textiles, apparel, footwear and leather	Wood products	Rubber and plastics	Computer equipment	Other transport equipment	Other manufacturing[b]
Australia	27.5	24.3	31.8	23.1	19.3	26.4
Canada	34.8	0.6	10.8	12.4	8.7	22.6
European Union						
Austria	8.1	0.8	3.2	12.4	5.0	6.7
Belgium	3.9	4.7	3.4	2.3	0.6	–7.5
Denmark	13.9	2.0	5.4	5.4	8.3	15.0
Finland	15.3	0.5	7.3	13.8	13.4	13.8
France	9.1	6.2	6.4	9.0	6.9	14.1
Germany	14.9	5.6	6.5	13.7	7.5	14.6
Italy	1.1	1.8	4.7	5.9	3.0	1.8
Netherlands	13.4	13.9	6.7	7.7	8.0	19.0
Portugal	2.3	1.1	5.8	7.5	3.5	10.9
Spain	10.7	4.1	6.1	6.7	9.3	19.7
Sweden	23.6	1.4	5.5	8.1	8.9	17.3
United Kingdom	21.4	15.3	12.8	9.0	10.6	1.9
EU unweighted average	11.5	4.8	6.2	8.5	7.1	10.6
Japan	36.8	42.0	5.7	–5.1	–30.2	14.3
New Zealand	7.2	–1.9	18.2	22.6	36.1	27.3
Norway	23.1	3.3	8.7	11.2	17.0	20.2
United States	46.1	16.2	39.3	22.8	16.8	33.5
OECD unweighted average	17.4	7.9	10.5	10.5	8.5	15.1

a) For each sector, the figures refer to imports from EEs minus exports to EEs expressed as a ratio of trade turnover (calculated as total exports of the sector plus total imports of the sector).
b) The ''other manufacturing'' sector includes mainly consumer products, such as toys.
Source: See Annex 4.A.

Table 4.3. **Earnings and skill intensity of import-competing sectors, 1990**[a]

	Average earnings of the sectors as a per cent of average manufacturing earnings	Share of operatives in the total wage bill in import-competing sectors[b]
Australia	91.4	1.01[c]
Canada	86.1	1.04
European Union		
Austria	82.5	1.01
Belgium	80.5	1.14[c]
Denmark	84.3	1.04[c]
Finland	88.9	1.10
France	89.1	..
Germany	79.5	1.03[c]
Italy	87.0	..
Netherlands	79.4	..
Portugal	85.5	1.05[c]
Spain	80.5	1.09
Sweden	83.8	1.04
United Kingdom	85.4	1.10
EU unweighted average	83.9	1.07
Japan	74.8	0.91
New Zealand	87.3	..
Norway	86.3	1.06[c]
United States	83.6	1.13
OECD unweighted average	84.8	1.04

a) Import-competing sectors are defined as the sectors for which the net imports from the EEs are higher than the average for total manufacturing.
b) Relative to the share of operatives in the total manufacturing wage bill.
c) 1980 instead of 1990.
Source: See Annex 4.A.

Table 4.4. **Sectors with a high incidence of net exports to emerging economies (EEs), 1993**

Net exports to EEs as a per cent of trade turnover[a]

	Chemical products	Drugs and medicines	Machinery and equipment	Motor vehicules	Aircraft	Iron and steel
Australia	1.0	4.8	1.3	–1.2	–0.2	25.7
Canada	3.1	–0.1	0.2	–0.3	1.2	0.3
European Union						
Austria	0.5	4.7	4.2	0.7	–0.2	1.9
Belgium	2.3	2.1	2.4	0.5	0.0	3.8
Denmark	1.0	0.9	6.1	–0.2	8.7	–0.2
Finland	1.6	0.5	13.9	1.1	0.2	4.5
France	2.5	2.1	4.2	2.0	9.0	3.0
Germany	3.5	2.3	9.7	3.7	0.5	5.0
Italy	1.2	3.2	12.9	1.3	–0.4	6.4
Netherlands	1.5	2.8	3.6	0.1	13.0	2.5
Portugal	–1.0	0.7	–1.6	–0.9	8.8	2.2
Spain	0.9	2.8	2.9	0.0	–2.2	10.2
Sweden	1.6	1.8	5.7	5.2	2.3	5.1
United Kingdom	1.9	3.0	5.2	1.2	2.8	5.6
EU unweighted average	1.5	2.2	5.8	1.2	3.5	4.2
Japan	26.3	3.9	39.8	13.8	0.7	39.0
New Zealand	–3.7	0.0	–1.5	–1.1	0.6	4.6
Norway	0.4	1.1	2.4	0.0	9.3	2.7
United States	8.8	3.0	7.1	1.2	24.1	–7.7
OECD unweighted average	3.0	2.2	6.6	1.5	4.3	6.4

a) For each sector, the figures refer to exports to EEs minus imports from EEs expressed as a ratio of trade turnover (calculated as total exports of the sector plus total imports of the sector).

Source: See Annex 4.A.

Table 4.5. **Earnings and skill intensity of export sectors, 1990**[a]

	Average earnings of the sectors as a per cent of average manufacturing earnings	Share of operatives in the total wage bill in export sectors[b]
Australia	113.2	0.98[c]
Canada	112.6	0.97
European Union		
Austria	105.3	0.99
Belgium	108.2	0.95[c]
Denmark	109.0	0.99[c]
Finland	107.8	0.99
France	107.8	..
Germany	109.8	0.99[c]
Italy	113.0	..
Netherlands	105.7	..
Portugal	105.5	..
Spain	118.8	0.98
Sweden	109.6	..
United Kingdom	105.2	0.95
EU unweighted average	108.8	0.98
Japan	113.1	1.02
New Zealand	107.2	..
Norway	104.3	0.91[c]
United States	115.8	0.82
OECD unweighted average	109.6	0.96

a) Export sectors are defined as those for which net exports to the EEs are higher than average for total manufacturing.
b) Relative to the share of operatives in the total manufacturing wage bill.
c) 1980 instead of 1990.
Source: See Annex 4.A.

– available data on the wage bill lend support to the preceding results and suggest that import-competing sectors are, *on average*, unskilled-labour-intensive. Table 4.3 gives the share of the wage bill paid to operatives in the total wage bill of import-competing sectors.[12] With the notable exception of Japan, the share of operatives in the total wage bill of these sectors appears, on average, to be high compared with the same share for manufacturing as a whole;
– whereas imports from EEs are often concentrated in a few products, OECD exports to these countries tend to be more broadly-based. That said, the incidence of exports to the EEs is relatively high in sectors such as chemical products, drugs and medicines, machinery and equipment, motor vehicles, aircraft, and iron and steel (Table 4.4). Most OECD countries are net exporters to the EEs in these sectors. Exports patterns are, however, somewhat different in Australia, Canada, New Zealand and Portugal. Table 4.4 also shows that the EEs represent major markets for Japanese chemical products, machinery and equipment, and iron and steel. Hereafter, the sectors for which net exports to the EEs are higher than average are called "export" sectors;[13] and
– given the evidence on import-competing sectors, the fact that export sectors are, on average, relatively high-wage sectors is not surprising (Table 4.5). Likewise, in export sectors, the share of operatives in the total wage bill is relatively low – Japan being, again, an exception.

Overall, available evidence suggests that import-competing sectors are characterised by relatively low earnings and a relatively high incidence of production workers. The reverse is true in the case of export sectors. Trade between OECD countries and the EEs seems to be mainly of the inter-industry type. This points to differences in resource endowments as one key determinant of trade between OECD countries and the EEs in line with the standard Heckscher-Ohlin-Samuelson theory of trade. There are, however, important departures from this general pattern, suggesting that other determinants of trade, such as economies of scale and product differentiation are also important. For instance, EEs supply a large and growing proportion of OECD imports of computers and office machinery, which are relatively skilled-labour-intensive sectors, characterised by relatively high earnings.

D. ESTIMATING THE POSSIBLE LINKS BETWEEN TRADE WITH EMERGING ECONOMIES AND OECD WAGES AND EMPLOYMENT

1. Channels of transmission between trade and labour markets

According to conventional trade theories, freer trade between skilled-labour-abundant OECD countries and unskilled-labour-abundant EEs will typically lead to a decline in the relative price of unskilled-labour-intensive products imported from low-wage countries. This, in turn, will cause a more-than-proportional cut in the relative wage of unskilled labour – the so-called Stolper-Samuelson theorem, discussed in detail in Box 1. Trade prices, and not trade volumes or import-penetration ratios, are considered as the central channel of transmission for analysing labour-market impacts because the latter are endogenous whereas the former are not. A consensus seems to be emerging in the literature regarding this approach as being the most theoretically cogent [Baldwin (1994); Bhagwati (1995); Courakis *et al.* (1995); Davis (1996*a*, 1996*b*); Krugman (1995*a*, 1995*b*); Leamer (1996*a*); Richardson (1995)].

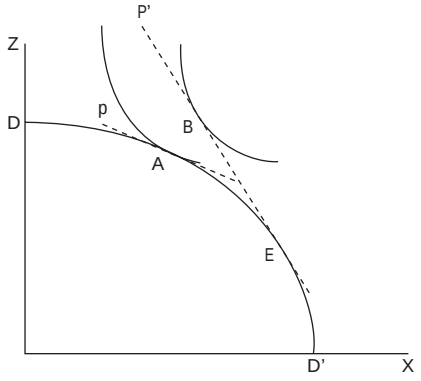
Even though changes in trade prices are potentially an important determinant of changes in relative wages, they are by no means the only ones. Trade can also affect labour markets in the absence of a change in trade prices via the following channels:

– increased international competition with low-wage countries may lead firms in import-competing sectors to invest in labour-saving technologies. As a result, labour demand in unskilled-labour-intensive sectors will be lower than it otherwise would have been. This has the implication that standard "factor-endowment" calculations of the employment effects of trade are likely to under-estimate the contribution of trade and over-estimate that of technical change [Martin and Evans (1981)]. However, technological change may not necessarily be related to trade. Moreover, technological change may be related to international competition in general, not necessarily trade with low-wage countries;
– it has become technically possible to fragment production processes into geographically separate steps, allowing producers to import labour-intensive inputs from low-wage countries – the so-called "outsourcing" process [Feenstra and Hanson (1996); Krugman (1995*a*)]. Outsourcing reduces unskilled-labour demand within firms at unchanged trade prices; and

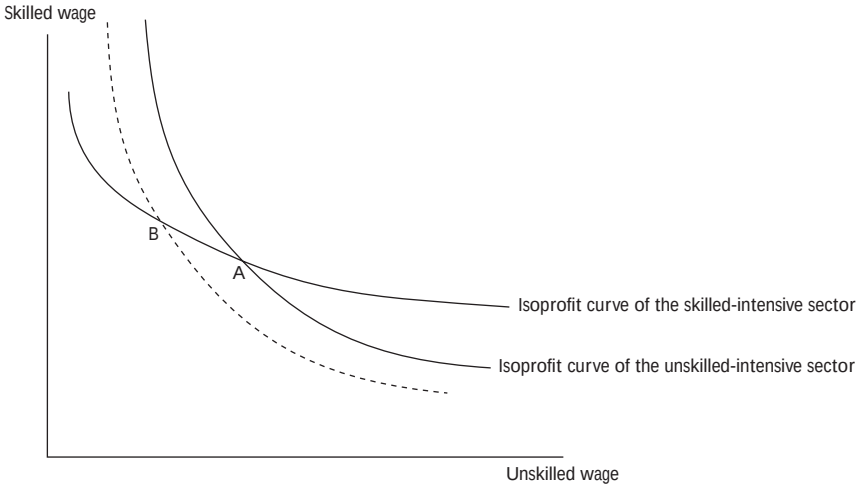
Box 1

Trade, wages and employment: key predictions from conventional trade theories

It is assumed that the typical OECD country has two production factors, namely skilled labour and unskilled labour, and two sectors: a skilled-labour-intensive sector, producing X, and an unskilled-labour-intensive sector producing Z. The production possibilities frontier DD' is given in the chart below. The level of production of each good prevailing in the absence of trade is given by the intersection point (A) between the isocost curve (P) and the production frontier. The slope of the isocost curve indicates the relative price of the two goods. Trade liberalisation can be expected to change relative prices to P' and to shift the patterns of production in line with comparative advantage, thereby increasing consumption possibilities and total welfare: the shift in relative prices leads to a shift in production from A to E, allowing an increase in consumption for the nation as a whole (from point A to point B) – an illustration of the well-known "gains from trade".



In addition, there will be distributional effects from freer trade. In order to illustrate them, it is useful to consider the Lerner-Pearce Diagram, which shows the isoprofit curves associated with the equilibrium depicted above. Isoprofit curves provide the combinations of factor prices, in this case, the wages of skilled and unskilled labour, that are consistent with constant (zero) profits in each sector. The shape of the curves depends crucially on the price level of each good. In the absence of trade, equilibrium is given by the intersection A between the isoprofit curves. Assume that the price of the unskilled-labour-intensive good falls as a result of trade liberalisation. The isoprofit curve of this good shifts inwards, leading to a new equilibrium at point B, where *real* unskilled wages are lower and *real* skilled wages higher than in the no-trade case. This indicates the relationship, known as the Stolper-Samuelson theorem, between changes in goods' prices and changes in factor prices.



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However, for the Stolper-Samuelson theorem to hold, certain conditions must be met. First, trade with relatively low-wage countries is assumed to be of the *inter-industry* type. In other words, the OECD is assumed to export certain products (typically of the skilled-labour-intensive type) and to import other ones (typically unskilled-labour-intensive). Such trade is motivated by differences in resource endowments. The existing evidence reviewed above shows that this is indeed largely the case. If trade was of the intra-industry type (in which case trade involves simultaneous import and export of similar products), the impact on the demand for unskilled labour would be ambiguous – there are instances where a reverse Stolper-Samuelson effect might occur [Oliveira Martins (1994)]. Second, even in a context of inter-industry trade, for the Stolper-Samuelson effect to operate, there must be *incomplete* specialisation of production, *i.e.* the OECD countries must continue to produce the imported goods after trade is opened up. If, instead, complete specialisation were to occur, further increases in trade with low-wage countries would be beneficial to *all* workers, including the unskilled [Bhagwati (1995)]. Third, the theorem assumes perfect wage flexibility. But when relative wages do not adjust, the shift in trade prices will translate into relative employment changes instead of relative wage changes.*

It is also useful to consider the effects of different types of technical change on skilled and unskilled wages with *given* world prices of traded goods. A standard result is that lower productivity in the unskilled-labour-intensive sector would yield distributional effects similar to those of falling prices of unskilled-labour-intensive products. For instance, higher productivity levels in the skilled-labour-intensive sector would put upward pressure on skilled wages – the isoprofit curve for the skilled-labour-intensive sector would move upwards, leading to a rise in skilled wages and a fall in unskilled wages.

In this theoretical framework, *factor-biased* technical change, as opposed to sector-specific technical change, plays no direct role. This is because relative wages depend solely on goods' prices and sectoral productivities. This result is extensively discussed in Leamer (1994 and 1996*b*), who concludes that the consensus view that unskilled labour-saving technical change is mainly responsible for the rise in wage inequalities is unfounded. There are instances, however, where relative wages will respond to factor-biased technical change. For example, this would occur when factor-biased technical change is a world-wide phenomenon, which leads to significant changes in world prices of traded goods [Krugman (1996)]. Also, if the assumption that factors are perfectly mobile between sectors is relaxed, factor-biased technical change can affect relative wages [Jones and Engerman (1996)].

In sum, according to conventional trade theories, the decline in unskilled-labour wages can be explained by either lower relative prices of unskilled-labour-intensive goods, or slower technical change in the production of such goods (or both simultaneously). Changes in relative goods' prices, in turn, may reflect freer trade between OECD countries and low-wage countries as well as unskilled-labour-saving technical change taking place world-wide.

* With rigid wages, employment in the unskilled-labour-intensive sector will fall while the opposite occurs in the other sector. Given that relative earnings do not change, the sectoral employment changes are insufficient to prevent the emergence of unskilled unemployment. It should finally be noted that the Stolper-Samuelson theorem rests on other assumptions, including perfect competition, absence of economies of scale, infinitely elastic labour demand and perfect factor mobility.

– actual or potential "delocalisation" of production from high-wage to low-wage locations abroad via foreign direct investment may also exert downward pressure on the demand for the factor used more intensively in the domestic industries concerned, typically unskilled labour.

2. Evolution of trade prices in import-competing and export sectors

Beyond the theoretical arguments already highlighted, international comparisons of the impact of trade on labour markets have long been hampered by the lack of trade-price data at a detailed sectoral level. Indeed, most studies focus on the United States, the only country for which such data have been readily available up to now. This limitation no longer exists. Based on a data base recently produced by INSEE, the French National Statistical Institute, it is possible to calculate sectoral trade prices for nearly all OECD countries.[14] More specifically, evidence is presented below on trade prices for both import-competing and export sectors.

The focus is on import prices of import-competing sectors versus export prices of export sectors and not on unskilled-labour-intensive versus skilled-labour-intensive sectors. There are two rea-

sons for this. First, the aim of the chapter is to examine the impact of trade with EEs on OECD labour markets. Second, and more importantly, little is known about the "skill content" of products imported from EEs. Sectoral data on operatives' wages, a rough proxy for skill content, are available only for OECD countries, making it impossible to estimate the labour content of products imported from the EEs. It has been shown, however, that technologies in import-competing sectors are, on average, unskilled-labour-intensive; this is suggestive that products imported from the EEs in those sectors are unskilled-labour-intensive, as well. This assumption seems a reasonable one given the relative abundance of unskilled labour in the EEs.

Table 4.6 shows the evolution over the period 1980 to 1990 of import prices of import-competing sectors and export prices of export sectors. Between 1980 and 1990, import prices in import-competing sectors fell in Japan by 7.5 per cent, cumulatively, while they rose in all other countries (the increase ranging from under 1 per cent in the United States to nearly one-third in Australia). The unweighted average increase for the OECD countries shown was 18 per cent. During the same period, export prices in export sectors increased in all the countries. The cumulative increase ranged from almost 10 per cent in Australia to over 40 per cent in Japan, the unweighted average increase being around 30 per cent. It is noteworthy that the average import price in import-competing sectors declined relative to the export price in export sectors in almost all countries; Australia, the Netherlands and Norway are the only exceptions to this general pattern. For the OECD countries as a whole, the unweighted average decline in the relative trade price of import-competing sectors was nearly 12 per cent.

Based on value-added price data for the United States, Sachs and Shatz (1995, 1996) also find that prices in import-competing sectors fell significantly between 1979 and 1990. Other studies, however, find little evidence that prices of unskilled-labour-intensive goods fell over the same period [Lawrence and Slaughter (1993); Lawrence (1996)].

Table 4.6. **Evolution of trade prices, 1980-1990**

Percentage change

	Import prices[a]	Export prices[b]	Trade price gap[c]	Trade price gap: excluding the prices of office and computer equipment (OCE)	Trade price gap: excluding the prices of OCE and petroleum-based products
Australia	31.3	9.5	–21.8	–21.3	–26.8
Canada	14.0	38.0	24.0	10.0	12.8
European Union					
Austria	26.4	27.8	1.4	–3.5	–3.3
Belgium	18.0	26.5	8.5	7.3	13.0
Denmark	10.9	39.1	28.2	25.4	30.4
Finland	27.6	34.0	6.4	5.5	7.7
France	20.9	38.0	17.1	17.8	20.0
Germany	20.2	40.4	20.2	18.7	19.8
Italy	24.0	32.7	8.7	7.7	12.7
Netherlands	19.3	14.8	–4.5	–5.7	3.5
Portugal	15.9	21.2	5.3	5.7	12.9
Spain	21.0	33.9	12.9	11.6	23.5
Sweden	25.2	37.6	12.4	14.0	19.4
United Kingdom	19.3	28.2	8.9	8.9	13.6
EU unweighted average	20.7	31.2	10.5	9.5	14.4
Japan	–7.5	43.2	50.7	55.7	23.6
New Zealand	23.1	25.0	1.9	2.1	4.2
Norway	14.4	10.6	–3.8	–18.1	–9.2
United States	0.7	30.3	29.6	14.6	17.3
OECD unweighted average	18.0	29.5	11.5	8.7	10.8

a) Import prices are average unit values [*i.e.* the ratio of imports at current prices (in US$) to imports at constant prices] of import-competing sectors.
b) Export prices are average unit values [*i.e.* the ratio of exports at current prices (in US$) to exports at constant prices] of export sectors.
c) This is calculated as the difference between columns 2 and 1. It represents the gap, in per cent, between the import price of import-competing sectors and the export price of export sectors. A positive (negative) figure indicates that export prices rose (fell) with respect to import prices.
Source: See Annex 4.A.

These conflicting results can be partly explained by the way the skill content of the different sectors is determined and measured. In addition, some authors exclude computers, a skilled-labour-intensive product, from the calculation [Sachs and Shatz (1995)]. In order to assess whether the behaviour of computer prices affects the estimated trade-price gap presented here, trade prices have also been calculated excluding the price of the office and computer sector. The main result, namely that a gap has been created between the price of import-competing sectors and the price of export sectors over the period 1980-1990, remains unaltered and the OECD average gap falls slightly to almost 9 per cent (Table 4.6, fourth column). In the United States, where computer prices have recorded a spectacular fall, the trade-price gap is substantially reduced. When the prices of petroleum-based products, which tend to exhibit large volatility, are also excluded from the calculation, the average trade-price gap is increased slightly (Table 4.6, last column).

Altogether, judged by the trade-price evidence presented here and the finding that import-competing sectors tend to be unskilled-labour-intensive, the possibility that trade with the EEs may have contributed to the labour market problems of unskilled workers in OECD countries cannot be excluded *a priori*.

3. Trade prices, wages and employment

Lower trade prices, however, do not necessarily mean lower wages. As noted above, in the case of complete specialisation, lower import prices will improve the real wages of all workers. When there is incomplete specialisation (*i.e.* when imported products compete with domestically-produced goods), lower import prices of unskilled-labour-intensive goods will exert downward pressure on domestic prices and, hence, on domestic labour demand for unskilled workers. But the extent to which this pressure translates into a fall in wages depends on a number of factors, including the nature of labour market institutions, regulations and practices:

- in countries where relative wages are flexible, reduced demand will tend to translate into lower wages for unskilled relative to skilled workers. Moreover, a given change in relative trade prices would be associated with a more-than-proportional change in relative wages, owing to the so-called "magnification effect" [Jones (1965)].[15] In the countries where wages are rigid (reflecting minimum wage laws, collective agreements, etc.), adjustment will typically take place through employment changes [Davis (1996*a*); Krugman (1995*a*)]; and
- if unskilled labour is assumed to be specific to the import-competing sector (which is probably more realistic than the assumption of infinitely elastic supply, at least in the short run), the effects of lower demand will be especially strong since, in the short-run, the ability of unskilled workers to move to other jobs or sectors will be hampered. The presence of sector-specific factors would thus strengthen the magnification effect [Jones and Engerman (1996)].

A review of the available empirical literature suggests that trade accounts for only a small proportion of the observed trends in wages and employment for unskilled workers in OECD countries (see Box 2). Most studies conclude that skill-biased technology is the main force at work. However, the empirical basis for this conclusion is not watertight. Since the effects of trade and technology may be inter-related, it is empirically very difficult to isolate their relative importance. Moreover, the measurement of skill-biased technological change is itself problematic. Empirical analysis to date has rested on very imperfect proxies for skill-biased technological change such as research and development expenditures or the ratio of production to non-production workers. In certain studies, large unexplained residuals have been interpreted as evidence of skill-biased technical change.

Chart 4.4 shows the evolution over the 1980s of relative trade prices, wages and employment for import-competing and export sectors. In the majority of the countries, the drop in the relative prices of import-competing sectors has been accompanied by either lower relative wages, lower relative employment or both. Conversely, therefore, the relative situation of workers in export sectors has improved.

At the same time, there is also a large measure of sectoral heterogeneity in the response of relative wages and employment to import-price changes. This may be explained by the fact that studies of the responses of firms to international competition suggest that, while some firms react by cutting labour costs (via lower wages and/or employment), others switch to an "upgrading" strategy. The latter involves a move to a higher-quality product (in search of a new market niche), the adoption of new management techniques and/or technical change [Lindbeck and Snower (1996); Locke *et al.* (1995)].

Though suggestive, any causality links (and, *a fortiori*, the direction of causality) obviously cannot be inferred from these associations. In order to

Box 2

A review of results from other studies

The three main empirical approaches used in the literature to investigate the links between trade and labour markets are: *i*) regression analysis, where changes in either employment or wages are estimated to be a function of changes in trade volumes and, in some studies, a proxy for technological change; *ii*) the so-called "factor-content" approach, which involves calculating how much skilled and unskilled labour would have been required to produce domestically the goods that are imported; and *iii*) empirical tests based on general equilibrium (Heckscher-Ohlin) trade theory. As shown in Table 4.7, the majority of studies to date conclude that trade can only account for a small proportion of observed labour market inequalities.

Studies based on regression analysis

In these studies, a first step is to decompose employment into within-industry and between-industry changes. The former are presumed to capture skill-biased technological change, whereas the latter would reflect trade-related factors. Evidence for the United States [Berman *et al.* (1994); Dunne *et al.* (1996); Katz and Murphy (1992); Machin *et al.* (1996)], and for the United Kingdom, Sweden and Denmark [Machin *et al.* (1996)] indicates that most of the change in both the share of non-production workers in employment and in the wage bill is due to within-industry changes. Since trade's main impact in these studies is assumed to fall on between-industry factor allocation, this finding suggests that trade has only played a very limited role in labour market inequality. From this perspective, the evidence seems to point to an explanation relying mainly on skill-biased technological change.[1]

The studies also carry out regression analyses and they find a statistically significant, but small, impact of trade, and they conclude that skill-biased technological change must be responsible – by default – for increasing inequality. Berman *et al.* (1994), Dunne *et al.* (1996) and Machin *et al.* (1995) introduce explicit proxy measures of technological change, such as R&D expenditures, the share of computer investment in total investment or some other measure of computer use. They find a strong impact of the technology measure on changes in the share of non-production workers in total sectoral employment or the sectoral wage bill.

These studies have been criticised for lacking a solid analytical basis in standard trade theory. In particular, the Heckscher-Ohlin-Samuelson framework provides few grounds for linking trade volumes with labour market outcomes [in particular, see Bhagwati (1995)]: any impact of trade on relative wages should work through changes in relative goods' prices. More importantly perhaps, only poor proxies for biased technological change are available.

Factor-content studies

Another approach is to calculate how much skilled and unskilled labour would have been required to produce domestically the goods that are imported from LDCs. Katz and Murphy (1992) and Sachs and Shatz (1994) find a very small labour market impact of trade in manufactures with low-wage countries, which is consistent with the fact that this trade only accounts for a 2 per cent share of the OECD countries' combined GDP.

The way in which the factor-content method is applied in the above studies has been criticised on the grounds that it underestimates the labour market impact of trade. For example, according to an influential study by Wood (1994), many of the manufactured products imported from LDCs are non-competing products which are no longer produced in industrialised countries. Hence, estimation must not be done using the "North's" labour requirements, but those of the "South" should be used instead, correcting for the higher factor costs in the North. In addition, actual or expected increased competitive pressures from cheap manufactures will push producers in the North to adopt unskilled-labour-saving techniques. When adjustments to observed labour coefficients are made to correct for these factors, Wood's estimates of the impact of trade with the South on employment in the North are at least ten times larger than those of previous studies.

Wood's results, which imply a much larger role for trade with LDCs in explaining changes in the demand for unskilled labour in OECD countries, have been criticised.[2] The assumed proportion of imports of manufactured products from the South that are non-competing seems too high in the light of available evidence [Baldwin (1994)]. In addition, Wood assumes that technology is the same in both the North and South. But if technology in the North is more efficient, as shown to be the case in Trefler (1993), then Wood's method will overestimate the amount of labour needed in the North to produce domestically the manufactured products imported from the South.

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As pointed out by Leamer (1996*a*), the factor content of trade is jointly determined by tastes, technologies, factor supplies and the external goods market. Therefore, the factor-content approach yields meaningful results only when comparing two equilibria where tastes, technologies, and factor supplies are held constant.[3] Another issue is that this approach is mostly ad hoc, so that the results are very sensitive to small changes in method.

Studies based on general equilibrium analysis

The majority of the studies based on this approach test the theory's prediction that trade prices of unskilled-labour-intensive goods should have declined relatively to other prices, this being a necessary condition for the validity of the argument that trade has caused wage inequality. However, the evidence on trade prices is not conclusive. Empirical evidence on the possible links between trade prices, wages and employment is also inconclusive. For example, Neven and Wyplosz (1996) focus on France, Germany, Italy and the United Kingdom and find no strong evidence that the relative price of unskilled-labour-intensive commodities fell significantly over the period. For unskilled-labour-intensive commodities, however, relative domestic production prices tended to fall rather more than import prices. This may indicate that domestic industries have come under pressure from import competition and, as a result, have adjusted domestic prices more than would have been expected. Importantly, they also find evidence of restructuring in unskilled-labour-intensive industries, in terms of downsizing and of skill upgrading. Finally, they estimate a reduced-form equation for sectoral wages and employment and find that competition from developing countries affects an important number of industries.

This brief review of the literature suggests that the impact of trade on labour markets is especially difficult to assess. First, it is difficult to isolate the effects of trade from other factors, in particular technology.[4] Second, trade prices, which are considered as a key channel of transmission, may reflect other forces, as well as trade liberalisation. Moreover, trade effects may be conveyed through channels other than prices, such as outsourcing and ''delocalisation'', but there are very few studies of these latter channels. Third, most of the studies focus on the United States, one reason being that trade-price data were not readily available for other countries. However, despite these important caveats, the majority of the studies conclude that trade has played a small role in labour market outcomes, especially shifts in relative employment and wages for unskilled labour in OECD countries.

1. One way of reconciling the evidence of within-industry demand shifts with a trade-related explanation is the outsourcing hypothesis. For the United States, Feenstra and Hanson (1996) find that outsourcing can account for about 30 per cent of the increase in the non-production worker wage that occurred in the 1980s. However, meaningful tests of this hypothesis would require highly disaggregated trade and industry-level information. Such data do not exist for the moment.
2. See Wood (1995) for a response to his critics.
3. Lawrence and Evans (1996) argue that the net factor-content approach can be useful in a very particular case. Since the relationship between factor content and factor prices will hold if trade flow changes are due only to changes in trading opportunities, this approach can be used to approximate the labour market effects of a hypothetical situation in which the United States fully specialises in high-skill goods and with a fivefold increase in manufactured goods imports from developing countries. The study finds a substantial impact of trade on the relative wages of unskilled workers (–7.5 per cent), but this is assuming a unit elasticity of substitution between the different labour inputs, and ignoring other possible spillovers of trade, *e.g.* increasing scale economies, enhancing competition, transferring technology and increasing product diversity.
4. It has been argued that one way of distinguishing between trade and technology explanations is to look at the evolution of relative wages and employment of unskilled workers in LDCs. Indeed, in these countries, the Stolper-Samuelson effect would be expected to raise wages and employment of unskilled workers (*i.e.* the opposite of the result predicted for OECD countries). Unfortunately, the lack of reliable wage and employment data in LDCs makes it difficult to assess the validity of this prediction. According to the limited available evidence, it seems that relative wages of unskilled workers have declined also in some LDCs [Hanson and Harrison (1995); Revenga and Montenegro (1995); Robbins (1996)].

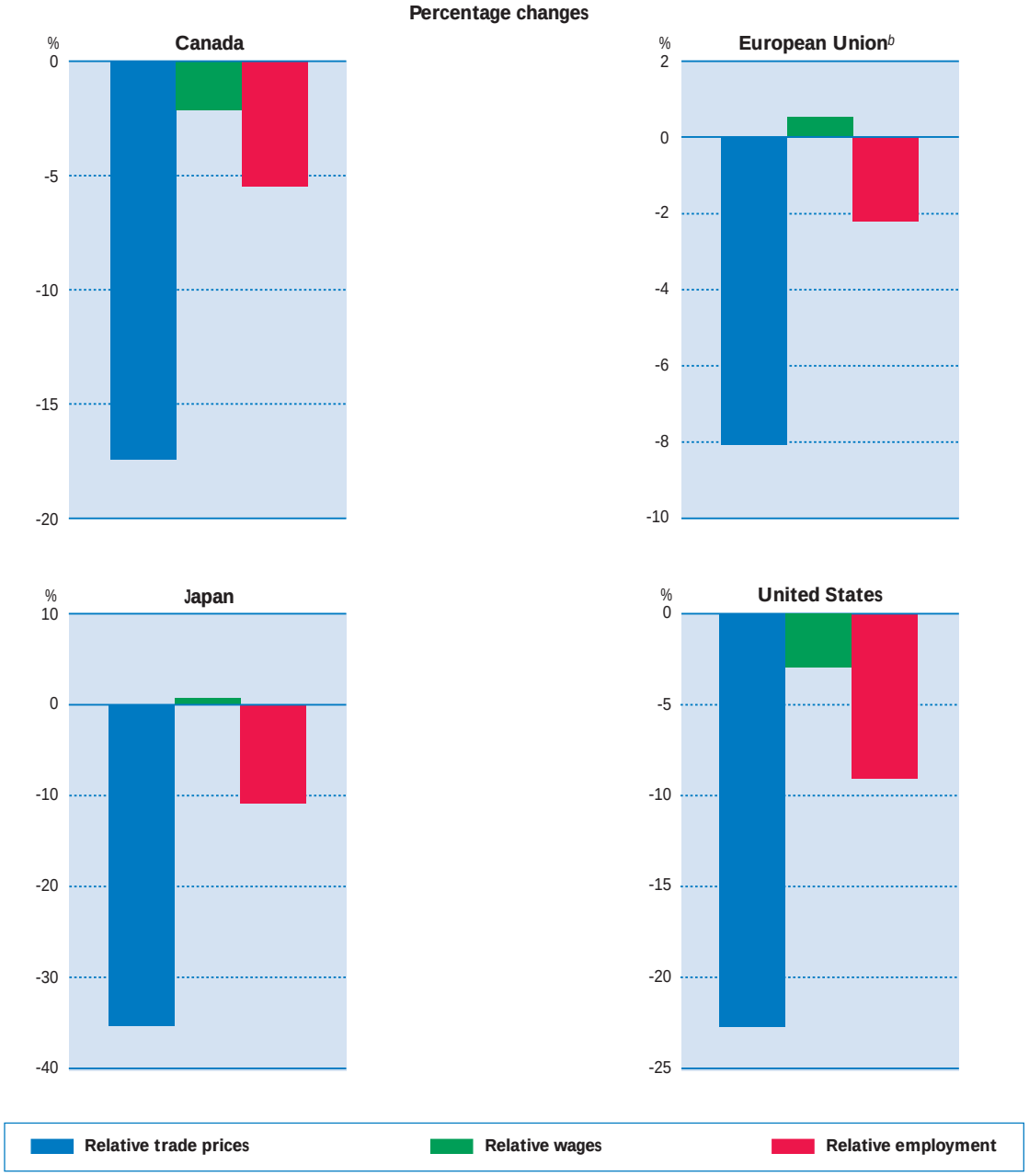
better gauge causality links, some simple econometric tests have been carried out:

– the impact of trade prices and total factor productivity (TFP) on wage inequalities in the total manufacturing sector has been tested by estimating an equation derived directly from the conventional trade model. In the model, wages of workers with the same skill should equalise or the original differentials be restored after a shock to trade prices such as trade liberalisation. Importantly, the

Chart 4.4.

Evolution of relative trade prices, wages and employment, 1980-1990[a]

Import-competing relative to export manufacturing sectors



a) Relative trade prices are ratios of import prices of import-competing sectors to export prices of export sectors; relative wages (employment) are ratios of labour costs per person (employment) of import-competing sectors to labour costs per person (employment) of export sectors.

b) The European Union data refer to unweighted averages of the eleven countries for which data is available *i.e.* Austria, Denmark, Finland, France, Germany (western), Italy, Netherlands, Portugal, Spain, Sweden and the United Kingdom.

Source: See Annex 4.A.

Table 4.7. **Summary of recent empirical studies on trade and labour markets**

Study	Theoretical framework	Dependent variable	Data	Main results
A. Studies using regression analysis				
Baldwin and Rafiquzzaman (1997)		Wage differential of non-production to production workers.	Canada: Canadian Census of Manufacturers, plant-level data for 1973-1992. Trade: net export intensity. Technology: number of technologies in use in different parts of the production process.	Trade and technology go hand in hand in explaining the increasing skilled/unskilled wage differential. Rising wage differentials are associated with both increased trade intensity and the types of technologies that are being used in the plant.
Berman, Bound and Griliches (1994)	No explicit model. The change in demand for skilled labour is decomposed into within and between industry effects.	Share of non-production workers in total employment and the wage bill, by industry.	US: CPS, Annual Survey of Manufactures and NBER Trade-Immigration-Labor market data for 1959-1987. Trade: import and export share of total manufacturing shipments. Technology: R&D expenditures/total manufacturing shipments taken as an indicator of high-tech capital in total manufacturing capital stock.	Most of the change and the acceleration in both the share of non-production workers in employment and the wage bill is due to within-industry upgrading unrelated to trade. Within-industry upgrading has occurred both in those manufacturing industries that invested heavily in computers during the 1980s and in those that are R&D intensive.
Dunne, Haltiwanger and Troske (1996)	Cost-minimisation solution to the optimal skill mix, then analysis of within and between plant changes in skill mix.	Share of non-production workers in total employment in manufacturing industries.	US: Longitudinal Research Database, compilation of the plant-level data from the Census of Manufactures and the Annual Survey of Manufactures, 1972-1988.	While observable indicators of changes in technology account for some of the secular increase in the average non-production employment share, unobservable factors account for most of the secular increase, most of the cyclical variation and most of the cross-sectional heterogeneity at the plant level. Results are interpreted as consistent with the view that individual plants have fundamentally changed the way they produce goods in terms of the mix of workers.

Table 4.7. **Summary of recent empirical studies on trade and labour markets** *(cont.)*

Study	Theoretical framework	Dependent variable	Data	Main results
Katz and Murphy (1992)	Supply-demand framework, different types of labour being treated as imperfect substitutes.	Real average wage changes and relative changes by education, gender and experience.	US: CPS data for 1964-1988.	The rapid secular growth in relative demand for skilled workers reflects within-industry demand shifts, and could be indicative of skill-biased technological change. Differences in time pattern of rising education earnings differentials and rising within-group inequality suggest that they are distinct phenomena. Using the factor-content method, the authors find that trade-induced changes in relative demand go in the right direction to explain wage differentials in the 1980s, but the effect is quite small.
Machin, Ryan and Van Reenan (1996)	Within/between industry decomposition, and derivation of an empirical specification of factor demands from a translog production function.	Non-production workers' wage bill and employment share.	US, UK, Denmark and Sweden: STAN (Structural Analysis) and UN data on manufacturing industries, 1973-1989. Technology: R&D intensity. Trade: import and export intensity. Skills: occupation and education.	Structural change within industries is associated with a common shock. Important skill-technology and physical capital/skill complementarities are found. No impact of industry import and export intensities is found, but labour market institutions seem to play an important role: in the UK and the US, industries with higher unionisation levels experienced less downgrading of the relative wages and employment of unskilled workers.
Cortes and Jean (1997)	Production function with skilled and unskilled labour and capital as inputs.	Change in productivity of skilled and unskilled labour.	France, Germany and the US for three periods: late 1970s, mid-1980s and early 1990s. Trade: import penetration, average propensity to export, etc. Distinction between "poor" economies and other trading partners.	For all three countries, the increase of the import penetration rate has a significantly positive impact on the labour productivity growth rate, and a small positive impact on the ratio of skilled to unskilled workers. The impact on productivity is almost twice as large when imports come from "poor" versus "rich" countries. The study does not investigate how changes in labour productivity translate into labour market outcomes.

Table 4.7. **Summary of recent empirical studies on trade and labour markets** *(cont.)*

Study	Theoretical framework	Dependent variable	Data	Main results
Revenga (1992)	Supply-demand framework. Workers are assumed to be mobile across industries, but not across skill groups.	Change in wages and employment by manufacturing sector.	US: panel of 38 manufacturing industries, 1977-1987. Import price data: quarterly fixed-weight Laspeyres index of transactions prices based on 1980 import market basket.	Import competition is estimated to have had a significant, but small, effect on both employment and wages: a 10 per cent reduction in the price of competing imports is associated with a drop of 2.5 to 4 per cent in employment and 0.5 to 1 per cent in wages.
B. Factor-content studies				
Lawrence and Evans (1996)	Net factor-content analysis and small simulation model to explore impact on US labour market of fivefold increase in imports of manufactured goods from NIEs.	Relative wages of workers with college/high-school education, and blue/white collar workers.	Simulations.	Impact of very large shifts in trade in the future is likely to be small, so that the comparatively smaller growth in trade with developing countries over the past 15 years is seen as unlikely to have had major impacts on OECD labour markets.
Wood (1994)	Net factor-content analysis. Counterfactual labour coefficients are based on "South" input coefficients and "North" labour costs.	Share of high and low educated workers by sector.	UN, OECD, National sources, for OECD and non-OECD countries.	The author finds an impact of trade almost ten times larger than previous studies. However, this result hinges on the assumption that all manufactures' imports other than processed primary products are non-competing, *i.e.* not produced in the "North"; and that labour productivity is the same in the "South" and in the "North".
C. Tests of Heckscher-Ohlin theory				
Baldwin and Cain (1997)	General equilibrium trade model relating changes in product prices to factor price changes and factor shares.	Changes in sectoral prices. Low- and high-skill defined as up to 12 years and 13 or more years of schooling.	US: input-output tables prepared by the Bureau of Economic Analysis for 79 2-digit sectors (all sectors, not just manufacturing); price series from the BLS; CPS data on education and wages by industry, for periods 1968-73, 1973-79 and 1979-91.	In 1979-91, trade could have been an important cause of the decrease in the relative wages of the least educated workers. The authors also find support for the hypothesis that technical progress that is unskilled-labour-saving and more rapid in manufacturing sectors intensive in the use of highly educated labour could have been the main force operating not only to decrease the relative wages of the low-educated group but also to widen the wage gap between the two groups.

Table 4.7. **Summary of recent empirical studies on trade and labour markets** *(cont.)*

Study	Theoretical framework	Dependent variable	Data	Main results
Lawrence and Slaughter (1993)	Heckscher-Ohlin.	Change in relative prices in low-skilled and high-skilled sectors. Low- and high-skill are defined as low and high education.	US: NBER Trade and Immigration data files, and BLS export and import price indices.	No evidence that the relative prices of goods that use production labour relatively intensively have declined. A positive association between the growth of total factor productivity and the relatively intensive use of non-production labour is found.
Neven and Wyplosz (1996)	Heckscher-Ohlin.	Sectoral wages and employment.	Eurostat data for France, Germany, Italy and the United Kingdom.	There is no evidence that the relative price of unskilled labour-intensive commodities has fallen since 1975. Overall, there is no significant impact of LDC import competition on sectoral wages and employment, but there are differences across the countries studied: Germany is adversely affected by LDC competition while the effect is positive in Italy and the United Kingdom.
Sachs and Shatz (1995)	Heckscher-Ohlin.	As in Lawrence and Slaughter (1993).	US: NBER CPS merged data files, and US Department of Commerce trade statistics. Measures of value-added prices rather than gross output prices and extension of data to 1995.	Falling relative prices of commodities intensive in low-skilled labour could have contributed to the widening of wage inequalities between skilled and unskilled workers.
Freeman and Revenga (1995)	Three main theoretical approaches linking trade and labour markets are considered: Heckscher-Ohlin, Ricardo and factor-content calculation. Attempt to see if the evidence bears out the theoretical implications of the different models.	Trade patterns, skill and wage structure by industry are investigated.	OECD: authors combine STAN, OECD data on bilateral trade and UNIDO and UN data on production, employment and earnings 1978-1990.	The authors find some moderate effects of import competition on the implicit value-added price deflators, but weak evidence that the impact of within-OECD trade is more important than the impact of non-OECD trade. Relative prices among industries have fallen when import shares rise and/or have a high percentage of operatives. They also find that import shares have a substantial negative effect on wages in the US and Canada, but a negligible effect in Europe.

Table 4.7. **Summary of recent empirical studies on trade and labour markets** *(cont.)*

Study	Theoretical framework	Dependent variable	Data	Main results
Courakis, Maskus and Webster (1995)	Heckscher-Ohlin model with technological progress.	International wage differentials and productivity changes in OECD countries.	World Bank and ILO data.	The authors argue that technology and globalisation are interrelated and that globalisation affects the diffusion of technology and relative technology changes. International differences in technology are seen as the main cause of the empirical failure of the Heckscher-Ohlin model. World-wide technological change is a more plausible source of downward pressure on wages and employment in OECD countries.
Lücke (1996)	Heckscher-Ohlin model with technological change. Test of Wood's hypothesis for Germany: has the disproportionate increase in unskilled unemployment in Germany been caused by expanding trade with LDCs?	Changes in stock and compensation of unskilled/skilled labour are proxied by the portion of employee compensation that exceeds the compensation paid to totally unskilled labour.	Germany: national accounts for manufacturing industry, 1970-1992.	Product prices have not turned against unskilled-labour intensive industries, nor has Germany increasingly specialized in human-capital-intensive goods.

model predicts that, under certain assumptions, lower relative prices of unskilled-labour-intensive goods should lead to lower demand for unskilled labour, while slower technological progress in unskilled-labour-intensive sectors would produce similar effects (see Box 1). The results of an attempt to estimate these predictions through an econometric equation are shown in the first column of Table 4.8. The equation's dependent variable is the ratio of operative wages to non-operative wages in the total manufacturing sector. The explanatory variables are *i)* the import price of import-competing sectors relative to the export price of export sectors and *ii)* trend-TFP of import-competing sectors as a ratio of trend-TFP of export sectors.[16] It should be pointed out that trend-TFP is an imperfect proxy for *sectoral* technological change. It is unlikely to capture all the aspects of the technological progress and indeed recent studies propose alternative measures, which unfortunately are not available for the purposes of this chapter [Bartel and Sicherman (1997)]. Despite these data limitations, the equation's results suggest that trade with EEs has had a small impact on OECD unskilled wages – the import-price elasticity is about 10 per cent, *i.e.* a 50 per cent cut in relative import prices of import-competing sectors would lead to a fall in relative unskilled wages of about 5 per cent.[17] On the other hand, the effect of sectoral trend-TFP is twice as large. Using the relative import price as explanatory variable (instead of relative trade prices) yields a much lower price elasticity (2 per cent only) and a similar elasticity with respect to trend-TFP (second column of Table 4.8);

– the nature of labour-market institutions in many countries may be such that the burden of the adjustment process will fall on employment, instead of wages. In this case, the predictions of the standard model would have to be reformulated in terms of relative employment performance. In order to consider this possibility, the third column of Table 4.8 presents estimation results of another equation where the dependent variable is relative operative employment. Explanatory variables are the same as in the first equation. The estimated impact of trade price changes is much larger than is the case of the wage equation – the import-price elasticity is 20 per cent. However, given the evolution of trade prices shown in Table 4.6, even this higher elasticity cannot explain more than a small fraction of the observed decline in unskilled employment.[18] The employment impact of trend-TFP is relatively small and statistically insignificant. Similar results are obtained when the employment equation is

Table 4.8. **Determinants of industry wages and employment: equations for the total manufacturing sector**[a]

Dependent variables:	Ratio of unskilled wages to skilled wages[b]		Ratio of unskilled employment to skilled employment[b]	
	(1)	(2)	(3)	(4)
Explanatory variables:				
Relative trade price[c]	0.116*[f]		0.200*	
Relative import price[d]		0.022		0.311*
Relative trend-TFP[e]	0.213*	0.219*	–0.094	–0.062
Memorandum items:				
Number of observations	175	175	175	175
F-statistic	25.10*	16.45*	2.09	7.37*

a) All variables are expressed in log-level terms, so that the coefficients can be interpreted as elasticities.
The countries included in the equations are those for which the data are available, *i.e.* Australia, Canada, Denmark, Finland, Germany, Japan, Sweden, the United Kingdom and the United States. The estimation period is 1970-1990. The equations are estimated using OLS techniques, based on pooled time-series, cross-section data, with country dummies.
A "*" means that the coefficient is statistically significant at the 5 per cent level.
b) The term "unskilled" refers to operatives (wages or employment) and the term "skilled" refers to other workers (wages or employment).
c) The relative trade price is the ratio of the import price of import-competing sectors to the export price of export sectors.
d) The relative import price is the ratio of the import price of import-competing sectors to the import price of export sectors.
e) Relative trend-TFP is the ratio of trend-TFP of import-competing sectors to trend-TFP of export sectors.
f) Excluding Australia (the only country among the nine analysed in the equation for which relative trade prices of import-competing sectors increased over the 1980s), the estimated coefficient would be 0.027 and statistically insignificant. Other coefficients shown in the Table are largely unaffected when Australia is excluded from the regressions.
Source: OECD estimates.

estimated with relative import prices as explanatory variable (fourth column of Table 4.8);

– but trade prices and trend-TFP may also affect wages *within* sectors because labour is not perfectly and instantaneously mobile between sectors, as is assumed to be the case in the standard Heckscher-Ohlin-Samuelson model. For example, labour mobility may be inhibited in the presence of obstacles to geographical mobility or when skills are sector-specific. In Table 4.9, the impact of relative import prices and trend-TFP on sectoral wage and employment patterns is estimated. As in other studies [Revenga (1992) ; Neven and Wyplosz (1996)], sectoral import prices are used in the equations because they are assumed to capture sectoral trade pressures. Interestingly, results are similar to those of the manufacturing-wide equation, suggesting that the estimated coefficients are fairly robust (first and fourth column). When relative export prices (instead of relative import prices) are used in the equations, the results remain largely unchanged; and

– sectoral product-market characteristics also matter. According to conventional trade theory, the standard results on the impact of trade on domestic wages will obtain only if perfect competition prevails in the domestic market. However, industries are characterised by different degrees of competition, and different outcomes can be expected to obtain in sectors where firms have some measure of market power. In a preliminary examination of this hypothesis, industries have been grouped in two mutually exclusive categories according to whether the goods they produced were relatively "homogeneous" or relatively "differentiated". This classification has been shown to effectively capture differences in product market structure and to be quite stable across countries [Oliveira Martins (1994)]. As shown in Sutton (1992), homogeneous goods industries can be expected to be much more sensitive to price competition compared with differentiated-goods industries, which compete mainly in terms of quality. The estimation results show that indeed the import price coefficient is positive and statistically significant only in the case of homogeneous-goods industries (Columns 2, 3, 5 and 6 of Table 4.9). This result, however, may not be very robust: when relative export prices (instead of relative import prices) are used in the equation, the price coefficient becomes statistically insignificant for both "homogenous-goods" and "differentiated-goods" sectors.[19]

Based on the results of Table 4.8, it is tempting to quantify the extent to which trade-price changes have contributed to explain the labour market

Table 4.9. **Determinants of industry wages and employment: sectoral equations**[a]

Dependent variables:	Relative sectoral wages[b]			Relative sectoral employment[b]		
	All sectors	Homogenous-goods sectors[c]	Differentiated-goods sectors[c]	All sectors	Homogenous-goods sectors[c]	Differentiated-goods sectors[c]
	(1)	(2)	(3)	(4)	(5)	(6)
Explanatory variables:						
Relative import price[b]	0.014	0.012*	–0.004	0.129*	0.013*	0.01
Relative trend-TFP[b]	0.15*	0.022	0.018	–0.017	–0.112	–0.068*
Memorandum items:						
Number of observations	8 599	3 425	2 944	8 708	3 461	2 985
F-statistic	83.90*	0.84	0.37	15.89*	2.76*	2.91*

a) In the equations for "All sectors", the variables are expressed in log-level terms. In the other equations, the variables are expressed in rates-of-change terms. The countries included in the equations are those for which the data are available, *i.e.* Australia, Belgium, Canada, Denmark, Finland, France, Germany, Italy, Japan, the Netherlands, Norway, Sweden, the United Kingdom and the United States. The estimation period is 1970-1990. The equations are estimated using OLS techniques, based on pooled time series, cross-section data, with country and industry dummies. A "*" means that the coefficient is statistically significant at the 5 per cent level.

b) The term "relative" means relative to the manufacturing average.

c) Homogeneous-goods sectors are: Textiles, apparel and leather; Wood products and furniture; Non-metallic mineral products; Other manufacturing; Paper products and printing; Petroleum products; Rubber and Plastic; Iron and steel; Non-ferrous metals; Shipbuilding and repair. Differentiated-goods sectors are: Metal products; Non-electrical machine; Electrical machines; Professional goods; Food, beverages and tobacco; Chemicals (including drugs and medicine); Motor vehicles; Aircraft; Other transport equipment.

Source: OECD estimates.

trends reviewed in Section B. Estimated elasticities suggest that the fall in relative trade prices of import-competing sectors would explain less than 10 per cent of the widening earnings inequalities recorded in the United Kingdom and the United States.[20] Likewise, trade-price changes are estimated to have accounted for only a small proportion of the observed worsening in the relative employment position of unskilled workers: for the countries considered in Table 4.8 the trade-price changes would have generated a cut in the relative employment of unskilled workers ranging between 1 per cent in Finland to 7 per cent in Japan.[21] Nevertheless, it is important to stress that such calculations provide only a possible order of magnitude and are moreover subject to the limitations inherent to the data base used. They should therefore be treated with caution.

E. CONCLUSIONS

The evidence presented in this chapter suggests that unskilled workers are more likely to be hurt by increased exposure to foreign competition than skilled workers. This could take the form of lower wages or higher unemployment or a combination of both outcomes. There is uncertainty about the likely magnitude of these effects, but the best available evidence suggests that they are likely to be small. However, trade pressures can be expected to persist, as new major players such as China and India become integrated into the world economy. The issue is not whether foreign competition *per se* is bad. If firms employing low-skilled workers are relatively inefficient, they will have either to close, downsize or adapt by changing their production methods and upgrading the quality of their products. Efficiency gains represent an important argument in favour of trade liberalisation. Nevertheless, the adjustment process is generally neither instantaneous nor painless. Therefore, though freer trade is likely to generate welfare gains for a nation as a whole, its distributional effects need to be considered.

In addition to trade pressures, the adoption of new technologies and work-organisation practices can go hand-in-hand with higher demand for skilled relative to unskilled workers. Many studies suggest that technological change is a more powerful determinant of shifts in relative demand for unskilled labour than trade with emerging economies, though not everyone accepts this finding. In addition, growing trade and technological progress are closely interrelated processes, and it is extremely difficult to assess their separate impacts, suggesting that further work is needed is this area.

From a policy perspective, the crucial point is that both factors work in the same direction. The main issue facing policy makers, therefore, becomes one of how best to cope with this trend decline in the relative demand for unskilled workers. The appropriate policy response is not trade protection, which, as both theory and history demonstrate, would adversely affect skilled as well as unskilled workers. Instead, the challenge is to create the appropriate incentives to help both individuals and firms adjust to a rapidly changing environment. Policy action along the lines advocated by the OECD Jobs Study is especially relevant in this context [OECD (1996*d*)]. More generally, the response of OECD economies to increased international competition will depend on the extent to which workers' skills are adapted and upgraded. This raises a number of yet unanswered questions. In particular, are market-based incentives powerful enough to encourage the needed change in skills? Should governments support this process and, if so, how? More research on the ways trade, wages and the acquisition of skills interact with each other would help clarify the policy debate.

Notes

1. It is also sometimes argued that, in a context of high overall unemployment, employers may sometimes hire skilled workers in unskilled-job positions and that this may be one reason behind the observed trend in labour market inequalities.
2. See OECD (1989), Chapter 2, for a more complete discussion of the economic significance of educational attainment.
3. The data on employment by educational attainment in the total economy and the manufacturing sector, as presented in Chart 4.1, come from an OECD survey of workers' skills in twelve OECD countries. Data referring to the educational attainment of the total population and labour force used in the remainder of the subsection are taken from the OECD Education data base.
4. Educational categories follow the International Standard Classification of Education (ISCED). Three categories are used: higher education or tertiary (ISCED 6/7), lower secondary or less (ISCED 0/1/2) and an intermediate level (ISCED 3/5).
5. In the majority of countries under study, the data on employment by education appear to be in agreement with official employment statistics – *i.e.* the rate of growth of total employment obtained by adding up employment by level of education comes close to the Labour Force Survey estimate of total employment growth. There are, however, some notable exceptions: in the cases of Spain and the Netherlands, the rate of growth in total employment, as derived from education statistics, appears to be an over-estimate. Aggregate figures should, therefore, be interpreted with caution.
6. For ease of presentation, when both educational and occupational groupings were available for a country, only the education differentials are presented.
7. The apparent jump between 1990 and 1991 may be partly due to a change in the classification of occupations.
8. The data source for this subsection is the April 1996 version of the CHELEM (Comptes Harmonisés sur les Échanges et l'Économie Mondiale) data base published by the French research institute CEPII (Centre d'Études Prospectives et d'Informations Internationales). This data base contains time-series data of bilateral trade flows at the product, sector and degree-of-processing levels, in value terms for 46 major trading countries and seven zones covering all the other countries, from 1967 until 1994.
9. In this section, the source for the trade data is OECD, *Bilateral Trade Flows* and not CHELEM. The former data base contains a more detailed level of sectoral disaggregation than CHELEM.
10. Import-competing sectors are defined as those sectors for which the ratio of net imports from the EEs to trade turnover (exports plus imports) is higher than the value of the ratio for the manufacturing sector as a whole. The import-competing sectors are not necessarily the same for all countries and they do not always coincide with those presented in Table 4.2.
11. However, although not shown here, wages in a few import-competing sectors are relatively high, *e.g.* computer equipment. It is also interesting to note that, in some countries, computer equipment imports from the EEs are expanding rapidly.
12. Labour compensation is measured by total wage payments. It is the product of average earnings per employee times the total number of employees. The data on labour compensation, which comes from United Nations sources, are available for all employees as well as for operatives only.
13. Export sectors are defined as those sectors where the value of the ratio of net exports to EEs to trade turnover (exports plus imports) is higher than the value of the ratio for the manufacturing sector as a whole.
14. The INSEE database contains data on import and export unit values, and not "true" import and export prices. The calculation of the unit values is explained in Annex 4.A.
15. The magnification effect arises because, according to the Stolper-Samuelson theorem, a fall in the price of the unskilled-labour-intensive good leads to lower unskilled-labour wages in terms of the price of both the unskilled-labour-intensive good and the skilled-labour-intensive good. On the other hand, skilled-labour wages rise in terms of the price of both goods.
16. The impact of technological change on relative wages and employment is likely to manifest itself gradually over time. This is why the trend in TFP (and not actual TFP, which exhibits high volatility in annual time-series data) is used in the equations. Trend-TFP is the predicted value of a regression of actual TFP on both a time-trend and the square of a time-trend.
17. A detailed analysis of these econometric results shows that the price coefficient is four times smaller for all the countries except Australia (for which the coefficient is over 0.2). The price-elasticity reported in the table must therefore be considered as an upper bound of the likely true value in most countries. Other estimation results reported in Table 4.8 are largely unaltered when Australia is excluded from the estimated equation.
18. In most countries, relative unskilled employment has declined by more than half, *i.e.* much more than relative import prices of import-competing sectors.

19. One alternative indicator of the extent of product market competition is the mark-up of price over marginal cost. Mark-ups capture the ability of firms to set prices above marginal costs, hence the degree of market power. Industries with relatively high mark-ups can be expected to be less affected by competition pressures, be they domestic or foreign. Data on mark-ups (coming from recent OECD work) are, however, available for only a relatively small subset of industries. In addition, sectoral coverage varies across countries, thus making it difficult to use such data in the present chapter – for individual countries, information on mark-ups is available for a maximum of 24 industries, out of 30, and a minimum of 16.

20. In the United Kingdom and the United States, the import-price of import-competing sectors relative to the export price of export sectors has declined by 7 per cent and 22.7 per cent, respectively (Table 4.6). This, combined with an elasticity of wages with respect to trade-prices of between 0.026 (wage equation of Table 4.8 without Australia) and 0.116 (wage equation of Table 4.8 with Australia), makes for a cut in the relative wage of unskilled workers of between 0.2 per cent and 0.8 per cent for the United Kingdom. In the case of the United States, reflecting a stronger fall in relative trade prices, the result is somewhat larger: the "explained" cut in the relative wage of unskilled workers would be between 0.6 per cent and 2.6 per cent.

21. These estimates are obtained by combining the estimated elasticity of 0.2 shown in Table 4.8 with the reported decline in relative trade prices.

ANNEX 4.A

Data sources

1. Sources for the earnings data used in Section B

Australia

Source: Income Surveys.
Coverage: All residents for the years 1986, 1990, 1994.
Skill categories: Educational attainment.

Austria

Source: Austrian micro-census.
Coverage: All employees for the years 1985, 1987, 1991 and 1993.
Skill categories: Educational attainment.
Earnings refer to net personal income, converted to a weekly working time of 40 hours, excluding monetary transfers.

Canada

Source: Survey of Consumer Finances.
Coverage: Full-year, full-time employees, 1980-1994.
Skill categories: Educational attainment and occupational groups.
Average annual earnings for the total economy and the manufacturing sector.

Denmark

Source: National Bureau of Statistics.
Coverage: Salaried employees in manufacturing, yearly from 1984-1991.
Skill categories: Skilled and unskilled workers.
Average hourly earnings in manufacturing.

Finland

Source: Statistics Finland.
Coverage: Salaried employees only, for the years 1980, 1985, 1988, 1990, 1991, 1992 and 1994.
Skill categories: Educational attainment.
Average monthly earnings in manufacturing.

France

Source: INSEE, DADS.
Coverage: Full-time salaried employees affiliated to the DADS, years 1984-1995.
Skill categories: Occupational groups. Average net annual earnings.

Germany

Source: German micro-census.
Coverage: Full-time, full-year employees with one main occupation, 1978-1991. Apprentices, employees without pay and employees with more than one occupation are excluded.
Skill categories: Both educational attainment and occupational groups.
Average yearly earnings.

Italy

Source: Survey of household income and wealth, Bank of Italy.
Coverage: All salaried employees, 1977-1991.
Skill categories: Educational attainment.
Annual earnings.

Japan

Source: Basic Survey on Wage Structure, as published in the *Yearbook of Labour Statistics*.
Coverage: All regular employees in establishments with ten or more regular employees, in all industries and manufacturing, 1979-1994.
Skill categories: Educational attainment for the whole economy and production/non-production workers for manufacturing.
Total monthly earnings, including overtime and one-twelfth of annual special earnings.

Norway

Source: Division for Labour Market Statistics.
Coverage: Non-manual, full-time workers in establishments affiliated with the Confederation of Norwegian Business and Industry, for the years 1980, 1982, 1984, 1986, 1988, 1990, 1992, 1994 and 1995.
Skill categories: Occupational groups. Average monthly earnings.

Spain

Source: Encuesta de Salarios, Boletín de Estadisticas Laborales.
Coverage: 1983-1995.
Skill categories: White- and blue-collar workers for the total economy and the manufacturing sector.
Average total hourly earnings.

Switzerland

Source: Until 1993, October Survey on Wages and Salaries. Since 1994, data are from the "Service de centralisation des statistiques de l'assurance-accidents", Federal Statistical Office.
Coverage: All workers, 1945-1994.

Skill categories: Semi- and non-skilled workers, skilled workers and employees.
Index of nominal wages.

United Kingdom

Source: New Earnings Survey.
Coverage: All full-time employees whose earnings for the survey period were unaffected by absence. A one per cent sample of the working population, 1980-1996.
Skill categories: Occupational groups.
Average weekly earnings, including overtime and bonuses before tax.

United States

Source: Current Population Survey, Bureau of Labor Statistics.
Coverage: Wage and salary workers who usually work full-time, 1979-1995.
Skill categories: Educational attainment and occupational groups.
Usual weekly earnings.

2. Sources for the data used in Sections C and D

Employment and earnings

Average employment and earnings in each sector are taken from the OECD-STAN (Structural Analysis) data base, which has been created by the OECD Directorate for Science, Technology and Industry. These data are available at the 3-digit ISIC (International Standard Classification of Industry) level for a large number of OECD countries, generally for the years 1970-1993.

The data on wages and employment of operatives come from United Nations sources. The definition of operatives is similar to that of production workers. Wages include all wage and salary payments received by the workers. These data are available for a relatively narrow range of sectors (in general 2-digit ISIC sectors), for the period 1970-1990. The data cover only eleven countries (Australia, Austria, Canada, Denmark, Finland, Germany, Japan, Spain, Sweden, the United Kingdom and the United States).

Bilateral trade flows

Statistics on trade flows with EEs come from the OECD Bilateral Trade Flows database. The sectoral classification used is somewhat different from that used in both the OECD-STAN and United Nations data bases. The data are available for most OECD countries, for the period 1970-1993.

Trade prices

Data on trade prices are obtained from a trade data base developed by the French National Statistical Institute (INSEE). Trade prices are average unit values, that is the ratio of exports (and imports) in current dollar prices to exports (and imports) in volume terms.

Trade data at current prices come from OECD Foreign Trade Statistics. Data on trade at constant prices are estimated by the INSEE on the basis of OECD Foreign Trade data in physical quantities. The methodology for estimating such data is explained in a report by the Division des Échanges Extérieurs of INSEE (“Flux bilatéraux de commerce extérieur : traitement des déclarations à l’OCDE”, Paris, 1993). The methodology includes several adjustments to the raw data to ensure comparability, both across countries and through time. The need for such adjustments arises because of *i)* discrete changes in accounting units and nomenclatures; *ii)* international differences in accounting methods; *iii)* missing values; and *iv)* errors. Various quality controls have been carried out by INSEE, including a comparison with national accounts statistics. Accordingly, the trade data for 3-digit sectors (the level of sectoral disaggregation most often used in the chapter) would be reliable; some of the more disaggregated data would be subject to problems of either changes in nomenclature or lack of international comparability.

The data so estimated cover most OECD countries. The data are generally available for the period 1970-1992 (a notable exception being Portugal, for which the data begin in 1981). The level of sectoral disaggregation is very detailed (usually 4-digit industries), so no problem of sectoral comparability with other data used in Sections C and D is posed.

Total factor productivity

Total factor productivity (TFP) is measured as the ratio of value added in constant prices (taken from OECD-STAN) to a Cobb-Douglas production function combining factor inputs. The latter is obtained as a weighted average of employment and real capital stock, with fixed weights (reflecting the assumption of constant factor shares). In line with the approach followed in OECD, *International Sectoral Data Base* (1996), the value of the fixed weights has been imposed to be the same for all sectors and countries: the labour share is assumed to be 70 per cent and the capital share 30 per cent. Indeed, evidence suggests that observed factor shares come close to these values in all manufacturing sectors of all countries. Sensitivity analysis shows that the econometric results presented in the chapter do not depend much on the assumed factor shares.

TFP is thus given by the following formula:
$TFP = VA/(E^{.7} \times K^{.3})$;

where VA is value added at constant prices, E is employment and K the real capital stock.

The annual values of TFP so calculated exhibit high volatility. Therefore, instead of actual TFP, the trend in TFP is used in the estimation, where trend-TFP is the predicted value of a regression of actual TFP on both a time-trend and the square of a time-trend. It should also be noted that even trend-TFP is an imperfect proxy of sectoral technological change [see Bartel and Sicherman (1997) for a discussion of alternative measures].

TFP data are available for fourteen countries (Australia, Belgium, Canada, Denmark, Finland, France, Germany, Italy, Japan, the Netherlands, Norway, Sweden, the United Kingdom and the United States). The sectors and years covered are broadly the same as with OECD-STAN.

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CHAPTER 5

Is job insecurity on the increase in OECD countries?

A. INTRODUCTION AND MAIN FINDINGS

1. Introduction

Recently, the issue of job insecurity has come to the fore of the policy debate in a number of OECD countries. For example, the Chairman of the United States Federal Reserve Board, Alan Greenspan, is on record as attributing the fact that the United States economy has been experiencing a prolonged cyclical upswing in the 1990s without any noticeable inflationary pressures to a growing sense of job insecurity in the United States work force. In the past, most jobs were perceived as being stable and secure. This impression has been shaken by the experience of the past twenty years, with the advent of high and persistent unemployment in many countries, and worries about job insecurity have increased sharply in the 1990s. The purpose of this chapter is to evaluate the proposition that jobs are now less secure than they were in the past in OECD economies, using both measures of whether workers feel insecure about their jobs and measures of employer tenure and retention rates.

Section B examines evidence to identify those countries in which workers' perceptions of job insecurity are currently at a high level, and those countries where perceived job insecurity has increased. Such information is an important complement to standard objective measures, such as tenure and retention rates. Workers' perceptions of their job insecurity are determined by a complex mix of objective and subjective considerations which are difficult to quantify precisely. In addition, these perceptions are important in their own right. First, job insecurity is closely tied to individual well-being.[1] Second, as Chairman Greenspan has pointed out, it also has implications for the macroeconomy, sometimes being linked with lower levels of consumer expenditure and greater wage restraint. Third, insecurity can also play a role in the employer-employee relationship. As the duration of job matches decreases, and as insecurity rises, there may be less incentive to invest in training, a greater likelihood of problems of worker morale and effort [Burchell (1996)], and less of an opportunity to develop the various benefits of long-term attachments [US Department of Labor (1995)].

Section C evaluates the evidence on insecurity from the standpoint of job stability. It considers trends in average employer tenure and retention rates, following on from the analysis in OECD (1993). Special attention is paid to the analysis of turnover rates among those just starting jobs, as this is an obvious measure of the difficulty of establishing (or re-establishing) a fairly "long-term" match between the worker and the firm and, thus, is one important indicator in the debate on job insecurity. The section finishes with a discussion of the relationship between these retention rate and tenure figures and the perceived insecurity figures from Section B.

Section D looks beyond data on average tenures and retention rates to consider the *consequences* of job loss: the likelihood and duration of joblessness, unemployment benefit replacement rates, and the characteristics of the new job. The combination of the probability of separation and "what happens next" may help to explain why movements in measures of perceived job insecurity are generally much larger than those in job stability.

2. Main findings

A widespread and, in some countries, very sharp increase in the number of individuals perceiving employment insecurity took place between the 1980s and the 1990s. However, while job stability, as measured by retention rates, has fallen for certain groups, such as blue-collar and less-educated workers, overall, jobs seem as stable in the 1990s as they were in the 1980s. This apparent paradox can be resolved by considering job insecurity as resulting from *both* the risk of separation and its consequences.

There is evidence that the expected loss from separation has increased. Some part of job insecurity may reflect the general macroeconomic environment: countries with better economic performance have lower levels of perceived insecurity. There is also evidence of a rising risk of joblessness for the employed. Considering the characteristics of the new job, evidence from North America points to substantially lower earnings in the new positions,

and, in general, it now seems more difficult to find a satisfactory new match. Last, there is evidence that labour market institutions are important. Perceived job insecurity is significantly lower in countries where the unemployment benefit replacement rate is higher, where there is a higher level of collective bargaining coverage and where collective bargaining is more centralised. The former correlation may reflect the recognition of a safety net by workers when they feel that their jobs are under threat. The latter two are more difficult to interpret, but could reflect the ability of unions to protect their members against insecurity.

B. WHAT DO WORKERS THINK ABOUT THEIR JOB SECURITY?

The early to mid-1990s have been characterised by increasing concern among workers over job security. This concern is widespread. It is not confined to countries with high and persistent unemployment. It is also noticeable in countries where the unemployment rate is low (Japan) or has been falling for some time (the United Kingdom and the United States).

One indicator of the intensity of the debate on job security is the amount of media attention devoted to it. Chart 5.1 presents data showing how media coverage of this topic has grown over the past fifteen years. The data in the chart show the number of stories per year referring to job insecurity (according to a rather restrictive definition[2]) in the G-7 countries found in the Reuters World Service and Associated Press databases. The top line in Chart 5.1 shows the total of the seven individual country counts. There is a great deal of yearly variation, but the upward trend is clear. The past year has seen a sharp upturn in the number of stories relating to job insecurity in Canada and the United States; there has also been a significant rise over the past two years for France. The spike for Germany in 1990 is associated with reunification.

Increased media coverage of an issue may not go hand-in-hand with an increase in the phenomenon itself.[3] This issue can be dealt with using the results of surveys which record what employees *think* about various aspects of their jobs and the labour market.

Workers rate job security as a very important characteristic of a job. The 1989 International Social Survey Programme (ISSP) survey asked workers in nine OECD countries (Austria, Hungary, Ireland, Italy, the Netherlands, Norway, the former western Germany, the United Kingdom and the United States) to rate nine different aspects of a job: security, income, promotion opportunities, leisure time, interest, independent work, being able to help others, being useful to society and flexible working hours. A five-point scale was used, from "very important" to "not at all important". Overall, 59 per cent said that job security was very important, compared with an average of 27 per cent for the other eight attributes. In eight of the nine countries, job security had the highest percentage of respondents saying that it was very important (the exception being the Netherlands, where an interesting job came first).

While workers think job security is important, relative to other attributes, they are not very content with its level. International Survey Research (1995*a*) presents figures on average ratings of fifteen job attribute categories (such as pay, working conditions, training and management) across workers in seventeen European countries. Employment security comes only 11th out of these fifteen categories in terms of the percentage of employees responding favourably. There are, however, substantial differences in feelings of insecurity between countries.

1. Differences in perceived job insecurity between countries

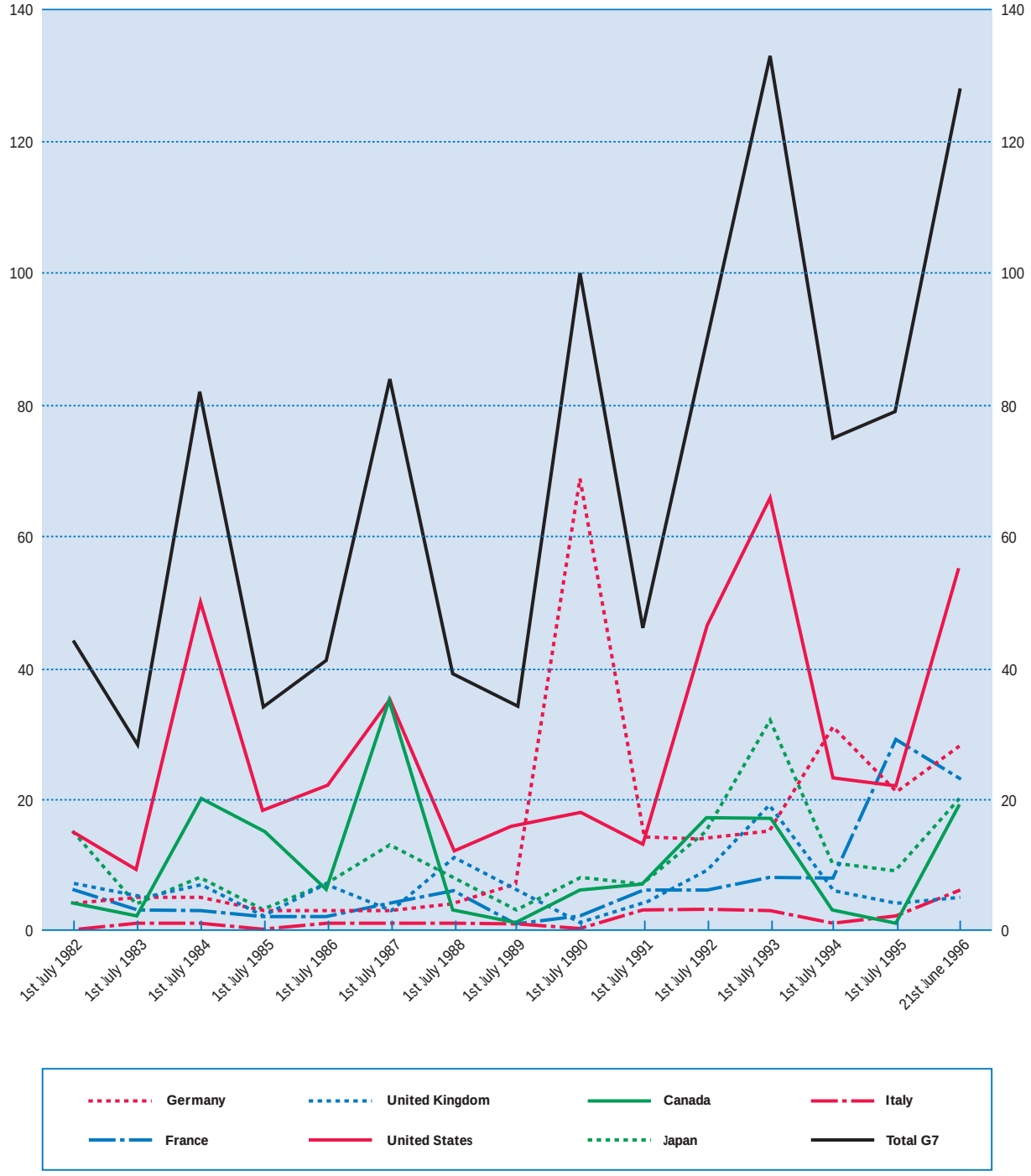
A number of surveys apply the same questions on job insecurity to workers in different countries. The first column of Table 5.1 shows the "norm" level of job insecurity reported by workers in 21 OECD countries in 1996.[4] This measure ranges from 31 per cent reporting "unfavourable" levels of insecurity in Norway to 50 per cent or more in France, Japan,[5] the United Kingdom and the United States. It may seem odd that perceptions of insecurity are so high in Japan, which has one of the lowest unemployment rates of OECD countries, and in the United Kingdom and the United States, both of which have experienced falling unemployment rates over the past four years. However, insecurity may reflect a number of other labour market trends in addition to unemployment (see Section D, below).

A single-item measure, the percentage of respondents who do not strongly agree with the statement that "my job is secure", is contained in the 1989 ISSP dataset. This is shown in the second column of Table 5.1. The levels of these two insecurity measures are not directly comparable, due to the different questions asked. However, despite the seven-year difference in survey dates, there are some similarities: Austria is a low-insecurity country and workers in the United Kingdom and the United States are more likely to report job insecurity. It is notable that Ireland, the Netherlands and Norway drop down the ranking of job insecurity between 1989 and 1996, while both Italy and Germany move up.

Chart 5.1.

Media references to job security/insecurity, 1982-1996

Number of references per year



Source: Data search based on Reuters World Service and Associated Press records (see text for details).

Table 5.1. **Three measures of workers' perspectives on job insecurity**

Percentage of employees

	''Norm'' level of employment insecurity[a]	Percentage *not* strongly agreeing that ''my job is secure''	
	1996	1989	1996
Australia	36	..	..
Austria	35	47	63
Belgium	45	..	72
Canada	45	..	..
Denmark	38	..	44
Finland	47	..	69
France	53	..	79
Germany	45	61[b]	72
Greece	38	..	66
Hungary	..	81	..
Ireland	43	77	66
Italy	44	57	70
Japan	56	..	..
Luxembourg	..	..	61
Mexico	38	..	..
Netherlands	38	75	60
Norway	31	68	..
Portugal	45	..	75
Spain	46	..	71
Sweden	47	..	73
Switzerland	42	..	..
United Kingdom	54	82	67
United States	52	72	..
Unweighted average	44	68	67

.. Data not available.
a) For the definition of the ''norm'' level, see footnote 4 in the text.
b) Western Germany only.
Sources: Column 1: Data supplied by International Survey Research.
Column 2: Secretariat estimates from the 1989 International Social Survey Programme dataset.
Column 3: Secretariat estimates from the Eurobarometer 44.3 dataset (1996).

A similar single-item measure, the percentage of workers reporting that their job is other than very secure, is contained in the Eurobarometer 44.3 Survey, which was carried out in Spring 1996. This measure of insecurity is detailed in the third column of Table 5.1. Of the fifteen European Union countries, less than two-thirds of workers in Denmark, Luxembourg, the Netherlands and Austria perceived this degree of insecurity, whereas the highest percentage was found in Belgium, France, Germany, Portugal, Spain and Sweden. These numbers correlate at better than the 2 per cent level with the composite ISR data for 1996, although both the United Kingdom and Finland are in a noticeably higher position in the ISR data than in the Eurobarometer data.

2. Differences in perceived job insecurity between workers

Perceptions of insecurity differ markedly between different groups of workers. Table 5.2 provides a breakdown of perceived job insecurity in the 1996 Eurobarometer Survey by a number of individual and worker characteristics. Across all of the European Union, there is little difference between men and women in the percentage perceiving job insecurity. This percentage mostly falls with age, although in Finland, the Netherlands and the United Kingdom it is older workers who are most likely to report insecure jobs. In general, the relationship between education (proxied by the age at which the individual first left full-time education) and insecurity is negative, although weak. It is, however, noteworthy that in four European Union countries – Denmark, France, Italy and the United Kingdom – it is those with the highest level of education who are more likely to report their job as insecure. Job insecurity is generally perceived to be lower in white-collar than in blue-collar occupations. A noticeably lower percentage of Public Administration workers report that their job is insecure, but there is little difference in this percentage between industry and services.[6]

Table 5.2. **Workers' perspectives on job insecurity by individual and job characteristics, 1996**

Percentage of employees *not* strongly agreeing that "my job is secure"

	Austria	Belgium	Denmark	Finland	France	Germany	Greece	Ireland	Italy	Luxembourg	Netherlands	Portugal	Spain	Sweden	United Kingdom	Weighted Average
Total	**62.8**	**71.5**	**43.9**	**68.7**	**78.7**	**71.8**	**66.0**	**66.5**	**69.6**	**61.5**	**60.3**	**75.2**	**71.2**	**73.3**	**66.9**	**70.2**
Men	63.4	70.9	43.8	66.4	75.2	71.9	70.6	68.3	70.9	68.0	63.3	76.7	65.2	73.4	66.9	69.6
Women	62.0	72.3	44.0	70.9	82.9	71.8	59.9	63.8	67.6	49.8	56.2	73.5	82.5	73.1	67.0	71.1
Age:																
16-24 years old	62.5	56.7	42.3	61.9	91.1	77.6	85.5	71.1	83.7	55.0	61.5	84.0	97.1	77.9	58.7	74.1
25-44 years old	63.7	79.3	46.3	68.1	77.9	71.6	60.6	64.8	71.5	64.2	53.6	79.1	78.1	74.4	64.6	70.6
45 years or older	61.0	57.9	41.0	71.5	76.3	70.0	66.1	67.2	59.5	57.8	74.0	66.4	45.2	70.6	75.4	67.9
Age first left full-time education:																
16 years or younger	60.0	74.4	33.4	69.9	77.3	76.4	75.5	72.8	68.7	79.4	61.1	80.1	71.8	80.2	70.4	72.5
17-18 years old	60.2	71.9	40.3	83.1	73.1	76.3	75.4	60.3	63.4	69.8	59.9	80.7	76.8	73.0	59.2	69.2
19 years or older	69.3	70.1	46.5	61.9	82.9	63.7	47.6	67.4	73.2	44.7	60.2	61.6	67.8	69.7	66.6	68.5
Occupation:																
White-collar	58.9	74.0	43.7	65.7	78.4	60.8	43.2	63.4	66.6	45.9	65.2	63.1	65.6	65.0	62.3	65.3
Blue-collar	70.3	73.3	44.1	72.7	78.6	81.3	76.0	69.2	69.3	72.3	56.8	83.3	76.9	79.1	71.4	74.3
Sector:																
Industry	65.7	82.5	43.6	71.0	80.8	73.3	82.1	72.5	80.2	78.6	55.5	83.2	73.5	70.2	64.8	72.7
Services	66.7	69.1	45.0	70.5	85.1	76.3	51.5	65.3	68.8	54.1	64.6	65.8	79.5	74.2	69.0	73.1
Public administration	42.4	45.2	40.7	63.7	44.7	46.4	26.7	43.9	24.2	31.8	50.1	75.2	28.6	85.2	59.4	44.7

Source: Secretariat estimates from the Eurobarometer 44.3 (1996) survey.

3. Changes in perceived job insecurity over time

The top panel of Table 5.3 presents some evidence regarding the evolution of workers' perceptions of job security over time in seven European countries (Belgium, France, Germany, Italy, the Netherlands, Switzerland and the United Kingdom). The left-hand side of the panel shows the change between 1985 and 1995 in employees' evaluations of fourteen aspects of their job, including employment security. Employment security stands out as the aspect for which the percentage giving a favourable response has dropped the most over this period.[7]

The right-hand side of the top panel shows how the change in perceived employment security between 1985 and 1995 differs across the seven countries. The measure of security fell significantly in all seven, but with sharp differences in the magnitude of the decline. Security fell very notably in Germany and the United Kingdom, to a lesser extent in France and the Netherlands, and by the smallest amounts (although still significantly so) in Belgium, Italy and Switzerland.

The bottom panel of Table 5.3 presents detailed information on the 1992 and 1996 values of the four measures used to calculate the ISR "norm" level of employment security for 21 OECD countries. Again, the picture is of a general fall in perceptions of security, with only Finland recording a rise; particularly large declines were recorded in France, Italy and Switzerland. The sharpest falls come from the percentage not worried about the future of their company and the percentage satisfied with their job security. The other two, more company-specific, measures fall less, tending to give the lie to the suggestion that increased insecurity comes largely from a change in management practice. The evidence here points to a more general sense of insecurity.

Table 5.4 presents, for two countries, changes in perceptions of insecurity over time broken down by demographic characteristics. The top half considers data for Germany, based on the Socio-economic Panel. The measures of insecurity used are the percentage of respondents saying that they are worried about their job security and the percentage saying that there is some chance that they will lose their jobs over the next two years. The first measure falls from over 40 per cent in the mid-1980s to just under 30 per cent in 1991 and then rises sharply to over 40 per cent in 1994-95. This measure of job insecurity in Germany has risen the most for younger workers, for workers with lower levels of education, and for workers in blue-collar occupations.

The bottom half of Table 5.4 presents similar findings for the first five waves of the British Household Panel Survey, covering 1991 to 1995.[8] The measure here is the percentage of employees saying that they are not completely satisfied with their job security. This percentage jumped sharply in 1992 and has remained high since [similar results are obtained by Spencer (1996) from the British Social Attitudes Survey]. The rise in perceived insecurity is observed across all groups, although somewhat larger rises in insecurity are reported by older workers.

The last five rows of each panel of Table 5.4 show perceived job insecurity by tenure length. In Panel A, there was a clear negative correlation between insecurity and tenure in the German data up until the early 1990s, with workers with under five years of tenure being the most insecure. Recent figures reveal a more even distribution of insecurity across tenure groups; the same pattern is evident in the figures for perceived likelihood of job loss. In Panel B, the same flattening out has occurred in the British data. In both countries, there is now very little difference in insecurity perceptions across workers with up to fifteen years of tenure.

In sum, the evidence is clear-cut. Perceived employment insecurity has become more widespread in the 1990s in all OECD countries for which data are available.

4. What might account for the growing perception of insecurity?

There is a tendency to equate job insecurity with the likelihood of losing one's current job. However, the numbers in the top panel of Table 5.4 hint that the two are not entirely equivalent: the percentage thinking it likely that they will lose their job is notably higher than the percentage worried about their job security. It is likely that feelings of insecurity reflect a wide range of labour market developments, of which the risk of job loss is only one, albeit important, component.

One useful way of characterising job insecurity is to express it as a function of the *expected loss* that would result from losing one's current job. Expected loss is the difference between the value of the current job (V_J), which depends on the current job's wages and non-pecuniary benefits, and the expected value of what would happen if the current job ends (V_F). Letting s be the probability of the current job ending:

$$\text{Expected loss} = V_J - [sV_F + (1 - s)V_J] = s(V_J - V_F).$$

V_F, the value of "what happens next", is itself dependent on the chance of finding another job, which is represented by r, the expected value of the next job that is found, V_N, and the expected value of

Table 5.3. **Changes in employees' responses over time concerning attributes of their jobs**

A. Selected European results

	Job attributes: European averages[a]		Employment security by country	
	Percentage point change in proportion responding favourably: 1985 to 1995		Percentage point change in proportion responding favourably: 1985 to 1995	
Safety and working conditions	5*	Belgium	–6*	
Immediate supervision	3*	France	–14*	
Company management	2*	Germany	–18*	
Communications	2*	Italy	–5*	
Operating efficiency	1	Netherlands	–12*	
Job satisfaction	0	Switzerland	–3*	
Work organisation	–3*	United Kingdom	–22*	
Working relationships	–4*			
Company identification	–8*			
Pay	–8*			
Benefits	–8*			
Training and information	–8*			
Performance and development	–10*			
Employment security	–12*			

* Statistically significant change.
a) European average data refer to the unweighted average of Belgium, France, Germany, Italy, the Netherlands, Switzerland and the United Kingdom.
Source: International Survey Research (1995*a*).

B. OECD results

	Recent developments in job insecurity in OECD countries									
	Percentage not worried about the future of their company		Percentage saying company offers job security as good as, or better than, that in most other companies in the industry		Percentage sure of a job with their company as long as they perform well		Percentage satisfied with their job security		"Norm" level of security	
	1992	1996	1992	1996	1992	1996	1992	1996	1992	1996
Australia	69	67	75	64	59	58	78	67	70	64
Austria[a]	79	77	75	74	59	50	66	60	70	65
Belgium	69	68	60	55	42	38	66	60	59	55
Canada	74	61	61	56	49	45	60	56	61	55
Denmark[b]	71	68	70	69	54	52	62	58	64	62
Finland[b]	46	53	63	63	39	37	45	57	48	53
France	72	58	70	59	32	28	56	41	58	47
Germany	73	64	54	60	51	46	62	48	60	55
Greece[a]	78	75	69	70	41	41	59	61	62	62
Ireland[a]	63	60	63	65	46	47	54	57	57	57
Italy	78	68	74	64	53	37	64	55	67	56
Japan	84	64	32	29	33	37	46	44	49	44
Mexico	87	82	72	74	21	25	71	67	63	62
Netherlands	71	66	58	62	59	60	74	61	66	62
Norway	..	73	..	77	..	60	..	66	..	69
Portugal[a]	82	75	64	59	24	27	59	59	57	55
Spain	76	68	72	66	22	21	64	60	59	54
Sweden[b]	66	60	61	59	46	44	49	49	56	53
Switzerland	81	62	80	62	55	51	78	57	74	58
United Kingdom[b]	52	47	57	54	39	39	52	43	50	46
United States	60	52	58	55	46	38	57	47	55	48
Unweighted average	72	65	64	62	44	42	61	56	60	56

.. Data not available.
a) Data in 1992 columns refer to 1994.
b) Data in 1992 columns refer to 1993.
Source: Data supplied by International Survey Research.

Table 5.4. **Changes in job insecurity over time: German and British panel results**

A. German results

	Percentage of employees worried about job security							
	1985	1987	1989	1991	1992	1993	1994	1995
Total	**41.2**	**41.1**	**34.8**	**29.2**	**37.5**	**36.5**	**44.0**	**42.3**
Men	42.8	41.1	35.6	31.3	39.9	39.5	47.6	45.2
Women	38.7	41.1	33.7	26.2	34.1	32.4	39.2	38.6
Age:								
16-24	52.8	46.6	37.7	32.9	40.6	39.0	48.5	54.1
25-44	38.9	41.2	34.6	27.7	36.7	36.2	44.1	42.6
45-69	37.8	37.7	33.6	29.9	37.4	35.9	42.4	38.3
Education:								
Secondary	54.8	53.9	44.5	37.6	49.2	48.3	54.5	52.7
Upper secondary	44.2	44.1	37.6	31.4	40.5	39.3	47.1	45.7
Tertiary	20.8	20.3	17.2	16.1	20.2	20.1	28.9	26.5
Occupation:								
White-collar	33.6	31.4	28.5	23.1	31.5	29.5	35.5	36.3
Blue-collar	51.7	52.5	45.1	39.0	49.0	49.9	59.8	55.6
Tenure (years):								
0-4	46.5	48.2	38.0	30.9	37.5	36.4	43.2	44.6
5-9	38.9	39.3	36.4	29.8	36.8	35.7	47.9	42.4
10-14	39.4	36.0	33.7	25.9	38.0	39.9	46.4	44.4
15-19	39.6	38.5	35.2	33.1	39.4	34.0	41.8	41.3
20+	33.1	30.9	25.7	25.2	36.8	36.0	40.4	37.1

	Percentage of employees saying there is some chance of losing their job over the next two years					
	1985	1987	1989	1991	1993	1994
Total	**47.4**	**46.9**	**46.2**	**47.6**	**54.1**	**63.7**
Men	47.2	46.9	46.5	47.6	56.5	64.1
Women	47.7	47.0	45.7	47.6	51.0	63.2
Age:						
16-24	62.1	57.1	55.4	52.2	58.3	71.5
25-44	47.2	47.8	49.6	50.7	58.4	67.3
45-69	39.2	39.6	36.4	40.4	45.8	55.3
Education:						
Secondary	52.8	56.5	48.2	49.1	52.7	66.0
Upper secondary	50.6	49.9	51.1	51.5	58.8	67.4
Tertiary	30.7	28.6	25.4	32.4	38.6	51.3
Occupation:						
White-collar	43.1	41.0	42.2	44.8	49.8	58.7
Blue-collar	51.6	54.4	52.8	51.5	63.1	71.9
Tenure (years):						
0-4	57.6	57.5	54.7	52.8	60.0	69.1
5-9	46.3	44.3	48.7	52.8	55.5	67.0
10-14	42.0	43.6	43.9	42.6	52.1	62.6
15-19	41.0	39.0	37.7	45.2	47.0	55.6
20+	31.4	32.0	29.2	34.8	45.9	54.4

Source: Secretariat estimates from the German Socio-Economic Panel.

B. British results

	Percentage of employees not completely satisfied with job security				
	1991	1992	1993	1994	1995
Total	**61.7**	**75.8**	**77.9**	**78.2**	**78.4**
Men	66.4	79.7	81.6	82.6	81.9
Women	56.7	71.8	74.2	73.9	75.0
Age:					
16-24	61.2	72.9	78.1	74.9	75.1
25-44	64.5	79.2	80.6	80.2	80.5
45-69	57.9	72.6	74.3	77.5	77.5
Education:					
Secondary	57.2	71.9	71.3	71.6	72.7
Upper secondary	62.2	75.9	79.8	78.5	77.7
Tertiary	66.5	79.8	81.3	82.9	83.2
Occupation:					
White-collar	60.5	75.3	78.3	78.0	77.7
Blue-collar	64.5	76.8	76.8	78.5	80.2
Tenure (years):					
0-4	63.0	76.5	79.2	79.1	78.7
5-9	61.1	76.7	77.0	77.7	79.1
10-14	59.4	75.1	75.0	79.2	80.8
15-19	58.4	69.9	71.3	74.4	77.4
20+	49.3	65.9	69.4	65.0	63.9

Source: Secretariat estimates from the British Household Panel Survey.

being without a job, V_U. Substituting into the expression for expected loss above yields:

$$\text{Expected loss} = s(V_J - rV_N - (1 - r)V_U).$$

The above equation makes it clear that the expected loss, and so job insecurity, increases as:

- *s*, the likelihood of the current job ending, increases (as long as $V_J > V_F$);
- *r*, the likelihood of finding a new job, falls (as long as $V_N > V_U$);
- V_N, the expected value of the new job, falls;
- V_U, the expected value of being without a job, falls; and
- V_J, the value of the current job, rises.

Rising job insecurity will indeed result from jobs which are more likely to end. However, according to the above taxonomy, it could also come about from reduced chances of finding another job (due to higher unemployment, for example), from less attractive new jobs (lower wages, temporary or part-time), or from a more unpleasant prospect of joblessness (which is partly dependent on the generosity of unemployment benefits). The remainder of this chapter will seek to relate the pervasive rise in insecurity reported by workers to the various components of expected loss outlined above, starting with the most obvious one, how long jobs last for and how likely it is that the current job will end.

C. WHAT DO PATTERNS OF TENURE REVEAL ABOUT JOB SECURITY?

1. Introduction

This section considers two standard measures of job stability, employer tenure and retention rates, as an additional dimension for assessing the debate on insecurity. The relationship between employer tenure and insecurity is not a simple one. In a booming job market, for example, many job losers may find new jobs fairly quickly, though not, perhaps, with an identical wage-benefit package. In addition, workers who voluntarily leave jobs often do so to improve their position. Moreover, there have always been segments of the labour market which are characterised by relatively insecure jobs and considerable labour turnover [Buechtemann (1993); Lindeboom and Theeuwes (1991)].

A number of analysts, however, have suggested that the links between business enterprises and workers nowadays are more short-term and tenuous then they were in the past, reflecting a more volatile business environment [Locke, Kochan and Piore (1995); Boyer (1990)]. To the extent that this is true, a more volatile environment would tend to increase the costs of "guaranteeing" long-term employment relationships, leading to a shift in the relationship between employer tenure and insecurity. Largely anecdotal evidence suggests that businesses in some industries and countries respond to such "shocks" differently or to different degrees, sometimes by altering their human resource practices to rely more on the external labour market [Osterman (1987); Doeringer (1991); Dore (1996)].

2. An overview of employer tenure

The distribution of employer tenure, as well as average and median tenures,[9] provides a broad summary of patterns in job stability between countries and over time. OECD (1993) found significant differences in tenure across countries, with North America being characterised by relatively shorter tenures and many European countries and Japan having considerably longer tenures. Table 5.5 presents the tenure distribution in 1995 for 23 OECD countries. The OECD unweighted average is almost ten years. Some countries have noticeably shorter tenures (Australia, Canada, Denmark, the United Kingdom and the United States) than others (Belgium, Italy, Japan, Poland and Portugal). Germany is more or less the "average" European country in terms of its tenure distribution. When the distribution of employment across tenure classes is considered, the difference between countries is most pronounced for the shortest tenure categories. There are also significant differences in the share of workers with twenty or more years of tenure, with Australia, the United Kingdom and the United States having a noticeably lower percentage of such workers.

Multivariate analysis can provide a more precise estimate of differences in average tenure across countries by controlling for differences in the distribution of employment by gender, age and broad occupational category. The analysis, presented in Annex 5.A, generally confirms the pattern of cross-country differences presented in Table 5.5. Employer tenure is shortest in the United States, Australia and the United Kingdom, followed by Canada and Denmark. It is longest in Italy, followed by Belgium, Portugal and France.

Tenure profiles of different types of workers

Table 5.6 presents average tenure by demographic groups, industry, occupation and broad level of educational attainment. Comparing unweighted averages across countries, men have longer tenure than women, and tenure rises sharply with age. There is considerable variation across industries, the highest tenures being in electricity, gas and water supply, and the shortest being in

Table 5.5. **Distribution of employment by employer tenure, 1995**

Percentages

	Under 6 months	6 months and under 1 year	1 and under 2 years	2 and under 5 years	*Under 5 years*	5 and under 10 years	10 and under 20 years	20 years and over	Average tenure (years)	Median tenure[a] (years)
Australia[b]	15.8	9.4	12.6	21.6	*59.4*	19.5	14.3	6.8	6.4	3.4
Austria	7.6	5.0	8.9	21.2	*42.7*	19.0	22.5	15.7	10.0	6.9
Belgium	7.0	4.6	7.7	17.5	*36.8*	19.6	24.2	19.4	11.2	8.4
Canada[c]	14.8	7.9	..	28.0	*50.8*	19.8	18.1	11.3	7.9	5.9
Czech Republic[d]	10.1	9.1	24.4	12.3	*55.8*	12.0	14.8	17.4	9.0	2.0
Denmark	15.5	9.6	11.4	16.2	*52.7*	18.2	17.7	11.4	7.9	4.4
Finland	12.1	5.5	6.2	13.4	*37.2*	23.1	22.3	17.3	10.5	7.8
France	10.1	4.9	8.0	17.7	*40.6*	17.4	23.3	18.7	10.7	7.7
Germany	7.9	8.2	9.4	22.0	*47.5*	17.2	18.4	17.0	9.7	10.7
Greece	8.3	4.3	8.4	18.5	*39.6*	20.6	26.6	13.3	9.9	7.5
Ireland	9.3	8.5	11.0	20.1	*48.8*	18.1	21.2	11.9	8.7	5.3
Italy	4.5	4.0	7.0	18.1	*33.6*	20.8	26.1	19.5	11.6	8.9
Japan[e]	..	7.6	15.0	13.9	*36.5*	20.7	21.5	21.4	11.3	8.3
Korea[f]	7.8	6.0	21.5[g]	19.7[g]	*54.9*	15.9	14.1	15.1	8.7	2.5
Luxembourg	6.4	5.0	8.6	20.7	*40.7*	21.4	21.4	16.4	10.2	7.2
Netherlands	9.8	6.5	11.4	20.4	*48.1*	20.3	19.8	11.9	8.7	5.5
Poland	..	2.4[h]	3.3	7.1	*12.8*	12.5	30.9	43.9	17.5	17.0
Portugal	7.2	6.2	9.0	17.5	*39.9*	18.5	20.8	20.8	11.0	7.7
Spain	27.3	8.2	4.9	11.1	*51.4*	14.4	17.7	16.5	8.9	4.6
Sweden	8.6	6.2	7.4	15.1	*37.3*	23.0	22.7	17.0	10.5	7.8
Switzerland	8.5	7.2	9.0	20.8	*45.5*	22.9	18.3	13.3	9.0	6.0
United Kingdom	10.5	9.1	10.7	19.5	*49.8*	23.5	17.3	9.4	7.8	5.0
United States[b, i]	12.6	13.4	8.5	20.0	*54.5*	19.8	16.8	9.0	7.4	4.2
Unweighted average	10.6	6.9	10.2	17.9	*44.2*	19.1	20.5	16.3	9.8	6.7
Standard deviation	4.9	2.4	4.9	4.4	*10.0*	3.1	4.2	7.2	2.2	3.1
Coefficient of variation (%)	46.0	35.1	47.7	24.5	*22.7*	16.5	20.3	44.1	22.0	46.0

.. Data not available.

a) The median is calculated by taking the tenure class into which the middle observation falls and assuming that observations are evenly distributed by tenure within this class.

b) 1996.

c) 6 months or under; 7 to 12 months; 1 to 5 years; 5 years and under; 6 to 10 years; 11 to 20 years; more than 20 years.

d) Up to 6 months; more than 6 months to 1 year; more than 1 year to 3 years; more than 3 years to 5 years; more than 5 years to 10 years; more than 10 years to 20 years; more than 20 years.

e) Less than 1 year; 1 to 2 years; 3 to 4 years; 0 to 4 years; 5 to 9 years; 10 to 14 years; 15 to 19 years; 20 years or more.

f) 1992.

g) 1 to under 3 years; 3 to under 5 years.

h) Under 1 year.

i) Under 6 months; 6 months to 1 year; 13 months to 23 months; 2 years to under 5 years; under 5 years; 5 years to under 10 years; 10 years to under 15 years; 15 years to under 20 years; 20 years or more.

Sources: Data for Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal, Spain, Sweden and the United Kingdom come from unpublished data provided by Eurostat on the basis of the European Community Labour Force Survey. For data for Australia, Canada, the Czech Republic, Japan, Korea, Poland, Switzerland and the United States, see Annex 5.A.

hotels and restaurants. Wholesale and retail trade are also characterised by short average tenures. Generally, higher-skilled white-collar occupational groups (*e.g.* legislators, senior officials and managers) have longer tenures, while lower-skill white-collar occupations (*e.g.* service workers, shop and market sales workers) and blue-collar workers have shorter tenures. The degree of dispersion of tenure by industry and occupation across countries is similar. These differences in simple averages are generally confirmed by multivariate analysis.

Average tenures by educational attainment do not show a consistent pattern across countries: in some countries (the United Kingdom, Portugal, Italy and Germany), high-education workers have longer tenures than low-education workers; in other countries (Belgium, Finland, France), the reverse is true. However, multivariate analysis for countries of the European Union reveals that, controlling for differences in gender and age distributions, individuals with the lowest level of education have the shortest tenure, while those with a middle level of education have the longest.[10]

Trends in employer tenure

Table 5.7 shows the proportion of short-tenure workers (tenure of less than one year) and average

Table 5.6. **Average employer tenure by gender, age, industry, occupation and education, 1995**

Years

	Australia[a, b]	Austria	Belgium	Canada[b, c]	Denmark	Finland	France	Germany	Greece	Ireland	Italy	Japan[b, d]	Korea	Luxembourg	Netherlands	Poland	Portugal	Spain	Sweden	Switzerland[b]	United Kingdom	United States[a, b]	**Unweighted average**
Total	**6.4**	**10.0**	**11.2**	**7.9**	**7.9**	**10.5**	**10.7**	**9.7**	**9.9**	**8.7**	**11.6**	**11.3**	**5.2**	**10.2**	**8.7**	**17.5**	**11.0**	**8.9**	**10.5**	**9.0**	**7.8**	**7.4**	**9.6**
Men	7.1	11.0	11.7	8.8	8.3	10.5	11.0	10.6	10.9	9.8	12.1	12.9	5.9	11.7	9.9	18.2	11.1	9.8	10.7	10.4	8.9	7.9	10.4
Women	5.5	8.6	10.4	6.9	7.5	10.4	10.3	8.5	8.2	7.2	10.6	7.9	3.4	7.6	6.9	16.6	10.9	7.2	10.4	7.1	6.7	6.8	8.4
Age:																							
15-24 years	1.9	2.8	1.9	1.6	1.5	1.7	1.6	2.4	2.1	2.2	2.8	2.5	..	2.3	1.8	2.7	2.8	1.0	2.2	2.4	2.2	1.6	2.1
25-44 years	5.9	8.8	9.4	6.5	6.3	8.2	9.0	7.7	8.2	8.5	9.4	9.5	..	8.4	7.6	14.9	9.5	7.3	8.2	6.7	7.0	6.2	8.2
45 or more years	11.1	17.8	19.4	13.8	14.5	16.6	17.5	16.2	17.0	15.4	19.2	18.0	..	18.8	16.0	29.3	17.9	16.1	15.9	14.6	12.2	12.4	16.7
Industry:																							
Agriculture, hunting, forestry and fishing	6.6	12.1	6.3	13.0	5.3	7.9	7.8	8.0	10.3	8.0	8.8	..	..	7.2	6.0	..	10.1	4.8	9.8	8.7	8.9	6.6	8.2
Mining and quarrying	7.2	14.0	12.9		7.2	15.0	15.5	13.8	11.7	12.5	11.3	12.8	..	7.3	10.5	..	10.4	11.8	15.4	..	9.0	9.6	11.5
Manufacturing	7.0	10.6	11.8	8.9	7.8	12.3	12.1	10.8	9.0	8.3	11.2	13.1	..	14.7	10.3	..	10.4	10.9	11.5	10.6	9.0	9.2	10.5
Electricity, gas and water supply	12.2	15.5	14.5	12.7	13.2	15.8	15.3	13.1	13.2	16.4	16.4	17.3	..	15.8	13.6	..	15.2	15.9	15.1	13.6	13.5	..	14.7
Construction	6.5	9.2	8.1	6.8	7.1	9.2	8.7	7.9	10.3	8.8	8.6	11.2	..	7.8	9.0	..	6.9	4.7	11.0	9.4	8.2	5.7	8.2
Wholesale and retail trade	4.5	7.8	8.8	6.1	5.8	8.2	8.0	8.0	6.4	7.0	8.8	10.6	..	7.6	6.8	..	8.9	6.9	8.9	7.4	5.9	5.0	7.5
Hotels and restaurants		5.7	4.5	4.3	3.3	6.9	5.1	4.8	5.8	4.2	7.4		..	4.2	3.5	..	6.4	4.8	3.3		4.1	..	5.0
Transport, storage and communication	8.6	12.0	13.7	10.5	9.1	12.0	13.1	12.1	12.6	12.4	14.4	13.0	..	13.1	10.1	..	15.9	12.3	11.7	11.2	9.2	9.3	11.8
Financial intermediation	5.7	12.2	13.7	7.8	11.5	14.5	14.2	11.1	11.3	9.7	14.1	11.5	..	9.5	11.0	..	15.3	14.1	12.4	8.0	8.7	5.9	12.2
Real estate, renting and business activities		7.6	7.5		7.3	7.8	7.9	7.1	5.8	6.1	7.7	8.1	..	6.3	6.8	..	6.0	5.1	8.1		5.7		6.9
Public administration	7.3	13.4	13.2	11.8	12.3	11.9	13.8	11.6	13.9	14.0	14.7	..	..	12.4	11.4	..	15.0	12.3	13.8	11.3	11.2	10.3	12.7
Community, social and personal services		9.7	11.5	8.8	8.1	9.9	10.4	9.1	9.9	8.8	12.6	8.8	..	10.2	8.8	..	12.1	9.0	10.5	8.0	7.6	6.2	9.4
Occupation:																							
Legislators, senior officials and managers	9.8	12.8	11.9	10.3	9.6	..	11.8	11.6	14.6	11.6	17.0	..	9.9	11.3	11.7	..	11.4	12.2	..	11.1	9.5	9.0	11.5
Professionals	7.6	12.1	12.1	9.5	10.4	..	12.0	11.2	11.0	10.3	13.7	..	6.2	11.7	10.0	..	12.2	10.8	..	8.8	9.2	8.5	10.6
Technicians and associate professionals		10.0	11.8		8.9	..	11.8	10.2	9.7	8.5	12.6	..	5.8	10.6	9.0	..	14.1	10.4	..	9.5	8.1	7.6	9.8
Clerks	6.6	10.9	12.4	7.4	9.2	..	11.5	10.0	10.5	9.0	12.4	..	5.2	10.9	8.7	..	13.1	10.6	..	8.9	7.2	7.2	9.5
Service and shop and market sales workers	4.1	7.9	9.0	5.5	5.7	..	8.0	7.6	7.8	6.5	9.5	..	4.1	6.4	6.2	..	9.0	7.1	..	6.6	5.3	5.4	6.8
Skilled agricultural and fishery workers		13.3	8.1		5.4	..	7.3	7.4	11.2	9.4	10.2	..	4.8	9.0	7.9	..	10.8	7.0	..	7.9	7.6	7.0	8.4
Craft and related trades		9.6	10.4	7.7	7.8	..	10.5	9.8	10.2	7.8	10.3	..	4.9	10.3	9.3	..	9.7	8.8	..	10.0	8.9	8.9	8.9
Plant and machine operators	6.0																						
and assemblers		10.5	10.8	8.3	7.8	..	11.3	10.6	9.9	9.3	11.8	..	4.6	13.3	10.0	..	11.1	10.4	..	10.8	8.5	8.0	9.8
Elementary occupations		8.1	9.6	10.5	5.5	..	8.2	7.5	8.3	7.0	9.8	..	4.1	7.9	6.8	..	8.6	5.7	..	8.0	5.9	5.0	7.4
Salaried employees												13.9											
Production workers												12.5											
Education:																							
Primary/Lower Secondary	6.8	9.3	12.5	9.3	6.5	13.3	11.6	8.4	10.3	9.5	11.6	15.3	5.3	9.7	8.2	17.5	10.9	8.9	13.1	9.1	7.8	5.8	10.0
Upper secondary/ secondary diploma	5.9	10.1	10.7	8.2	7.9	9.6	10.5	9.7	9.2	8.0	11.2	11.4	4.9	10.7	8.9	17.6	9.1	8.2	9.7	8.9	7.5	7.9	9.3
Some or completed tertiary education	6.7	10.7	10.4	7.8	9.1	9.5	9.8	10.5	10.4	8.6	13.0	9.5	5.6	11.0	8.5	17.2	12.9	9.3	10.0	9.1	8.3	7.4	9.8

.. Data not available.

a) 1996.

b) Data for industry and occupations use the national classification systems and are regrouped to correspond approximately to NACE (Rev. 1) and ISCO-88 for purposes of this table. See Annex 5.A for details.

c) Averages for education are based on weighted averages of mid-points of tenure classes.

d) Data for salaried and production workers are for manufacturing only.

Source: See Table 5.5.

Table 5.7. **Employees with tenure of under one year and average tenure: developments over time**

	1980		1985		1989		1990		1995	
	Tenure <1year (percentage)	Average tenure (years)	Tenure <1year (percentage)	Average tenure (years)	Tenure <1year (percentage)	Average tenure (years)	Tenure <1year (percentage)	Average tenure (years)	Tenure <1year (percentage)	Average tenure (years)
Australia	22.3[a, b]	6.6[a, b]	26.6[c]	5.5[c]	..	..	22.7[d]	6.3[d]	25.2[e]	6.4[e]
Canada	26.4	7.0	25.7	7.4	27.5	7.2	26.0	7.2	22.7	7.9
Finland	17.9	7.9	18.5	8.4	22.2	8.0	18.7	8.4	18.0	9.2
France	13.8[f]	9.5[f]	12.2	10.1	..	..	16.7	9.7	14.4	10.4
Germany	..	..	11.3[g]	9.8[g]	11.2	10.2	..	..	9.8[h]	10.8[h]
Japan	10.4	9.3	9.4	10.3	9.5	10.8	9.8	10.9	7.6	11.3
Netherlands	..	..	11.6	9.4	..	..	20.3	8.2	13.1[h]	9.6[h]
Spain	..	..	15.2[b, i]	11.5[b, i]	..	..	24.6	9.1	24.8	9.1
United Kingdom	..	..	17.7	8.3			21.2	7.8	18.6	8.3
United States[j]	28.2[k]	7.1[k]	27.3[l]	7.5[l]	28.8[i]	7.3[i]	28.8[d]	7.2[d]	26.0[e]	7.4[e]

.. Data not available.
a) 1979.
b) Data are not strictly comparable with subsequent data as they include the self-employed and unpaid family workers.
c) 1986.
d) 1991.
e) 1996.
f) 1982.
g) 1984.
h) 1994.
i) 1987.
j) Data for 1991 and 1996 are for wage and salary workers only, while data for 1978, 1983 and 1987 and for those with tenure < 1 year for 1991 are for all employed persons.
k) 1978.
l) 1983.
Sources: For Australia, Canada, Japan and the United States, see Table 5.5 and OECD (1993). See Annex 5.A for Finland, France, Germany, the Netherlands, Spain and the United Kingdom.

tenure for selected years and countries. Average tenure is taken as an indicator of long-term or overall job stability, while the proportion of short-tenure workers reflects short-term turnover [OECD (1993)]. Between 1985 and 1995, there was an increase in short-term turnover in France, the Netherlands, Spain and the United Kingdom, and a decline in Australia, Canada, Finland, Germany, Japan and the United States. Average tenure remained broadly unchanged in the Netherlands, the United Kingdom and the United States, while it increased in Australia, Canada, Finland, France, Germany and Japan, and declined in Spain

These broad patterns could simply reflect changes in the demographic composition of employment. Although not shown here, multivariate analysis, controlling for changes in the age and gender mix of employment, indicates that average tenure did not change between 1985 and 1995 in nine of the ten countries; the sole exception is Spain, where average tenure fell. Tenure is also affected by the economic cycle through changes in hiring, layoffs and quits, declining in upswings and increasing in downturns [ILO (1996)]: supporting this hypothesis, the average tenure figures in Table 5.5 are significantly negatively correlated with the output gap, defined as the ratio of actual to potential GDP. However, repeating the analysis for workers with tenures of five years or more, which reduces the effect of recent macroeconomic conditions, leaves the results unchanged.

3. Staying with the same employer: developments in retention rates

Another measure of the stability of the employer-employee match is the so-called ''retention rate''. The five-year retention rate, for example, is defined as the percentage of employees in a certain year who will still be with their current employer five years later. In this chapter, retention rates are calculated by age, gender, length of tenure, level of education and occupation in an attempt to identify the groups of workers for whom changes have been the most pronounced.

The calculations are based on a so-called ''synthetic cohort'' analysis, involving a comparison of the number of workers classed by five-year tenure and age groups at five-year intervals. Thus, for a particular tenure group, such as those with 0 to 5 years of tenure, the retention rate measures the percentage of those workers who remained with their employer for a further five years, thus entering the tenure group of five to ten years [see Annex 5.A].

Tables 5.8 and 5.9 present these calculations for Australia, Canada, Finland, France, Germany, Japan, Spain, Switzerland, the United Kingdom and the United States. Estimates refer to five-year retention rates, except for the United States, where four-year rates are calculated over the period 1979-1991. There are significant differences across countries, with the highest retention rates being found in Japan and Germany and the lowest in Finland, Spain and Australia.

A key issue is what has happened over time. The overall retention rate has declined in some countries and remained stable in others. It declined somewhat in Germany and Japan. The biggest declines were registered in Finland, France and Spain.[11] The United States experienced a decline in the overall retention rate between 1983-1987 and 1987-1991, though this rate had apparently increased a bit by 1991-1996.[12] The retention rate increased slightly in Australia, Canada and the United Kingdom. Retention rates are less influenced by recent developments in the economic cycle than is average tenure.[13] The overall picture is of fairly stable average tenure and retention rates.

There are more marked patterns when different groups are considered. The decline in retention rates is concentrated among men in Germany and Japan. Among employed women it has risen in all countries, except Finland, France and Spain. Increased maternity leave provisions in legislation and in collectively bargained contracts, allowing women to continue working for the same employer, have likely had a positive influence on women's retention rates – as has been suggested for the United Kingdom [Gregg and Wadsworth (1996*b*)]. In most countries, retention rates increase from young through to prime-age workers and then decline as employees approach retirement. This curve is more pronounced in Japan, which reflects the traditional pattern of older workers leaving an employer prior

Table 5.8. **Retention rates by worker characteristics, 1980-1985, 1985-1990 and 1990-1995**

Percentages

	Australia[a]	Canada	Finland	France	Germany[b]	Japan	Spain	Switzerland[c]	United States (1)[d]	United States (2)[e]
Total									50.9	..
1980-1985	..	46.7	52.3	..	..	67.2	..	..	54.8	..
1985-1990	38.5	45.5	45.4	56.7	62.1	64.8	57.9[f]	..	50.8	..
1990-1995	41.3	47.9	42.8	49.9	60.7	64.2	42.8	55.2	..	48.6
Gender:										
Men									51.9	..
1980-1985	..	49.0	53.2	..	..	77.0	..	..	58.6	..
1985-1990	40.2	48.4	47.0	57.3	64.1	73.5	59.4[f]	..	53.5	..
1990-1995	42.4	49.1	45.8	50.5	60.2	71.9	43.0	60.9	..	49.8
Women									49.6	..
1980-1985	..	43.8	51.3	..	..	50.4	..	..	50.7	..
1985-1990	36.3	42.1	43.7	56.2	59.3	50.5	54.8[f]	..	47.9	..
1990-1995	40.0	46.5	39.3	49.5	61.4	51.8	42.4	49.0	..	47.4
Age:										
15-24 years									28.7	..
1980-1985	..	28.0	21.7	..	..	48.7	..	..	30.6	..
1985-1990	23.0	22.3	13.9	32.7	43.7	49.0	19.9[f]	..	25.6	..
1990-1995	25.4	25.1	14.5	24.0	43.4	50.8	14.8	35.4	..	24.6
25-44 years									55.1	..
1980-1985	..	55.0	57.3	..	..	77.9	..	..	59.6	..
1985-1990	45.0	53.8	49.5	64.7	68.1	73.5	60.0[f]	..	55.5	..
1990-1995	47.0	55.2	47.2	56.4	66.3	71.1	50.0	57.7	..	54.2
45+ years									67.2	..
1980-1985	..	54.9	50.7	..	..	58.9	..	..	66.8	..
1985-1990	45.6	54.3	49.3	51.4	71.5	60.8	63.6[f]	..	61.2	..
1990-1995	48.1	51.9	40.6	47.6	65.4	62.8	45.7	69.8	..	56.2

.. Data not available.
a) 1986-1991 and 1991-1996.
b) 1984-1989 and 1989-1994.
c) 1991-1996.
d) Four-year retention rates are calculated over 1979-1983, 1983-1987 and 1987-1991.
e) Estimates for 1991-1996 are five-year retention rates.
f) Data are for 1987-1992 and include the self-employed and unpaid family workers.
Sources and notes on estimation method: See Annex 5.A.

Table 5.9. **Retention rates by length of tenure, education and occupation, 1980-1985, 1985-1990 and 1990-1995**

Percentages

	Australia[a]	Canada	Finland	France	Germany[b]	Japan	Spain	Switzerland[c]	United Kingdom[d]	United States (1)[e]	United States (2)[f]
Length of tenure											
[5-10]/[0-5]										45.9[g]	..
1980-1985	..	35.1	39.2	..	..	55.9	..	..	..	49.1[g]	..
1985-1990	28.5	31.6	33.0	36.5	53.7	56.4	41.0[h]	..	35.5	45.1[g]	..
1990-1995	33.1	36.4	35.5	28.1	49.9	58.2	28.6	46.5	37.7	..	39.7
[10-15]/[5-10]										68.3[g]	..
1980-1985	..	69.5	66.0	..	..	74.9	..	..	..	69.9[g]	..
1985-1990	58.2	67.9	57.0	88.6	71.8	70.6	78.7[h]	..	..	64.5[g]	..
1990-1995	63.0	71.3	55.9	90.2	73.9	68.3	73.7	72.1	..	..	64.6
[15-20]/[10-15]										75.5[g]	..
1980-1985	..	76.6	73.0	..	..	84.0	..	..	..	81.4[g]	..
1985-1990	73.4	74.8	68.0	73.2	71.7	77.8	79.7[h]	..	..	76.6[g]	..
1990-1995	61.8	76.0	62.9	77.6	74.2	75.6	73.0	72.8	..	..	68.3
Education (employees 25 years or over)											
Primary/lower secondary										52.2	..
1980-1985	..	50.0	..	..	..	64.6	..	..	..	55.2	..
1985-1990	41.3	43.5	..	..	69.1	62.1	..	..	..	46.7	..
1990-1995	49.4	42.3	..	46.2	54.4	62.2	40.7	53.4	..	..	42.7
Upper secondary education										59.5	..
1980-1985	..	53.1	..	..	..	76.2	..	..	..	62.4	..
1985-1990	49.6	44.4	..	..	67.3	72.2	..	..	..	56.4	..
1990-1995	56.1	51.4	..	58.1	63.3	67.9	62.5	57.2	..	..	46.1
Some or completed tertiary										59.9	..
1980-1985	..	..	..	..	..	82.6	..	..	..	62.5	..
1985-1990	46.3	..	..	..	75.4	75.3	..	..	..	59.8	..
1990-1995	35.7	61.1	..	58.8	81.4	74.4	71.0	65.1	..	..	64.1
– Non-university tertiary education										54.9[i]	..
1980-1985	..	59.2	..	..	..	71.7	..	..	..	61.4[i]	..
1985-1990	47.6	..	..	..	80.0	70.3	..	..	..	57.6[i]	..
1990-1995	24.6	59.1	..	..	80.0	66.6	..	..	..	..	67.8[i]
– University tertiary education										64.4[i]	..
1980-1985	..	..	..	..	..	85.4	..	..	..	63.4[i]	..
1985-1990	44.2	..	..	..	70.8	76.8	..	..	..	61.8[i]	..
1990-1995	54.6	65.6	..	..	78.6	77.5	71.0	..	..	..	61.1[i]
Occupation											
White-collar											
1980-1985	..	48.1	..	..	..	74.7[j]	..	..	..	54.2	..
1985-1990	..	44.8	..	59.6	62.2	73.4[j]	..	..	..	51.2	..
1990-1995	44.8	48.4	..	53.0	66.0	73.4[j]	33.1[k]	55.7	..	..	49.3
Blue-collar											
1980-1985	..	45.5	..	..	..	67.6[j]	..	..	..	57.6	..
1985-1990	..	47.0	..	51.7	62.9	62.8[j]	..	..	..	49.9	..
1990-1995	35.6	48.9	..	44.5	51.6	63.7[j]	39.9[k]	54.0	..	..	46.8

.. Data not available.
a) 1986-1991 and 1991-1996.
b) 1984-1989 and 1989-1994.
c) 1991-1996.
d) Retention rates presented for the United Kingdom refer to the intervals of less than 5 years, to 5 to less than 10 years.
e) Four-year retention rates are calculated over 1979-1983, 1983-1987 and 1987-1991, and for occupations, only over 1983-1987 and 1987-1991.
f) Estimates for 1991-1996 are five-year retention rates.
g) Weighted averages of two four-year retention rates. See Annex 5.A.
h) Data are for 1987-1992 and include the self-employed and unpaid family workers.
i) Non-university tertiary education comprises persons who have less than a completed college degree, while university education comprises individuals with a completed degree.
j) For manufacturing only.
k) Estimates for both occupational groups are below the overall retention rate as a result of missing observations.
Sources and notes on estimation method: See Annex 5.A.

to retirement to work elsewhere until they reach the official retirement age [Dore, Bounine-Cabalé and Tapiola (1989)]. There are no consistent patterns over time for the different age groups in these countries.

Table 5.9 shows retention rates by tenure, education and occupation. From 1985-1990 to 1990-1995, the retention rate between 0-5 years and 5-10 years declined on average by 0.5 percentage points, while that between 5-10 and 10-15 years was stable on average, and that from 10-15 to 15-20 years declined by 2.5 percentage points. Since the early 1980s, five of the eight countries considered have experienced declines in the 10-15 to 15-20 year retention rate, with the falls being most pronounced in Australia, Finland, Japan and Spain.

The largest changes in retention rates are recorded for those with different levels of education. To begin with, there are already sharp differences in levels across countries. For those with no more than lower-secondary education, the retention rate is particularly low in Canada, Spain and the United States. This group experienced falling retention rates in Canada, Germany, Japan and the United States, but a rising retention rate, albeit from a low level, in Australia. Similar cross-country patterns also apply to those who have only completed upper-secondary education. Retention rates for those with at least some tertiary education decreased in Australia and Japan, although they increased in Germany. Except in Japan, the retention rate for those with a university education has increased over recent years.[14] Taken at face value, these results suggest some tendency for low-educated workers to be less secure in their jobs over time in the majority of countries for which data are available.

4. Short-term job instability

It is likely that one key component for assessing job instability comes very early into the job match and so will not be well-captured by the broad retention rates presented above. This subsection analyses both the incidence of very short tenure and turnover and its evolution over time in order to ascertain the extent to which jobs have become more insecure for those trying to establish, or re-establish, matches. This focus can be thought of as examining the available evidence on both the *s* and *r* sources of insecurity outlined in Section B.4.

Gregg and Wadsworth (1995) have proposed a measure of very short-term turnover or separation rates, based on a comparison of the number of workers with three or fewer months tenure relative to those with 3-6 months tenure; they argue that the difference represents unsuccessful matches. This index is presented in Table 5.10. Caution should be exercised in its interpretation, as estimates can be subject to considerable measurement error.[15] The rate of short-term turnover (column six) varies from 7 per cent in Denmark to over 50 per cent in Spain and Sweden, with an average figure of 33 per cent. The United Kingdom, where the growth of short-term turnover has been noted as a prominent development, actually has a relatively low turnover rate compared with most other countries.

Table 5.10 also presents historical (*i.e.* using synthetic cohorts) separation rates between one and two years of tenure, which run from 20 per cent in Luxembourg, up to 85 per cent in Spain. On average, 43 per cent of those with tenure of less than one year in 1994 failed to last beyond two years with the firm.[16]

Estimates over the period 1980 (or 1985) to 1995 in Table 5.11 show that turnover between the first and second year of an employment match rose greatly in Spain, increased somewhat in Australia, Germany, the United Kingdom and the United States, and was stable in Finland and Canada. However, it is difficult to draw firm conclusions about trends since data on short-term turnover are very sensitive to the cycle and it is not possible with so few observations to correct for this effect.

The initial stage of the employment relationship is a key moment in the process of integration into a longer-term stable employment relationship, through which both new labour market entrants and established workers, who are changing jobs, must pass. The data presented suggest that many job matches "fail" at this moment, though the extent of this failure varies greatly across countries, and evidence for a general increase in "failures" over time is fairly weak. Key questions are why so high a proportion of matches fail early on and whether this matters for assessments of insecurity.

5. Implications of the observed trends in tenure for insecurity

The evidence points to substantial differences in tenure, turnover and retention rates across countries. There is, however, only weak evidence that these figures are correlated with the perceived job insecurity described in Section B. Although the short average tenure figures for the United Kingdom and the United States tie in with their relatively high perceptions of insecurity, in general there is no significant cross-country correlation between perceptions of insecurity and either median tenure ($\rho = 0.21$, $N = 19$)[17] or average tenure ($\rho = 0.23$, $N = 19$). The same is true for the smaller number of countries with retention rate information ($\rho = 0.51$, $N = 8$): Japan, the country with the highest retention rate, also has the highest level of perceived employ-

Table 5.10. **Measures of employment turnover, 1995**

	Employer tenure					Estimates of short-term employment turnover	
	Percentage of total employment					Percentages	
	1 month or under	3 months or under	Greater than 3 months and under 6 months	6 months but under 1 year	1 year and under 2 years	Separations from the first quarter to the second quarter[a]	Separation rate from 1 year to 2 years[b]
Australia[c, d]	..	9.7	6.1	9.4	12.6	37.6	49.7
Austria	1.7	4.3	3.3	5.0	8.9	22.7	29.5
Belgium	2.4	4.4	2.6	4.6	7.7	41.6	28.4
Canada[d]	..	6.4	6.7	8.8	10.3	30.1[e]	53.0
Denmark	2.5	8.1	7.5	9.6	11.4	7.0	51.2
Finland	3.0	8.5	3.6	5.5	6.2	25.2[f]	58.0[f]
France	2.4	5.3	4.7	4.9	8.0	11.6	41.6
Germany	2.1	4.6	3.3	8.2	9.4	26.5	31.4
Greece	1.6	5.3	3.0	4.3	8.4	43.1	30.7
Ireland	1.6	5.0	4.3	8.5	11.0	12.5	30.4
Italy[g]	1.2	..	6.1	3.8	6.0	47.2[h]	45.9
Luxembourg	1.4	4.3	2.1	5.0	8.6	50.0	20.0
Netherlands	3.5	6.2	3.6	6.5	11.4	42.1	26.1
Portugal	2.4	4.5	2.7	6.2	9.0	39.4	36.4
Spain	8.8	18.4	8.9	8.2	4.9	51.5	85.1
Sweden	2.1	5.8	2.8	6.2	7.4	52.2	50.1
Switzerland	..	4.9	3.6	7.2	9.0	26.4	42.6
United Kingdom	1.8	5.7	4.8	9.1	10.7	16.0	41.2
United States[c, i]	..	6.3	6.3	13.4	8.5	17.2[j]	65.9[j]
Unweighted average	2.6	6.5	4.5	7.1	8.9	32.5	43.0

.. Data not available.

a) This rate is calculated as the difference between the number employed with tenure 3 months or under, which is an indicator of new hires, and tenure over 3 months and under six months, as a percentage of new hires. The formula used is [100*((≤ 3 months) – (3 > and < 6 months))/(≤ 3 months)] based on Gregg and Wadsworth (1995).

b) This rate is calculated as the difference between the number employed with tenure less than 1 year in 1994, which represents the source population, *less* the number with 1 and under 2 years tenure in 1995 as a percentage of the source population. The formula used is [100*((< 1 year (1994)) – (≥1 year and < 2 years (1995)))/(< 1 year (1994))]. Estimates for Australia, Austria, Canada, Finland, Sweden, Switzerland and the United States refer to contemporaneous separation rates.

c) 1996.

d) Periods are as follows: under 3 months, 3 months and under 6 months, 6 months and under 1 year, 1 year and under 2 years.

e) The formula is modified to [100*((< 3 months*3/2) – (3 ≥ and < 6 months))/(< 3 months*3/2)] as data are rounded to the nearest month.

f) The formulae are modified to [100*((< 3 months*3/4) – ((3 ≥ and < 6 months)*4/3))/(< 3 months*3/4)] and [100*((< 1 year*11/12) – ((≥ 1 year and < 2 years)*12/11))/(<1 year*11/12)].

g) Periods are as follows: under 1 month, 1 month to 6 months, over 6 months to 1 year, over 1 year to 2 years.

h) The formula is modified to [100*((1 month*6) – (6 > and ≤ 12 months))/(1 month*6)].

i) Periods are as follows: under 3 months, 3 months and under 6 months, 6 months to 1 year, over 1 year to 23 months.

j) The formulae are modified to [100*((< 3 months*3/2.5) – (3 ≥ and < 6 months))/(< 3 months*3/2.5)] and [100*((≤ 1 year) – ((> 1 year and ≤ 23 months)*12/11.5))/(≤ 1 year)] as data are rounded to the nearest month.

Sources: See Table 5.5. Data for Italy are from Gennari and Sestito (1996).

ment insecurity. Last, there is no evidence of significant cross-country correlations between either the first to second quarter or one to two year separation rates presented in Table 5.10 and perceived job insecurity ($\rho = -0.20$ and $\rho = 0.36$, respectively, N = 18): see the high turnover and low insecurity in Australia and Greece, and the low turnover and high insecurity in France and the United Kingdom.

Across groups of workers, however, the picture is more consistent. Blue-collar workers typically report greater job insecurity than do white-collar workers, and it is, indeed, the former who have shorter tenure and lower retention rates. Similarly, in most countries, younger workers feel more insecure than older workers, a pattern which is repeated in the calculated retention rates. The picture with respect to education is less clear. Retention rates generally rise with education and less-educated workers are somewhat more likely than more-educated workers to perceive their job as insecure. Moreover, retention rates for the less educated have generally fallen over time. On the other hand, more detailed data for two countries (Table 5.4) show that,

Table 5.11. **Trends in employment turnover, 1980-1995**

	Separation rate from 1 year to 2 years (per cent of estimated hiring)			
	1980	1985	1990	1995
Australia	..	46.9[a]	38.9[b]	49.7[c]
Canada	52.1	58.2	52.0	53.0
Finland[d]	44.9	46.2	31.5	45.1
Germany	..	25.0[e]	24.0[f]	27.2[g]
Spain	..	15.6[h]	62.4	85.0
United Kingdom		40.5	43.3	42.9
United States[i]	58.9[j]	60.5[h]	63.4[b, k]	65.9[c, l]

.. Data unavailable.
a) 1986.
b) 1991.
c) 1996.
d) This rate is calculated as [100*((≤ 11 months*12/11) – (≥ 1 year and < 2 years))/(≤ 11 months*12/11)] as data are rounded to the nearest month.
e) 1984.
f) 1989.
g) 1994.
h) 1987.
i) Data for 1991 and 1996 are for wage and salary workers only, while data for 1983 and 1987 are for all employed persons.
j) 1983.
k) This rate is calculated as [100*((< 1 year*12/11.5) – (≥ 1 year and < 2 years))/(< 1 year*12/11.5)] as data are rounded to the nearest month.
l) This rate is calculated as [100*((≤ 1 year) – ((> 1 year and ≤ 23 months)*12/11.5))/(≤ 1 year)] as data are rounded to the nearest month.
Source: See Annex 5.A.

while perceived job insecurity falls with education in Germany, the reverse is true in Britain.[18]

The picture given by tenure and retention rates is of little deterioration in overall job stability, even though certain groups, such as the less-educated, have experienced notable declines. One important point is that changes in measures of tenure and retention rates understate the "true" developments as they are endogenous, being to an extent determined themselves by what individuals think of their chances in the job market. For example, widespread feelings of insecurity could discourage individuals from quitting jobs, which, all other things unchanged, would have the effect of increasing tenure and retention rates above what they would have been otherwise.[19] Another perspective, as discussed in Section B.4., is that rising job insecurity may also have come from a deterioration in the consequences of job loss.

D. THE LABOUR MARKET AND JOB INSECURITY

Reported perceptions of job insecurity reflect individuals' reactions to a potentially wide range of economic and social factors. As it is extremely difficult to accurately gauge all of the elements that might influence such perceptions, it is *a priori* problematical to establish any empirical relationship between them and objective measures of the same phenomenon.[20]

The tenure and retention rate information in Section C does not give a full picture of the rise in insecurity, nor of its different levels across countries. For example, Chairman Greenspan, in his testimony before the Senate Banking Committee, suggested that the high level of job insecurity in the US economy, despite its tight labour market, may come from workers' fear that their skills have become inadequate for them to find another good job if they lose their current position. This section, based on the model of expected loss outlined in Section B.4, considers the relationship between job insecurity and workers' wider labour market experience. First, the relationship between insecurity and the general macroeconomic situation, which undoubtedly informs the "what happens next" part of job insecurity, is considered. Particular attention is paid to how long it takes to find another job and the characteristics of the job that is found. Last, the potential relationship between institutional features of the labour market and job insecurity is considered.

1. The transition to a new job

The key element of this transition is the ease with which another job can be found, as measured by r in Section B.4. This probability is strongly dependent on the economic cycle. With respect to the 1996 ISR data presented in Table 5.1, it is possible to appeal to macroeconomic developments to explain the higher-than-average levels of job insecu-

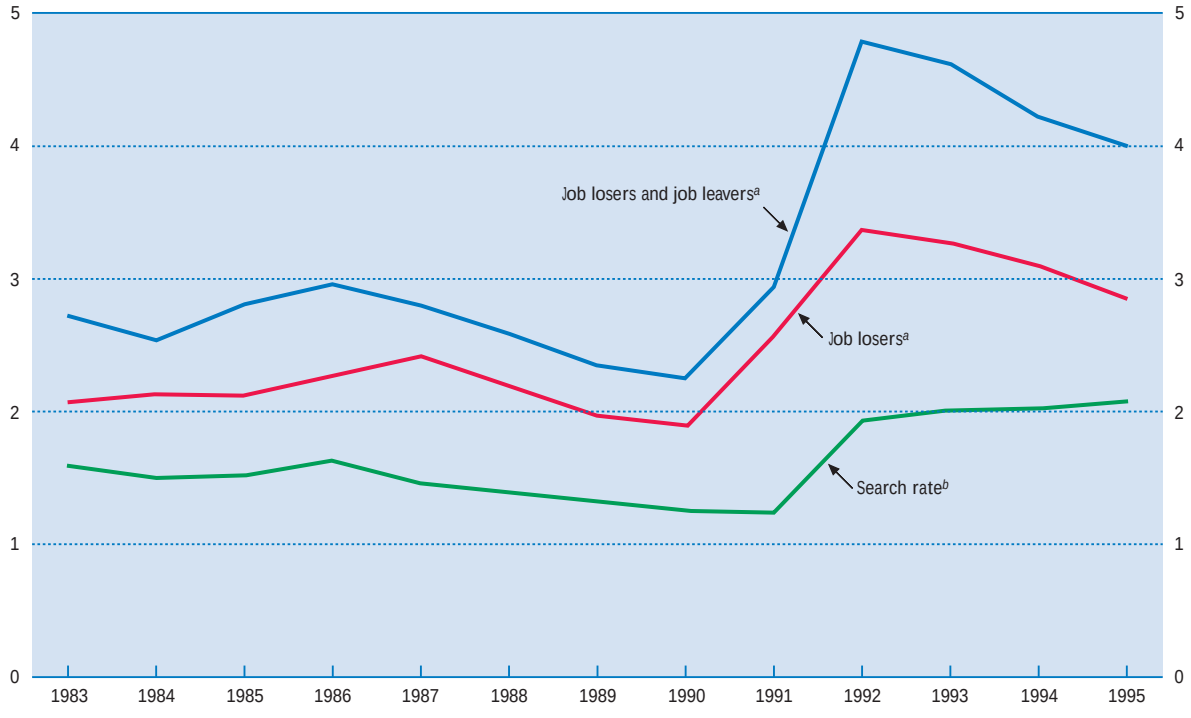
rity reported in Belgium, Finland, France, Spain and Sweden. It is, however, also obvious that the cycle alone cannot completely account for the inter-country distribution of perceptions of job insecurity. The countries with the highest reported levels of insecurity are Japan, the United Kingdom and the United States. In 1996, unemployment had been falling for about four years in the latter two countries. On the other hand, unemployment had been rising for five years in Japan, but was still only just over 3 per cent. The correlations between this measure of reported job insecurity and both unemployment and employment rates are, in fact, insignificant ($\rho = 0.16$ and $\rho = 0.09$, respectively, N = 21). There is, however, a significant negative correlation between insecurity and the output gap ($\rho = -0.45$*, N = 20). This conclusion is confirmed by the analysis of changes in the level of perceived job insecurity between 1992 and 1996 in Table 5.3.[21]

Chart 5.2 presents an additional hybrid measure of the difficulty of transition from one job to another: the proportion of currently unemployed or inactive persons who lost their jobs due to layoff (job losers) and those who left their jobs voluntarily (job leavers) within the previous six months as a percentage of employment. They represent *unsuccessful* separations, in that they have not yet found another job. The proportions charted are a function of two of the elements of insecurity discussed in Section B.4: the separation rate (which shows how many individuals lose or leave their jobs) and the ''re-employment rate'', which determines how

Chart 5.2.

Job losers and job leavers (currently jobless) and the proportion of employees engaged in job search because they fear their job is at risk, selected European countries

Percentage of employment



a) For those currently unemployed or not in the labour force, who left their job within the past six months. Weighted average for the following countries: Belgium, Denmark, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands and the United Kingdom. For Germany, 1984 instead of 1983; for the Netherlands, 1985 instead of 1984 and 1987 instead of 1986; and for Luxembourg, 1993 instead of 1992.

b) Employed individuals searching for a job because of the risk or certainty of loss or termination of their present job, or because their present job is considered as a transitional job. Weighted average for the following countries: Belgium, Denmark, France, Germany, Greece, Ireland, Italy and the United Kingdom.

Source: Unpublished data provided by Eurostat on the basis of the European Community Labour Force Survey.

quickly they find another job. As the measure of job losers and job leavers is increasing in *s* and decreasing in *r*, it should be positively correlated with job insecurity.[22]

Estimates are plotted for 1983-1995 for a weighted average of ten European Union countries. There are significant issues of cross-country comparability of these data, as well as problems of accurate measurement of layoffs and quits. These are outlined in Box 1, and they suggest considerable caution in interpreting these calculations. Given the caveats in Box 1, there is a significant increase in the proportion of unsuccessful separations, stemming from an increase in job losers beginning in 1992 which might, therefore, be considered as partly cyclical. Though the increase is proportionately large, even in 1992 it was just 5 per cent of employment and stood at 4 per cent in 1995.[23]

Table 5.12 presents more detailed data on the employment prospects of job losers and job leavers. In an attempt to control for the effects of the business cycle, it compares the trough of the 1980s to that of the 1990s. Bearing in mind conceptual and measurement problems, during the 1990s trough the proportion of job losers without work was highest in Spain, followed by Denmark, Australia, Canada, Finland and France. It was lowest in Japan, followed by Portugal, the Netherlands and Austria. Job loss stemming from dismissals or redundancies may have a particularly strong effect on employment security. During the 1990s, this "rate" was highest in Denmark, Greece, Finland, Germany, Ireland and the United Kingdom, while between the downturn of the 1980s and that of the 1990s, it increased the most in Denmark, Germany, Belgium and Greece.[24]

A more detailed multivariate analysis for nine EU countries reveals that there has been a significant increase in the proportion of job losers currently without work, over and above that expected on the basis of the cycle, of approximately 1 percentage point on average across all the countries. This rise began in 1991 and has persisted through to 1995.[25] There has also been a smaller absolute, but *larger* proportional, increase in the percentage of job leavers currently without work. Indeed, this rise was large enough to bring about a significant decline in the share of job losers in total separations, as measured here. Overall, the 1990s have witnessed an increase in the numbers of both unsuccessful job losers and unsuccessful job leavers.

Across countries and over time, the differences shown in Table 5.12 may indicate real differences in the probability of losing or leaving a job (*s*), real differences in the likelihood of finding a new job (*r*) or some combination of each. Unfortunately, little data on either are available separately. Another measure which reflects both *s* and *r* is the proportion of workers who are currently searching for another job because they believe their current one is at risk. This is also graphed in Chart 5.2. The level of this type of search has increased notably during the 1990s, as compared with the 1980s.[26] This rise could

Box 1. **Job losers and job leavers: measurement issues**

Table 5.12 and Chart 5.2 present data on those currently either unemployed or not in the labour force who left their job due to layoff (job losers) and those who left voluntarily (job leavers). The number of currently jobless job losers and job leavers are expressed as a percentage of employment (usually an average of the current and previous periods). As such, these percentages represent one measure of the risk that employed workers will become jobless. These data are not measures of either the probability of being laid off or the probability of quitting a job. Both probabilities are flows over a given period of time, whereas the available data are stocks. Conceptually, the probability of layoff is the proportion of workers at time *t* who, one period later, had lost that job and are either unemployed, not in the labour force or had found another job. However, the data presented here concern only *former* employees who are currently without a job.

There are considerable differences in measurement across countries. The most marked are between the countries of the European Union and all others. In the former, job losers and job leavers who last worked within the previous six months are included. In Australia, only individuals who are currently unemployed and left a full-time job within the previous two years are included. In Canada, individuals who are currently unemployed or not in the labour force and who worked within the previous twelve months are included. In Japan, only the currently unemployed are included and no time limit is specified as to when they last worked. Finally, in the United States, only the currently unemployed who last worked within the past five years are included. These differences clearly restrict the comparability of the data.

Table 5.12. **Estimated separation rates by reason for leaving last job**

For those currently unemployed or not in the labour force who left jobs within the past 6 months

	Layoffs and quits (per cent of total employment)		Layoffs (per cent of total employment)						[(Layoffs)/ (Layoffs + Quits)] (percentages)	
			All		Dismissals and redundancies		Temporary contracts			
	Trough 1980s[a]	Trough 1990s[a]	Trough 1980s[a]	Trough 1990s[a]	Trough 1980s[a]	Trough 1990s[a]	Trough 1980s[a]	Trough 1990s[a]	Trough 1980s[a]	Trough 1990s[a]
European Union										
Austria	..	3.1	..	1.9	..	1.1	..	0.2	..	61.6
Belgium	1.1	4.1	1.1	3.0	0.5	1.7	0.4	0.8	96.9	73.7
Denmark	5.1	8.6	4.3	7.1	2.2	4.0	2.0	2.5	82.7	82.2
Finland	..	6.1	..	5.5	..	2.0	..	3.5	..	89.7
France	3.2	5.9	2.9	5.0	1.3	1.8	1.4	3.1	91.7	85.9
Germany[b]	1.6	4.3	1.1	2.8	0.7	2.0	0.2	0.3	70.4	65.5
Greece	4.5	7.7	4.1	4.9	1.7	2.8	2.3	1.3	91.4	63.1
Ireland	3.7	5.2	3.4	3.3	2.5	1.8	0.9	1.4	90.8	64.4
Italy	1.5	2.7	1.4	2.3	0.5	0.8	0.8	1.4	91.9	85.7
Netherlands	3.4	2.5	3.1	1.7	2.8	1.2	0.0	0.1	89.6	68.6
Portugal	3.1	1.1	2.9	0.8	0.5	0.3	2.3	0.2	91.9	69.6
Spain	7.7	14.8	7.2	12.8	1.5	1.7	5.7	10.8	94.3	86.7
Sweden	..	5.9	..	4.1	..	1.3	..	2.6	..	68.7
United Kingdom	4.4	4.4	2.7	2.7	1.8	1.8	0.8	0.8	61.6	60.5
Weighted average[c]	2.7	4.4	2.2	3.2	1.2	1.7	0.9	1.2	81.0	72.1
Other countries										
Australia	..	7.9	..	5.7	..	..	..	..	..	72.1
Canada	9.9	9.2	5.9	5.7	..	..	..	..	59.3	62.0
Japan	1.9	2.4	0.6	0.7	..	..	..	..	29.1	27.3
United States	5.1	4.0	4.3	3.1	..	..	..	..	83.8	79.1

a) For countries, periods are as follows: Australia (1991-1992); Austria (1995); Belgium (1987-1988, 1993-1994); Canada (1982-1983, 1992-1993); Denmark (1984, 1993-1994); Finland (1995); France (1984-1985, 1993-1994); Germany (1984, 1993-1994); Greece (1983-1984, 1993-1994); Ireland (1983-1984, 1993-1994); Italy (1984-1985, 1993-1994); Japan (1987-1988, 1996); the Netherlands (1983, 1993-1994); Portugal (1986, 1994-1995); Spain (1987, 1993-1994); Sweden (1995); the United Kingdom (1983, 1993-1994); and the United States (1982-1983, 1991-1992).

b) Prior to 1991, data refer to former western Germany.

c) Includes only Belgium, Denmark, France, Germany, Greece, Ireland, Italy, the Netherlands and the United Kingdom.

Sources: Data for the countries of the European Union are from unpublished data provided by Eurostat on the basis of the European Community Labour Force Survey. Data for Australia are from the Australian Bureau of Statistics, *The Labour Force, Australia,* various years. Data for Canada are from Statistics Canada, *Labour Force Historical Review.* Data for Japan are from the Statistics Bureau, Management and Coordination Agency, *Report on the Special Survey of the Labour Force Survey,* various years. Data for the United States are from the Bureau of Labor Statistics, *Employment and Earnings,* various years. See Annex 5.A for definitions.

come about from an increased risk of layoff in the 1990s or, equivalently, from greater perceived difficulty in finding a new job.

Further statistical evidence on the duration of joblessness following layoff is available for European Union countries. Beginning in 1993, there was an increase in the number of job losers who had been jobless for between one and three years, expressed as a percentage of employment. The number rose from a low of 0.42 per cent in 1990 to 0.79 per cent by 1995.[27] Both youth and older workers are more at risk of this long duration of joblessness following layoff. Its incidence is highest in Spain, followed by Ireland, France and Denmark, and is lowest in the Netherlands and the United Kingdom.

2. The characteristics of the next job

The discussion above has shown that there is some evidence of a rise over recent years in the number of job separations leading to joblessness, and of an increase in the likely duration of that joblessness. Both phenomena may well have contributed to increased feelings of job insecurity. However, the risk of employed workers becoming jobless is not the only issue in the debate on insecurity. The characteristics of the next job that is expected to be found, as represented by V_N in Section B.4, are likely important, too.

One key characteristic of the next job is how long it lasts. The figures in Table 5.10 show that almost half of those with tenure of less than

one year do not last into the second year. This high turnover reflects real barriers to finding a stable job: those laid-off have to restart the process of attempting to establish themselves with a new employer, while quits so early in the match could reflect the difficulty of finding a satisfactory job.

Another important aspect of the next job is how much it pays. It is difficult to obtain cross-country data on the wages that those who separate will earn in subsequent positions. In the United Kingdom, real wages of entry-level jobs fell relative to other jobs between 1979 and 1991 [Gregg and Wadsworth (1996*a*)]. One summary indicator of the distribution of wages is overall earnings inequality. The correlation between the "norm" level of insecurity in 1996 in Table 5.1 and the level of earnings inequality figures reported in OECD (1996) is positive but weak ($\rho = 0.17$, N = 15), whereas that with the change in earnings inequality between 1980 and 1990 is stronger ($\rho = 0.41$, N = 16).

Detailed evidence on the process of transition from one job to another is available from studies of displaced workers (*i.e.* workers who were laid-off from a permanent job match). North American results show that there are substantial costs associated with this displacement. Displaced workers are less likely to be employed subsequently than those who quit, those who are re-employed are less likely to be employed in full-time jobs and, finally, even if re-employed in full-time jobs, they tend to earn substantially less than equivalent non-displaced workers, and less than their own pre-displacement earnings [Crossley, Jones and Kuhn (1994); Farber (1993, 1996); Podgursky and Swaim (1987)].[28] Moreover, studies for the United States have shown that these earnings losses are persistent [Topel (1990); Ruhm (1991); Jacobsen, Lalonde and Sullivan (1993); Huff Stevens (1997); Schoeni and Dardia (1996)].

Overall, the evidence suggests that job displacement is associated with significant costs in the short-term, which may persist for some groups. Over time, Farber (1993, 1996) concludes that there has been no change in the costs of displacement in the United States between the 1980s and the 1990s. However, Polsky (1996) finds that the costs of layoff increased significantly between 1976-1981 and 1986-1991. It is, however, very difficult to obtain cross-country evidence on these costs and on their evolution over time.

3. Institutional features of the labour market

The analysis so far has sought to explain job insecurity in terms of the likelihood of separation (*s*), the difficulty of finding a new job (*r*) and the likely characteristics of the new job (V_N). This subsection considers whether insecurity may also be related to institutional features of countries' labour markets.

One obvious feature is the degree of employment protection legislation (EPL), which measures the extent of legal protection given to workers in case of layoff [see OECD (1994)]. Three measures of EPL were considered: the number of weeks of advance notice required for individual dismissals; an aggregate index of EPL for all workers; and an aggregate index of EPL for permanent workers. All correlations with perceptions of insecurity were negative ($\rho = -0.24$, N = 20; $\rho = -0.09$, N = 20; and $\rho = -0.15$, N = 18, respectively), in line with prior expectations, but none were significant. A second feature is the extent of temporary employment, which depends to a large degree on labour market regulations [OECD (1996)]. There is, however, no cross-country relationship between the extent of temporary employment in the labour market and reported job insecurity ($\rho = -0.17$, N = 16); nor is there strong evidence that those countries where temporary employment has expanded the most are also those where insecurity has risen the most.

A third relevant institutional factor is the unemployment benefit replacement rate, which provides an indication of the degree of financial hardship associated with job loss – as represented by V_U in Section B.4. The OECD summary measure of benefit entitlements – which is computed as an average of 18 gross replacement rates [Martin (1996)] – declined in 13 of 20 countries between 1985 and 1995, though by no more than 8 percentage points, while it increased in the remaining seven by up to 19 percentage points. However, this index does not take full account of changes in other aspects of UI systems, such as programme eligibility requirements or benefit duration [see OECD (1996)]. Considering the distribution of replacement rates, it is of interest to note that the three countries with the lowest summary measures of gross replacement rates (Japan, the United Kingdom and the United States) figure among the four countries with highest levels of perceived employment insecurity. Considered across all countries with available data, there is a negative correlation between the two ($\rho = -0.42^*$, N = 20).

Last, a number of commentators have suggested that the collective bargaining system may play an important role in moderating employer-employee relationships. One objective of unions is likely to improve their members' job security [Freeman and Medoff (1984); Polivka (1996)]. In fact, the correlations between insecurity and variables measuring aspects of the collective bargaining system yield some of the most significant results. Specifically, the 1996 "norm" levels of job insecurity are significantly negatively correlated with the level of

collective bargaining coverage (ρ = –0.44*, N = 18), but not significantly with union density (ρ = –0.30, N = 18). Further, negative correlations are also found between the 1985–1995 change in insecurity in seven European countries in Table 5.3 and both the 1980-1994 change in trade union density (ρ = –0.70*, N = 7) and the change in collective bargaining coverage (ρ = –0.49, N = 5). One possible explanation of this finding is that workers not covered by union agreements may feel more exposed to changes in the macroeconomic environment. Also, the rank correlation between the centralisation of the collective bargaining system and insecurity is statistically significant (ρ = –0.47*, N = 18): workers in countries with more decentralised bargaining report higher job insecurity.

This section has considered a range of measures of the *consequences* of job loss as a potential explanation for rising job insecurity. As a general measure of the chances of re-employment, job insecurity across countries partly reflects differences in the business cycle. In addition, there is a rising risk of joblessness for the employed, over and above that predicted by the business cycle, stemming either from an increase in separations or from a fall in the probability of re-employment, or both. Considering the characteristics of the new job, high and rising short-term turnover points to increased difficulty in establishing a satisfactory new match. Further, numerous studies have highlighted that displaced workers face substantial and persistent earnings losses, although evidence is limited to North America. Last, some institutional features of the labour market are correlated with job insecurity. Most notably, workers in countries with higher levels of unemployment benefit replacement rates and higher, or more centralised, union coverage are less likely to feel insecure.

E. CONCLUSIONS

There has been a widespread and, in some countries, very sharp increase in individuals' perceptions of job insecurity between the 1980s and the 1990s. One point of note is the high levels of insecurity reported in countries where unemployment is low or falling: Japan, the United Kingdom and the United States. Job insecurity may well result from a wide range of different objective factors. In addition to measures of job stability, tenure and retention rates, insecurity also depends on the consequences of separation, such as the ease of obtaining a new job, the characteristics of the new job, and the experience of being jobless. It is likely that various combinations of these factors lie behind different countries' experiences of increased insecurity.

In terms of data on average job tenures with the same employer and the likelihood of remaining with the same firm, there is little overall evidence of increased job instability. This apparent paradox can be resolved in a number of ways. One critical point is that tenure and retention rates are less-than-ideal measures of insecurity as they are endogenous, being to an extent determined job insecurity itself; another is that the consequences of separation have worsened. Considering the latter, some part of job insecurity seems to come from the general macroeconomic environment, which impacts upon the ease of obtaining a new job: countries with better economic performance have lower levels of insecurity. The sensitivity of measures of tenure to the cycle (countries with weak hiring having, *ceteris paribus*, longer tenure) helps to explain why increasing job insecurity is found at the same time as one observes little movement in average tenure. In addition, in European Union countries there is a rising risk of joblessness for the employed, although accurate measurement of this phenomenon is difficult, and the levels seem small relative to the extent of perceptions of job insecurity.

In addition, workers' perceived job insecurity is correlated with some labour market institutions. Insecurity is significantly lower in countries where the unemployment benefit replacement rate is higher, where there is a higher level of collective bargaining coverage, and in countries where collective bargaining is more centralised. The former may well reflect the recognition by workers of a safety net ameliorating the experience of being unemployed when they feel that their jobs are under threat. The latter two are more difficult to interpret, but could reflect the ability of unions to protect their members against insecurity.

For some groups of workers there is no paradox. Less-educated and less-skilled workers report both higher levels of job insecurity, compared with their more educated and skilled counterparts, and have lower tenure and retention rates, as well as declines in both. One important consideration is the extent to which declines in their retention rates might reflect changes in human resource management practices and the demand for less-skilled workers. The process of finding a new job and a durable match may be much more difficult for these groups, as there is likely greater competition for entry-level jobs, though this chapter has not examined this question. These are also the workers most likely to experience considerable time in low-paying jobs or to cycle between jobs and no work at all.

Notes

1. For example, information contained in wave five of the British Household Panel Survey shows a very strong link between satisfaction with job security (measured on a one to seven scale) and self-reported general happiness, depression, strain, feelings of self-worth and problems sleeping. Darity and Goldsmith (1996) note that feelings of insecure employment are correlated with stress and depression, and can reduce the worker's commitment to the employer. Burchell (1993) uses British panel information to show that the insecurely employed had psychological well-being levels closer to those of the unemployed than to those of employees; in addition, men who moved from unemployment at the time of the first survey to insecure employment at the time of the second survey showed no improvement in their psychological health.
2. The search was for paragraphs in stories which included: 1) one of the G7 country names; 2) the words "job" or "employment" and; 3) "fear", "uncertain!", "secur!" or "insecur!". The "!" in 3) picks up all trailing letters, so that "secur!" will find both secure and security. The databases were searched from the 1st of January 1982 to the 12th of December 1996, with the number of stories found per year being imputed to the midpoint (July 1st) of each year, except for 1996, for which the midpoint of the dates examined was the 21st of June. The data presented are underestimates, as many stories about job insecurity will not mention a country name (*e.g.* a story in a US newspaper about US job insecurity), and because stories referring to countries in the adjectival form were not picked up (the problem being that "American" picks up stories about Southern and Central America, as well). There is, however, no reason to believe that developments in this number over time are not representative. The data were very kindly supplied by David Fan, of the University of Minnesota. Further details regarding the method of content analysis are contained in Fan (1994).
3. Indeed, it is possible that increased media coverage fuels perceptions of insecurity. This chapter's finding of very sharp increases in such perceptions across almost all OECD countries, in spite of obvious differences in media coverage between countries, argues against this hypothesis.
4. The "norm" level of employment security is calculated as the simple average of the percentage reporting favourable answers (as shown in the parenthesis) to the following four questions: 1) I am frequently worried about the future of my company. (Disagree/Tend to disagree); 2) My company offers a level of job security as good as, or better than, the job security offered in most other companies in our industry. (Agree/Tend to agree); 3) I can be sure of a job with my company as long as I perform well. (Agree/Tend to agree); and 4) How satisfied are you with your job security? (Very satisfied/Satisfied).The norm level of employment insecurity is then 100 per cent minus the norm level of employment security.
5. Alternative information on job insecurity in Japan shows that 43 per cent of workers in 1996 reported that they tend to disagree that they feel sure of their job security, or that they feel unsure of their job security (National Survey on Lifestyle Preferences Fiscal Year 1996, Economic Planning Agency). This figure was 27 per cent in 1982 (Public Opinions Survey, Prime Minister's Office). The percentage saying that they were sure of their job security fell from 22 per cent to just under ten per cent over the same period.
6. The same broad patterns of insecurity among workers are found in the 1989 ISSP dataset and in a number of single-country datasets [the 1994 International Social Science Survey for Australia [Evans and Kelley (1995)], the 1995 wave of the German Socio-economic Panel (GSOEP), the 1995 wave of the British Household Panel Survey for Great Britain and the 1993 Survey of Working Conditions for Norway]. More detailed relationships between individual and job characteristics and self-reported job insecurity for British workers are described in Clark (1997) and International Survey Research (1995*b*).
7. It is of interest to note that several other aspects of the job, training, company identification, and performance and development, all of which might be identified with longer-term employment matches, are also evaluated by workers as having deteriorated over the same period.
8. Panel data allows those who express worries about their job security to be followed. 27 per cent of those with the lowest level of satisfaction with their job security at wave one of the BHPS had separated from their employer by wave two (late 1992), compared to only 12 per cent of those with the highest satisfaction level. By wave five (late 1995), these figures were 51 and 35 per cent, respectively. It is also of interest to find out where those who separated went. At wave two, 22 per cent of the separators who reported wave one satisfaction of 4 or below (on the 1 to 7 scale) were unemployed, compared to 15 per cent of the separators who had wave one satisfaction of 5 to 7. By wave five, 35 per cent of the separators whose wave one satisfaction with job security was 4 or below had experienced at least one spell of unemployment, compared to 25 per cent of those with wave one satisfaction of 5 to 7.
9. The tenure figures presented in this chapter refer to the average length of incomplete spells, as reported

by workers in household surveys: employees are saying how long they have been with their current employer. As they can expect to remain with their current employer for some time further, the average duration of a completed employer-employee match is greater than the average duration of an incomplete spell. In a steady state, it is twice as large [OECD (1984)].

10. This difference persists when only workers aged 25 and over are considered.

11. The Finnish decline reflects the sharp recession and steep rise in unemployment at the beginning of the 1990s. The fact that average tenure in the early 1990s in both France and Finland rose while retention rates declined could stem from both weak hiring and from a likely concentration of layoffs on shorter-tenure workers. Although the Spanish decline partly reflect a change in the sample, it is largely due to an increased use of temporary contracts. The earlier period, 1987-1992, includes the self-employed and family workers while the period 1990-1995 covers only employees. The self-employed typically have longer tenure than employees, so the change in sampling leads to an overestimate of the decline in retention rates.

12. The comparisons of the four-year retention rates for 1979 through 1991 with the five-year rate in 1991-1996 are carried out by multiplying the historical five-year retention rate for 1991-1996 in Table 5.8 (48.6 per cent) by the ratio of the average four-year contemporaneous retention rate in 1991 and 1996 (49.7 per cent) to the average five-year contemporaneous retention rate over the same two years (43.3 per cent). This yields an estimate of 55.8 per cent.

13. Changes in hiring activity during the five-year period between observations do not affect the retention rate, but they do affect average tenure. However, changes in separations over the economic cycle will affect both.

14. The 0-5 to 5-10 year retention rate in the United Kingdom, the only one which can be calculated, has fallen for the less-educated but risen for the higher-educated.

15. One check on the reliability of the three months or under tenure data is to compare them with hiring rates from administrative sources [OECD (1996)]: the results are similar in a number of countries, but the tenure data underestimate hiring in others.

16. The difference between these figures and the separation rates presented above between the first and second quarter sometimes appears too low. This is because the one to two-year separation rate misses out a number of separations during the course of the first year, which are captured in shorter-term separation rates.

17. For all of the correlations, a "*" after the correlation coefficient will indicate significance at the ten per cent level.

18. It is, however, true that the retention rate for those with a university education in the United Kingdom is lower than that for those with other kinds of tertiary education.

19. Another possibility is that job loss amongst certain, high-profile, groups may have contributed to a general feeling of job insecurity. For example, if long-tenure was once perceived as indicating complete job security, declining retention rates amongst long-tenure workers may have brought about feelings of insecurity for all workers; evidence for or against this is not available.

20. There is a significant cross-country correlation (ρ = 0.52*, N = 13) between the percentage of employees searching for a job because they believe their current job to be at risk or because they have a temporary contract which is ending, which might be thought of as an objective indicator of insecurity, and the ISR measure of reported insecurity.

21. One reason for the weaker correlation with unemployment may be that its nature differs significantly across countries, in particular in terms of its duration. The incidence of long-term unemployment, which is one indicator of the degree of difficulty associated with labour market transitions, has not increased between the 1980s and the 1990s. Experiments with the incidence of long-term unemployment did not yield any significant correlations.

22. Another issue, which it is difficult to address here owing to the lack of good comparable data, is that an increase in the proportion of separations due to layoffs, rather than quits, may bring about greater insecurity due to a feeling of loss of control over separation. Available evidence shows that, in Canada, the permanent layoff rate was unchanged while quits fell [Picot and Lin (1997)], and layoffs rose, while quits fell in France [Chambin and Mihoubi (1995); Audirac, Barthelemy and Jaulent (1996)] and the United States [Polsky (1996)].

23. The correlation between the norm level of job insecurity in 1996 and these measures of layoffs and quits is insignificant.

24. Considering only currently unemployed individuals in countries of the European Union, which makes these data more comparable with those of some other countries, does not alter the pattern of results in Table 5.12 and Chart 5.2.

25. The estimated equation for the proportion of job losers currently jobless in country i at time t is:

$$(\text{Job losers/employment})_{it} = \alpha_i + \beta_1 \text{Year}_t + \beta_2 \text{Output gap}_{it} + \beta_3 \text{Gender}_{it} + \beta_4 \text{Age}_{it} + \beta_5 \text{Country}_i + E_{it}$$

where:

Year_t = a vector of twelve dummy variables covering 1983 to 1995, with 1985 being the omitted category;

Output gap_{it} = the difference between actual and potential output;

Gender_{it} = a gender dummy variable;

Age_{it} = a vector of nine dummy variables covering ages 15 to 64 years in five-year bands, with age 40-44 years being the omitted category;

$Country_i$ = a vector of eight dummy variables, with Germany being the omitted category; and

E_{it} = a stochastic error term.

The results, using weighted least squares with employment as the weight, are as follows:

(Job losers/ employment) = 0.47^{**} + 0.14(1983) – 0.02(1984) + 0.13(1986) + 0.33^{*}(1987) + 0.10(1988) – 0.11(1989) – 0.19(1990) + 0.49^{**}(1991) + 1.45^{**}(1992) + 1.36^{**}(1993) + 1.20^{**}(1994) + 0.93^{**}(1995) + 0.004(Output gap) + 0.12(Women) + 2.52^{**}(15-19 years) + 2.69^{**}(20-24 years) + 1.12^{**}(25-29 years) + 0.47^{**}(30-34 years) + 0.21(35-39 years) + 0.06(45-49 years) + 0.44^{**}(50-54 years) + 2.48^{**}(55-59 years) + 4.12^{**}(60-64 years) – 0.01(Belgium) + 2.43^{**}(Denmark) + 1.83^{**}(France) + 1.77^{**} (Greece) + 1.09^{**} (Ireland) + 0.03 (Italy) – 0.46^{**}(Netherlands) + 0.36^{**}(United Kingdom)

Adjusted R^2 = 0.48, N = 2 270

where ** and * indicate significance at the 1 and 5 per cent level, respectively, using a two-tailed T-test. These results were unchanged when missing data for Germany (1983) and for the Netherlands (1984 and 1986) were replaced by data for the subsequent year, as in Chart 5.2.

26. It may seem rather striking that only 2 per cent of employees are searching for fear of losing their current jobs. However, this percentage represents search in one given month only and, depending on how quickly the subsequent quit or layoff occurs, the annual figure will be much higher.

27. Multivariate analysis confirms an increase, beginning in 1993, in the percentage of currently unemployed job losers who have been jobless for between one and three years. The estimated equation is:

$$(\sum_{k=1}^{3} \text{Job losers}_{it-k} / \sum_{k=1}^{3} \text{Employment}_{it-k}) = \alpha_i + \beta_1 \text{Year}_t + \beta_2 \text{Output gap}_{it} + \beta_3 \text{Gender}_{it} + \beta_4 \text{Age}_{it} + \beta_5 \text{Country}_i + E_{it}$$

where:

k = 1 refers to joblessness of 12 to 17 months, k = 2 refers to joblessness of 18 to 23 months, and k = 3 refers to joblessness of 24 to 35 months;

Employment_{it-k} = employment with an appropriate lag

Year_t = a vector of eight dummy variables covering 1987 to 1995, with 1987 being the omitted category;

Output gap_{it} = the ratio of the difference between actual and potential output;

Gender_{it} = a gender dummy variable;

Age_{it} = a vector of nine dummy variables covering ages 15 to 64 years in five-year bands, with 40 – 44 years being the omitted category;

Country_i = a vector of ten country dummy variables, with Germany being the omitted category; and

E_{it} = a stochastic error term.

The year dummy and output gap results, from a weighted least squares regression with the sum of lagged employment as the weight, are as follows:

$(\sum_{k=1}^{3}$ Job losers$_{it-k}$ / $\sum_{k=1}^{3}$ Employment$_{it-k}$) = – 0.06(1988) – 0.10^{**}(1989) – 0.18^{**}(1990) – 0.16^{**}(1991) – 0.08^{*}(1992) + 0.11^{**}(1993) + 0.26^{**}(1994) + 0.14^{*}(1995) – 0.02^{**}(Output gap) + 0.13^{**}(Women) + age dummy variables + country dummy variables

Adjusted R^2 = 0.60, N = 1 897

where ** and * indicate significance at the 1 and 5 per cent level, respectively, using a two-tailed T-test.

28. Studies find that earnings losses, as well as the duration of post-displacement unemployment, are positively correlated with age but negatively correlated with education, and that women may experience longer spells of unemployment [Gray and Grenier (1997)]. Burchell (1996), however, uses British work history data to show that men are both more likely to move from secure to insecure jobs, and less likely to move from insecure to secure jobs.

ANNEX 5.A

Sources and definitions of data on enterprise tenure and estimates of job losers and job leavers

1. Data sources

Enterprise tenure statistics generally refer to the amount of time a worker has been continuously employed by the same employer. Sometimes the tenure question is: ''When did you start working with your present employer?''. Sometimes it is phrased: ''How long have you been working continuously for your present employer?''. Differences in the wording can result in different responses. Usually, tenure questions are asked in a household survey; the only exceptions, for this chapter, are Japan, where most of the data come from employer responses, and Finland, where most come from an administrative source. Unless otherwise noted, the data refer to wage and salary employment.

Australia

Unpublished data on tenure for 1984, 1986, 1991 and 1996 from a supplement to the monthly Labour Force Survey, conducted each February since 1975 by the Australian Bureau of Statistics. Industry data were supplied on the basis of the International Standard Industrial Classification ISIC (Rev. 2) and were regrouped into the Nomenclature générale des activités économiques dans les communautés européennes (NACE) as follows: Trade, restaurants and hotels combines wholesale and retail trade and hotels and restaurants. Finance, insurance, real estate and business services combine financial intermediation and real estate, renting and business activities. Community, social and personal services combine public administration and community, social and personal services. Data on occupations have been converted from the Australian Standard Classification of Occupations (ASCO) to International Standard Classification of Occupations [ISCO-88 (com)], with some re-grouping. Professionals and para-professionals is equivalent to professionals and technicians and associate professionals. Tradespersons, plant and machine operators, labourers and related workers is equivalent to the combined total of skilled agricultural and fishery workers, craft and related trades workers, plant and machine operators and assemblers and elementary occupations.

Estimates of job losers and job leavers are taken from issues of the Australian Bureau of Statistics, *The Labour Force, Australia*, Catalogue No. 6203.0. These estimates represent individuals who were currently unemployed, but had worked in full-time jobs for two weeks or more during the past two years. Job losers were laid off or retrenched from their job, left because of ill health or injury, left because the job was a temporary one, or, if self-employed, the business closed because of financial difficulties. Persons who were stood down (waiting to be recalled to a full- or part-time job) are excluded. Job leavers left their job because of unsatisfactory work arrangements, pay or hours, to return to studies or, if self-employed, they closed the business for other than financial reasons.

Canada

Unpublished annual average household data from the monthly Labour Force Survey for 1980, 1985, 1990 and 1995, as well as data from the *Labour Force Historial Review*, were provided by Statistics Canada. Canadian data, classified using the national Standard Industrial Classification (SIC), were regrouped into the NACE as follows: Agriculture and other primary industries are equivalent to the combination of agriculture, hunting, forestry and fishing, and mining and quarrying. Electric power, gas and water utilities is equivalent to electricity, gas and water supply. Transportation, pipelines, storage and warehousing and communication are equivalent to transport, storage and communication. Finance, insurance and real estate and business services are equivalent to financial intermediation and real estate, renting and business activities. Educational services, health and social services and other services are equivalent to community, social and personal services. Data on occupations using the national Occupational Classification Manual (1980) were regrouped into the ISCO-88 as follows: Medicine and health, other professionals and teaching and related are grouped as professionals and technicians and associate professionals. Construction trades and primary occupations correspond to the combined total of skilled agricultural and fisheries workers and elementary occupations. Processing, machining and fabricating and transport equipment operating are equivalent to plant and machine operators and assemblers. Material handling and other crafts is equivalent to craft and related trades workers.

Estimates of job losers and job leavers are based on individuals either currently unemployed or not in the labour force, and who had separated from their last job within the previous year. Unemployed job losers refers to dismissal for economic reasons or to the end of a seasonal or temporary job. Individuals temporarily laid-off are excluded. For those not in the labour force, job losers are as defined above, except that individuals temporarily laid off are included. Job leavers are individuals who left their job because of personal responsibilities, school or other

reasons. Individuals who left their job because of illness or who retired are not included.

Czech Republic

Data for 1995 are from the Czech Statistical Office, Labour Force Sample Survey.

European Union

Unpublished data from the European Community Labour Force Survey provided by EUROSTAT are used for tenure estimates for 1992-1995 for the following countries of the European Union: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal, Spain, Sweden and the United Kingdom. The month and year when each employed person began their current employment is recorded. They are assumed to have begun employment on the 15th day of the month. Tenure is then calculated in days, based on the difference between this and the survey reference week.

Unpublished data from the same survey are used to calculate the estimates of job losers and job leavers over the period 1983 to 1995. This is based on survey questions concerning individuals currently unemployed or not in the labour force who were previously employed. The sample was limited to those whose last job ended within the previous six months. For the period 1983-1991, job losers comprise: dismissals and redundancies, the end of a job of limited duration and early retirement for economic reasons. Job leavers consist of resignations, separations for personal reasons and separations for other reasons. Persons who have retired for other than economic or health reasons, those who left work for illness or incapacity, and individuals called up for compulsory military or community service are excluded. For the period 1992-1995, job losers comprise: dismissals and redundancies, the end of a job of limited duration and early retirement. Job leavers include separations for personal or family responsibilities, education or training and other reasons. Persons who left because of normal retirement, illness or disability and compulsory military or community service are excluded. The number of job losers and job leavers is divided by the average of the current and the previous period's level of employment.

Finland

Data are from the Register of the Central Pension Security Institute, published annually in the *Työeläkejärjestelmän tilastollinen vuosikirja*, Osa II (Statistical yearbook of the Employees' Pension Scheme, Part II). Data used are for 1980, 1985, 1990 and 1995. Data refer to persons covered by the private sector's main pension scheme, *i.e.* the Employees' Pensions Act (TEL). This scheme covers 85 per cent of all employees.

France

Unpublished household data from the annual Enquête sur l'Emploi conducted in March were provided by the Institut national de la statistique et des études économiques (INSEE) for 1982, 1985, 1990 and 1995.

Germany

Unpublished household data from the Socio-economic Panel, a representative longitudinal survey of the resident population, conducted by the Sonderforschungsbereich 3 of the Universities of Frankfurt and Mannheim and the Deutsches Institut für Wirtschaftsforschung in Berlin. Data used in this chapter refer to the former western Germany only. Data are for 1984, 1989 and 1994.

Japan

Tenure data are from *Chingin Kozo Kihon Tokei Chosa Hokoku* (Basic Survey on Wage Structure), Policy, Planning and Research Department, Ministry of Labour for 1980, 1985, 1990 and 1995. This is a yearly survey of private sector enterprises and public corporations under the National Enterprise Labour Relations Law or the Local Public Corporation Labour Relations Law. It includes establishments with ten or more regular employees and excludes agriculture, forestry and fisheries. Regular employees include persons hired for an indefinite period, as well as those hired for a fixed period longer than one month and temporary or daily workers hired for eighteen days or more in April and May. Industry data are classified using the national SIC which were regrouped into the NACE as follows: Mining is equivalent to mining and quarrying. Electricity, gas, heat supply and water is equivalent to electricity, gas and water supply. Wholesale and retail trade, eating and drinking places is equivalent to the combination of wholesale and retail trade and hotels and restaurants. Transport and communication is equivalent to transport, storage and communication. Finance and insurance is equivalent to financial intermediation. Real estate is equivalent to real estate, renting and business activities. Services is equivalent to community, social and personal services.

Job losers and job leavers are estimated using published data in the *Report on the Special Survey of the Labour Force Survey*, Statistics Bureau, Management and Co-ordination Agency, published in February of each year. Only unemployed individuals are included and no time limit is specified as to when the individual last held a job. Job losers are those who previously held a job and left it for one of the following reasons: personnel reduction, dissolution or bankruptcy of the company, business prospects were poor, and other reasons relating to the business or employer. Job leavers are those who left a job for one of the following reasons: to look for a more favourable job, to keep house, to attend school or for health reasons, for marriage or maternity or to take care of children and for other reasons. Excluded are retirements or departures due to old age.

Korea

Data in Table 5.6 are from the Ministry of Labour, *Yearbook of Labour Statistics* for 1995, while data in Table 5.5 are from the National Statistics Office, *Report on the Employment Structure Survey*, 1992, which is published quinquennially.

The Netherlands

Unpublished household data from the *Arbeidsaanbodspanel*, a longitudinal survey, provided for 1985, 1989, 1990 and 1994 by the Organisatie voor Strategisch Arbeidsmarktonderzoek (OSA).

Poland

Data are from the Labour Force Survey, which is conducted quarterly, for November 1995, and were provided by the Central Statistical Office.

Spain

Unpublished household data from the quarterly Labour Force Survey, provided for the second quarters of 1987, 1990, 1992 and 1995 by the Instituto Nacional de Estadistica (INE). Self-employment is included in the estimates for 1987 and 1992, but not in the estimates for 1990 and 1995.

Switzerland

Unpublished household data from the annual Swiss Labour Force Survey, provided for 1991, 1995 and 1996 by the Federal Statistical Office. Apprentices are excluded. Industry data based on the national classification were recoded to the NACE as follows: Crafts and trades/manufacturing is equivalent to manufacturing. Energy and water is equivalent to electricity, gas and water supply. Construction and civil engineering is equivalent to construction. Trade, restaurants/hotels and repair services are equivalent to the combination of wholesale and retail trade and hotels and restaurants. Banks, insurance and real estate, etc. is equivalent to the combination of financial intermediation and real estate, renting and business activities. The combination of other services and work in private households is equivalent to community, social and personal services.

United Kingdom

Unpublished household data from the annual (now quarterly)Labour Force Survey, conducted in the Spring, provided for 1985, 1990 and 1995 by the Office of National Statistics.

United States

Data on employer tenure are unpublished estimates derived from supplements to the Current Population Survey in January 1979, 1983, 1987, 1991 and 1996. United States data classified, using the national Standard Industrial Classification [SIC (1987)], were regrouped into the NACE as follows: Hotels and restaurants are included in both wholesale and retail trade, and community, social and personal services. Transportation, communications and other public utilities (which includes electricity, gas and water supply) is equivalent to electricity, gas and water supply, and transport, storage and communication. Finance, insurance and real estate, and business and repair activities are equivalent to the combined total of financial intermediation and real estate, renting and business activities. Personal services, private households, entertainment and recreation services, and professional and related services (including legal and engineering services) are equivalent to community, personal and social services. Data on occupations using the national Standard Occupational Classification [SOC (1980)] were regrouped into the ISCO-88 as follows. Technicians and related support is equivalent to technicians and associate professionals. Administrative support, including clerical, is equivalent to clerks. Sales occupations and service occupations is equivalent to service workers and shop and market sales workers. Farming, forestry and fishing is equivalent to skilled agricultural and fishery workers. Precision production, craft and repair is equivalent to craft and related trades workers. Machine operators, assemblers and inspectors and transportation and material moving occupations are equivalent to plant and machine operators and assemblers. Handlers, equipment cleaners, helpers and labourers is equivalent to elementary occupations.

Job losers and job leavers are based on annual averages from the Current Population Survey published in *Employment and Earnings* for persons currently unemployed who lost their jobs within the previous five years. The reasons for job loss are: discharged for cause (fired), plant permanently shut down, company moved, reduction in staff, job came to an end, forced to retire or temporary job ended. Workers laid off temporarily (who had been given a date to return) or indefinitely (who expect to return within six months) are excluded.

2. Calculations of average tenure and historical retention rates

Average current enterprise tenure for Canada, Korea (Table 5.6) and Japan was taken directly from the source alone. For other countries, it was calculated by using the mid-points of each closed tenure interval. For the tenure group of twenty years and over, a common mid-point of 27.5 years was used.

Historical retention rates are estimated for five-year periods: (1986-1991, 1991-1996) in Australia; (1985-1990, 1990-1995) in Canada, Finland, France, Japan and the United Kingdom; (1984-1989, 1989-1994) in Germany; (1987-1992, 1990-1995) in Spain; and (1991-1996) in Switzerland. In the United States, retention rates are cal-

culated over four-year intervals (1979-1983, 1983-1987, 1987-1991), as well as for one five-year interval (1991-1996).

The calculation of historical retention rates is straightforward. Imagine that a representative survey in 1990 finds that there are 100 people with employer tenure of less than 5 years. Five years later, a similar survey finds 52 people with employer tenure of five years or more but less than ten years. All of these latter must have had tenure of under five years in 1990. The five-year retention rate for workers with less than five years of tenure from 1990 to 1995 is then 52 per cent.

To facilitate the presentation of data in Tables 5.8 and 5.9, different tenure groups have been combined to create a wider retention rate figure. For example, assume that the survey found 60 people with tenure of five years or more but less than ten years in 1990, and 39 people with tenure of ten years or more but less than fifteen years in 1995. The retention rate for this group of workers is then 65 per cent. The retention rate for workers with less than *ten* years of tenure is simply a weighted average of the retention rate for the under-five year group and the five-to-ten year group, with the weights being given by their relative shares of employment for workers with less than ten years of tenure in 1990 (which, in the example above, was 160):

$$rr_{0-10} = (100/160)rr_{0-5} + (60/160)rr_{5-10} = 56.9\%.$$

Further tenure groups can be added analogously. If all of the tenure groups in the economy are considered together, the result is the overall retention rate (*i.e.* for all workers in the economy), as presented in the first three rows of Table 5.8. Overall retention rates can be calculated in the same way by gender, education, and any other demographic characteristic for which information is available. Retention rates in this chapter refer to workers who were no older than 65 at the time of the second survey.

One potential difficulty which affects the calculation of some retention rates, and in particular the five-year retention rates computed in this chapter, is that of "data heaping". This arises from the tendency of individuals being surveyed to report round numbers when recalling events, such as the length of time spent with their current employer. Thus, there is a tendency to find reported tenure durations clustered around quinquennial points. A number of methods have been proposed to adjust the data to compensate for this [Ureta (1992); Swinnerton and Wial (1995)]. This issue remains the subject of considerable debate as to the best method to smooth the data and is beyond the scope of the present chapter.

3. Econometric analysis of employer tenure

Comparisons of average tenure across countries may be influenced by cross-country differences in the demographic or occupational structure and other factors. Multivariate analysis can take these effects into account and give a more accurate picture of differences in average tenure across countries.

Data on average tenure is available for each country for four years (1992-1995), by gender and by ten five-year age groups. The number of occupation groups varies. Four common occupation groups have been created, with the other groups representing the omitted categories. Data is available for sixteen countries, yielding a total of 8 956 observations.

The estimated equation for average tenure in country i at time t is:

$$\text{Average tenure}_{it} = \alpha_i + \beta_1 \text{Gender}_{it} + \beta_2 \text{Age}_{it} + \beta_3 \text{Country}_i + \beta_4 \text{Occupation}_{it} + \beta_5 \text{Year}_t + E_{it}$$

where:

Gender_{it} = a (1,0) gender dummy;

Age_{it} = a vector of nine (1,0) age dummy variables covering ages 15 to 64 years in five-year bands;

Occupation_{it} = a vector of four (1,0) occupation dummy variables;

Country_i = a vector of fifteen (1,0) country dummy variables;

Year_t = a vector of three (1,0) year dummy variables; and

E_{it} = a stochastic error term.

The econometric method employed is weighted least squares, using employment as the weight. The adjusted R-squared and many of the T statistics are unusually high, which reflects the use of grouped average data. Because of grouping, much of the variability in the dependent variable is lost. Each observation is, in fact, a unique combination of the independent variables. As a consequence, most of the variation in the dependent variable is across groups (explained by the regression equation), while within-group variation (unexplained variation) is relatively low.

Results are presented in Table 5.A.1. Individual coefficients are interpreted as follows: Women have on average tenure which is 1.5 years shorter than men. As expected, average tenure rises with age. There is no significant difference in average tenure across the four years. For occupation, legislators, senior officials and managers have somewhat longer tenure than professionals and technicians and associate professionals (the omitted category). Clerks have the same tenure as this group, service workers and shop and market sales workers have tenure which is on average 1.6 years shorter and blue-collar workers have tenure which is on average 1.1 years shorter.

Estimates of differences in average tenure across countries are with reference to Germany, which has tenure close to the average of European countries. The longest average tenure is in Italy, followed by Belgium, Portugal and France, while Austria, Greece, Ireland and Luxembourg all have average tenure similar to that of Germany. Tenure is shorter in the Netherlands, Spain, Canada, Denmark and the United Kingdom, and is shortest in the United States and Australia. A separate regression including Finland, Japan and Sweden, for which data on occupations are not available, indicates that Japan has the third longest tenure, while tenure in Finland and Sweden is not significantly different from that in Germany.

Table 5.A.1. **Econometric estimates of average tenure**

	Average tenure (years)	
Women	–1.54**	(0.028)
(Comparison group men)		
15-19 years	–8.70**	(0.248)
20-24 years	–5.68**	(0.047)
25-29 years	–4.44**	(0.047)
30-34 years	–3.12**	(0.047)
35-39 years	–1.64**	(0.047)
45-49 years	1.67**	(0.048)
50-54 years	3.16**	(0.054)
55-59 years	4.17**	(0.065)
60-64 years	5.93**	(0.087)
(Comparison group 40-44 years)		
Australia[a]	–3.00**	(0.134)
Austria[b]	0.81	(0.597)
Belgium	1.18**	(0.353)
Canada[b]	–1.53**	(0.321)
Denmark	–1.52**	(0.351)
France	0.59**	(0.154)
Greece	–0.23	(0.377)
Ireland	–0.34	(0.551)
Italy	1.51**	(0.172)
Luxembourg	0.28	(1.370)
Netherlands	–0.72**	(0.236)
Portugal	0.86**	(0.301)
Spain	–0.83**	(0.198)
United Kingdom	–2.04**	(0.147)
United States[a]	–2.82**	(0.616)
(Comparison with Germany)		
Legislators, senior officials and managers	0.59**	(0.050)
Clerks	–0.020	(0.039)
Service and shop and market sales workers	–1.65**	(0.041)
Blue-collar workers[c]	–1.13**	(0.034)
(Comparison group professionals and technicians and associate professionals)		
1992	0.038	(0.142)
1993	0.070	(0.141)
1994	0.048	(0.141)
(Comparison with 1995)		
Constant	12.45**	(0.139)
Adjusted R^2	0.91	
N	8 956	

** and * indicate significance at the 1 per cent and 5 per cent levels, respectively, using a two-tailed T test. Standard errors are in parentheses.
a) 1996 only, treated as 1995.
b) 1995 only.
c) Comprises skilled agricultural and fishery workers, craft and related trades, plant and machine operators and assemblers and elementary occupations.
Source: See Table 5.5.

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Statistical Annex

Sources and definitions

An important source for the statistics in these tables is Part III of OECD, *Labour Force Statistics, 1975-1995.*

The data on employment, unemployment and the labour force are not always the same as the series used for policy analysis and forecasting by the OECD Economics Department, reproduced in Tables 1.2 and 1.3.

Conventional signs

.. Data not available
. Decimal point
| Break in series
– Nil or less than half of the last digit used

Note on statistical treatment of Germany

In this publication, data up to end-1990 are for western Germany only; unless otherwise indicated, they are for the whole of Germany from 1991 onwards. In tables showing percentage changes from the previous year, data refer to the whole of Germany from 1992 onwards.

Table A. **Standardized unemployment rates in 21 OECD countries**

Per cent of total labour force

	1983	1990	1992	1993	1994	1995	1996
North America	**9.8**	**5.9**	**7.9**	**7.4**	**6.5**	**6.0**	**5.8**
Canada	11.9	8.1	11.3	11.2	10.4	9.5	9.7
United States	9.6	5.6	7.5	6.9	6.1	5.6	5.4
Japan	**2.7**	**2.1**	**2.2**	**2.5**	**2.9**	**3.1**	**3.4**
Central and Western Europe	**9.2**	**6.8**	**7.9**	**9.3**	**9.5**	**8.8**	**9.6**
Austria	..	..	..	..	..	3.9	4.4
Belgium	11.1	6.7	7.3	8.9	10.0	9.9	9.8
France	8.1	9.0	10.4	11.7	12.3	11.7	12.4
Germany[a]	7.7	4.8	4.6	7.9	8.4	8.2	9.0
Ireland	14.0	13.4	15.4	15.6	14.3	12.4	12.3
Luxembourg	3.5	1.7	2.1	2.7	3.2	2.9	3.1
Netherlands	9.7	6.2	5.6	6.6	7.1	6.9	6.3
Switzerland	..	..	3.0	3.8	3.6	3.3	3.5
United Kingdom	11.1	7.1	10.1	10.5	9.6	8.8	8.2
Southern Europe	**11.0**	**10.7**	**11.8**	**14.3**	**15.5**	**15.4**	**15.2**
Italy	7.7	9.1	9.0	10.3	11.4	11.9	12.0
Portugal	7.8	4.6	4.2	5.7	7.0	7.3	7.3
Spain	17.5	16.2	18.5	22.8	24.1	22.9	22.2
Nordic countries	**4.2**	**4.2**	**8.2**	**10.7**	**10.3**	**9.5**	**9.3**
Denmark	..	7.7	9.2	10.1	8.2	7.1	6.0
Finland	5.4	3.5	13.0	17.6	17.9	16.6	15.7
Norway	3.5	5.3	6.0	6.1	5.5	5.0	4.9
Sweden	3.9	1.8	5.9	9.5	9.8	9.2	10.0
Oceania	**..**	**7.1**	**10.7**	**10.8**	**9.5**	**8.2**	**8.2**
Australia	9.9	7.0	10.8	11.0	9.8	8.6	8.6
New Zealand	..	7.8	10.3	9.5	8.1	6.3	6.1
Total of above countries	**8.4**	**6.1**	**7.4**	**8.0**	**7.9**	**7.5**	**7.6**

a) Up to and including 1992, western Germany; subsequent data concern the whole of Germany.

Note: In so far as possible, the data have been adjusted to ensure comparability over time and to conform to the guidelines of the International Labour Office. All series are benchmarked to labour-force-survey-based estimates. In countries with annual surveys, monthly estimates are obtained by interpolation/extrapolation and by incorporating trends in administrative data, where available. The annual figures are then calculated by averaging the monthly estimates (for both unemployed and the labour force). For countries with monthly or quarterly surveys, the annual estimates are obtained by averaging the monthly or quarterly estimates, respectively. For several countries, the adjustment procedure used is similar to that of the Bureau of Labor Statistics, US Department of Labor. For EU countries, the procedures are similar to those used in deriving the Comparable Unemployment Rates (CURs) of the Statistical Office of the European Communities. Minor differences may appear mainly because of various methods of calculating and applying adjustment factors, and because EU estimates are based on the civilian labour force.

Source: OECD, *Quarterly Labour Force Statistics,* No. 1, 1997.

Table B. **Employment/population ratios, labour force participation and unemployment rates**

Both sexes

Percentages

	Employment/population ratio[a]						Labour force participation rate[a]						Unemployment rate					
	1983	1990	1993	1994	1995	1996	1983	1990	1993	1994	1995	1996	1983	1990	1993	1994	1995	1996
Australia	62.1	68.7	65.0	66.6	68.5	68.3	68.8	73.8	72.8	73.3	74.5	74.7	9.7	7.0	10.7	9.2	8.1	8.5
Austria	62.9	65.5	66.3	69.2	69.2	68.1	65.6	67.7	69.2	71.7	72.4	71.9	4.1	3.2	4.3	3.6	4.3	5.3
Belgium	53.5	54.7	56.3	56.0	56.6	56.6	60.5	59.0	61.2	62.0	62.4	62.5	11.7	7.2	8.1	9.6	9.3	9.5
Canada	64.8	71.5	67.7	68.2	68.5	68.5	73.6	77.9	76.3	76.1	75.7	75.9	11.9	8.1	11.2	10.4	9.5	9.7
Czech Republic	..	..	72.4	72.6	70.6	70.4	..	..	75.3	75.5	73.6	73.2	..	..	3.9	3.8	4.1	3.9
Denmark	71.8	77.1	73.8	72.9	74.5	74.7	79.6	84.1	82.7	79.3	80.1	80.1	9.7	8.3	10.7	8.0	7.0	6.8
Finland	73.2	74.2	61.0	60.1	61.4	62.2	77.4	76.8	74.0	73.5	74.0	74.1	5.4	3.4	17.6	18.2	17.0	16.1
France	62.0	60.4	59.5	58.7	59.4	59.6	67.4	66.5	67.0	67.0	67.2	67.8	8.0	9.2	11.1	12.4	11.6	12.1
Germany	62.2	64.8	65.8	65.4	64.9	64.0	67.5	69.1	71.4	71.3	70.7	70.3	7.9	6.2	7.9	8.4	8.1	9.0
Greece	57.5	56.5	55.2	55.9	56.4	..	62.4	60.8	60.9	61.4	62.0	..	7.8	7.0	9.4	8.9	9.1	..
Hungary	..	..	49.3	48.2	53.4	53.4	..	..	56.0	54.0	59.4	59.2	..	..	11.9	10.7	10.2	9.8
Iceland[b]	..	84.6	82.5	82.8	84.9	84.8	..	86.8	87.1	87.4	89.2	88.1	..	2.6	5.3	5.3	4.8	3.7
Ireland	54.0	53.9	52.5	53.7	55.3	56.2	62.8	61.9	62.3	62.9	62.9	63.8	14.0	13.0	15.7	14.7	12.2	11.9
Italy	55.0	54.9	52.7	51.7	51.2	51.3	60.1	60.8	58.8	58.3	58.1	58.5	8.6	9.8	10.3	11.3	11.8	12.2
Japan	71.0	72.7	74.2	74.2	74.2	74.6	73.0	74.3	76.1	76.4	76.6	77.3	2.7	2.1	2.5	2.9	3.2	3.4
Korea	..	63.4	64.7	65.8	66.4	66.5	..	65.0	66.5	67.4	67.8	67.9	..	2.5	2.8	2.4	2.0	2.0
Luxembourg	59.3	59.5	61.3	60.6	58.9	59.4	61.3	60.5	62.7	62.7	60.6	61.5	3.3	1.6	2.3	3.5	2.9	3.3
Mexico	..	..	62.2	61.4	60.8	62.0	..	..	64.2	64.2	64.4	64.5	..	..	3.2	4.2	5.7	3.8
Netherlands	52.0	61.7	64.1	64.3	64.8	66.0	59.0	66.8	68.4	69.3	69.8	70.5	11.9	7.7	6.3	7.2	7.2	6.4
New Zealand	61.6	68.3	66.8	68.8	70.9	72.2	65.3	74.1	73.9	74.9	75.7	76.9	5.6	7.8	9.5	8.2	6.3	6.1
Norway	77.3	76.5	73.8	73.9	75.0	76.8	79.3	79.8	77.8	78.2	78.9	80.8	2.5	4.2	5.0	5.4	4.9	4.9
Poland	..	..	63.5	58.2	58.1	58.8	..	..	73.5	68.4	67.4	67.0	..	..	13.6	14.9	13.7	12.2
Portugal	69.7	70.7	67.7	67.0	66.3	67.2	75.7	74.3	71.7	72.1	71.6	72.6	8.0	4.8	5.6	7.0	7.4	7.5
Spain	49.5	50.7	46.7	47.0	47.2	48.1	59.6	60.6	60.5	61.8	61.3	61.8	17.0	16.3	22.8	23.9	22.9	22.2
Sweden	80.2	84.4	73.9	72.8	73.5	72.7	83.0	85.8	80.4	79.0	79.5	79.0	3.5	1.6	8.1	7.8	7.6	8.0
Switzerland	..	..	78.5	77.3	77.9	76.1	..	..	81.6	80.5	80.7	79.1	..	..	3.9	3.9	3.4	3.8
Turkey	..	56.1	53.6	53.6	54.8	54.6	..	61.0	58.1	58.4	58.9	58.1	..	8.0	7.7	8.1	6.9	6.1
United Kingdom[c]	67.0	73.7	69.5	69.9	70.5	71.0	75.9	79.1	77.5	77.4	77.2	77.3	11.8	6.8	10.3	9.6	8.6	8.2
United States	68.0	74.3	73.2	74.2	74.7	75.0	75.2	78.7	78.7	79.0	79.2	79.3	9.6	5.6	6.9	6.1	5.6	5.4
North America[d]	67.7	74.0	70.4	70.9	71.1	71.6	75.0	78.6	75.4	75.6	75.6	75.7	9.8	5.9	6.6	6.1	5.9	5.4
European Union[d]	59.2	60.4	59.4	59.0	59.1	59.1	65.2	66.0	66.4	66.5	66.4	66.8	9.2	8.5	10.6	11.4	11.1	11.5
OECD Europe[d]	60.6	61.9	60.6	60.0	60.3	60.4	67.1	67.3	67.5	67.2	67.2	67.2	9.6	8.1	10.3	10.7	10.2	10.1
Total OECD[d]	64.8	67.5	65.9	65.9	66.2	66.5	70.8	71.9	71.3	71.3	71.4	71.6	8.5	6.1	7.6	7.6	7.3	7.1

a) Defined as total employment divided by the working age population (15-64).
b) 1990 refers to 1991.
c) 1983 refers to 1984.
d) Above countries only.
Source: OECD, *Labour Force Statistics, 1975-1995,* Part III completed by Part II, forthcoming.

Table B. **Employment/population ratios, labour force participation and unemployment rates** *(cont.)*

Men

Percentages

	Employment/population ratio[a]						Labour force participation rate[a]						Unemployment rate					
	1983	1990	1993	1994	1995	1996	1983	1990	1993	1994	1995	1996	1983	1990	1993	1994	1995	1996
Australia	77.3	79.7	74.3	76.2	77.5	77.3	85.5	85.6	83.9	84.1	84.7	84.8	9.6	6.9	11.4	9.4	8.5	8.9
Austria	79.4	77.7	76.3	78.5	78.5	76.9	82.2	80.1	79.5	81.2	81.8	81.3	3.5	3.0	4.1	3.3	3.9	5.3
Belgium	70.4	68.4	67.3	66.9	67.4	67.3	76.6	71.7	71.8	72.5	72.7	72.7	8.1	4.6	6.2	7.7	7.3	7.4
Canada	75.5	79.4	73.9	74.7	74.9	74.8	86.0	86.5	83.8	83.7	83.0	83.1	12.2	8.1	11.8	10.8	9.8	9.9
Czech Republic	..	..	78.1	78.2	78.9	79.4	..	..	80.7	80.9	81.7	82.1	..	..	3.3	3.3	3.5	3.3
Denmark	78.4	82.5	77.9	78.4	81.7	81.4	86.3	89.6	86.9	84.5	86.5	86.2	9.2	7.8	10.4	7.2	5.6	5.5
Finland	77.4	77.6	62.7	62.0	64.1	65.4	81.9	80.7	77.8	77.1	77.5	77.6	5.6	3.9	19.4	19.5	17.3	15.8
France	74.4	70.4	67.7	66.5	67.1	67.2	79.3	75.6	74.7	74.5	74.4	75.0	6.2	7.0	9.4	10.8	9.8	10.4
Germany	76.6	76.4	75.7	75.0	74.5	73.4	82.6	80.8	81.0	80.9	80.1	79.9	7.3	5.4	6.6	7.2	7.0	8.1
Greece	80.9	75.8	74.2	75.0	75.1	..	85.9	79.2	79.0	79.7	80.0	..	5.8	4.3	6.1	6.0	6.2	..
Hungary	..	..	55.6	55.1	60.7	60.6	..	..	64.0	62.4	68.5	67.9	..	..	13.2	11.8	11.3	10.7
Iceland[b]	..	90.9	87.4	86.9	89.6	89.3	..	92.9	91.9	91.6	94.1	92.5	..	2.2	4.9	5.2	4.8	3.4
Ireland	73.9	70.3	66.1	66.8	68.6	68.8	87.2	80.4	78.4	78.3	78.1	78.1	15.3	12.5	15.6	14.7	12.1	11.9
Italy	76.6	73.4	69.4	67.7	66.8	66.4	81.1	78.5	75.2	74.3	73.5	73.5	5.6	6.4	7.8	8.8	9.2	9.6
Japan	86.6	86.3	88.1	88.0	88.1	88.5	89.0	88.1	90.3	90.6	90.9	91.6	2.7	2.0	2.4	2.8	3.1	3.4
Korea	..	76.3	78.6	79.5	80.1	79.7	..	78.6	81.1	81.8	82.0	81.6	..	2.9	3.2	2.8	2.3	2.3
Luxembourg	79.5	76.9	77.0	75.3	74.7	74.8	81.4	77.9	78.4	77.6	76.3	76.7	2.3	1.2	1.9	3.0	2.1	2.5
Mexico	..	..	88.8	87.1	85.6	87.4	..	..	91.5	90.7	90.5	90.6	..	..	2.9	4.0	5.5	3.6
Netherlands	69.1	76.2	76.0	75.3	75.8	76.6	77.5	80.7	80.2	80.6	80.7	80.9	10.9	5.6	5.3	6.5	6.1	5.2
New Zealand	80.3	77.6	75.5	77.4	79.9	80.6	84.7	84.4	83.9	84.6	85.3	85.8	5.2	8.2	10.0	8.5	6.2	6.1
Norway	88.2	82.9	78.7	78.8	79.9	81.9	90.3	86.8	83.4	83.8	84.2	86.1	2.3	4.5	5.7	5.9	5.1	4.8
Poland	..	..	65.9	64.8	64.7	..	..	..	75.7	75.0	73.9	..	..	..	13.0	13.5	12.5	..
Portugal	88.1	83.8	78.5	77.2	75.9	76.1	92.6	86.7	82.4	82.3	81.3	81.5	4.8	3.3	4.8	6.2	6.6	6.6
Spain	71.7	69.8	61.9	62.8	62.3	63.0	85.0	79.3	76.4	78.0	76.1	76.4	15.6	12.0	19.0	19.5	18.2	17.6
Sweden	84.7	86.9	74.9	74.2	75.3	74.7	87.7	88.4	82.8	81.4	82.1	81.6	3.4	1.7	9.5	8.9	8.3	8.4
Switzerland	..	..	88.2	86.3	87.3	86.1	..	..	91.0	89.6	89.9	89.2	..	..	3.1	3.6	2.9	3.5
Turkey	..	79.3	76.1	76.4	77.7	77.6	..	86.1	82.7	83.3	83.7	82.9	..	7.8	7.9	8.3	7.1	6.4
United Kingdom[c]	78.7	83.7	76.2	76.8	77.7	77.7	89.5	90.0	87.0	86.7	86.3	86.1	12.0	7.0	12.4	11.4	10.1	9.7
United States	78.9	83.1	81.1	81.6	82.1	82.3	87.6	88.1	87.3	87.0	87.0	87.0	9.9	5.7	7.2	6.2	5.6	5.4
North America[d]	78.6	82.7	82.1	82.2	82.3	82.8	87.4	87.9	87.9	87.5	87.4	87.4	10.2	5.9	6.6	6.1	5.9	5.3
European Union[d]	75.8	74.2	70.9	70.3	70.2	69.8	82.2	79.3	77.9	77.9	77.4	77.3	7.8	6.5	9.0	9.7	9.3	9.8
OECD Europe[d]	76.4	76.2	71.8	71.5	71.8	71.6	83.5	81.7	79.3	79.2	79.0	78.8	8.4	6.7	9.4	9.8	9.1	9.1
Total OECD[d]	78.7	79.8	77.7	77.6	77.9	78.0	85.6	84.5	83.8	83.6	83.6	83.6	8.0	5.6	7.2	7.2	6.8	6.7

a) Defined as total employment divided by the working age population (15-64).
b) 1990 refers to 1991.
c) 1983 refers to 1984.
d) Above countries only.
Source: OECD, *Labour Force Statistics, 1975-1995,* Part III completed by Part II, forthcoming.

Table B. **Employment/population ratios, labour force participation and unemployment rates** *(cont.)*

Women

Percentages

	Employment/population ratio[a]						Labour force participation rate[a]						Unemployment rate					
	1983	1990	1993	1994	1995	1996	1983	1990	1993	1994	1995	1996	1983	1990	1993	1994	1995	1996
Australia	46.7	57.5	55.5	56.9	59.4	59.3	51.9	61.9	61.6	62.4	64.3	64.4	9.9	7.1	9.8	8.8	7.5	8.0
Austria	47.1	53.5	56.0	59.6	59.9	59.2	49.7	55.4	58.7	62.1	63.0	62.4	5.1	3.5	4.5	4.0	4.9	5.2
Belgium	36.6	41.0	45.1	45.0	45.7	45.8	44.5	46.3	50.6	51.4	52.0	52.3	17.8	11.4	10.8	12.4	12.2	12.4
Canada	54.2	63.6	61.4	61.7	62.1	62.2	61.3	69.2	68.7	68.5	68.4	68.7	11.6	8.1	10.6	9.9	9.2	9.4
Czech Republic	..	..	66.7	67.0	62.4	61.4	..	..	70.0	70.1	65.5	64.4	..	..	4.7	4.4	4.8	4.6
Denmark	65.2	71.5	69.7	67.4	67.2	67.8	72.8	78.6	78.4	74.1	73.6	74.0	10.4	8.9	11.1	9.0	8.6	8.4
Finland	69.0	70.8	59.2	58.2	58.6	58.9	72.9	72.9	70.2	69.9	70.4	70.6	5.3	2.8	15.6	16.7	16.7	16.5
France	49.7	50.6	51.4	51.0	51.8	52.1	55.6	57.6	59.3	59.6	60.1	60.7	10.6	12.0	13.3	14.3	13.9	14.2
Germany	47.8	52.8	55.6	55.4	55.1	54.3	52.5	57.0	61.5	61.5	61.0	60.4	8.8	7.4	9.6	9.9	9.7	10.2
Greece	36.1	38.5	37.4	38.2	39.0	..	40.8	43.6	44.0	44.2	45.3	..	11.7	11.7	15.0	13.7	13.8	..
Hungary	..	..	43.5	41.9	46.3	46.4	..	..	48.5	46.3	50.7	50.9	..	..	10.4	9.4	8.7	8.7
Iceland[b]	..	78.1	77.7	78.4	80.3	79.9	..	80.5	82.4	83.0	84.5	83.3	..	3.0	5.7	5.6	4.9	4.1
Ireland	33.6	37.3	38.7	40.4	41.8	43.5	37.8	43.3	46.0	47.4	47.6	49.4	11.1	13.8	15.8	14.7	12.2	11.9
Italy	34.4	36.9	36.5	36.0	36.0	36.5	40.1	43.8	42.8	42.7	42.9	43.7	14.3	15.7	14.7	15.6	16.2	16.5
Japan	55.7	59.1	60.2	60.3	60.3	60.7	57.2	60.4	61.9	62.1	62.3	62.8	2.6	2.2	2.7	3.0	3.3	3.4
Korea	..	50.9	51.2	52.4	53.0	53.6	..	51.8	52.4	53.4	53.9	54.4	..	1.8	2.2	1.9	1.7	1.6
Luxembourg	38.9	41.7	45.0	45.4	42.5	43.8	41.1	42.8	46.4	47.4	44.4	45.9	5.2	2.5	3.1	4.3	4.4	4.7
Mexico	..	..	37.3	37.5	37.7	38.8	..	..	38.8	39.4	40.1	40.5	..	..	4.0	4.8	6.0	4.2
Netherlands	34.7	47.0	51.9	53.0	53.4	55.0	40.2	52.7	56.2	57.7	58.5	59.8	13.7	10.9	7.7	8.1	8.7	8.1
New Zealand	42.8	59.2	58.3	60.3	62.1	63.8	45.7	63.8	64.0	65.3	66.3	68.0	6.4	7.2	8.9	7.7	6.3	6.1
Norway	70.1	71.6	66.0	69.8	68.9	68.9	73.5	75.3	67.9	72.6	71.9	72.3	2.8	3.9	4.2	4.8	4.6	4.9
Poland	..	..	52.1	51.8	51.7	..	..	..	62.1	62.1	61.0	..	..	..	16.2	16.5	15.2	..
Portugal	52.3	58.2	57.4	57.3	57.2	58.7	59.8	62.5	61.5	62.3	62.4	64.1	12.6	6.9	6.7	8.0	8.3	8.5
Spain	27.6	32.0	31.4	31.4	32.4	33.4	34.7	42.2	44.5	45.8	46.6	47.4	20.5	24.2	29.4	31.4	30.6	29.6
Sweden	75.5	81.8	72.9	71.3	71.6	70.6	78.3	83.2	78.0	76.4	76.9	76.3	3.6	1.6	6.6	6.7	6.8	7.4
Switzerland	..	..	68.3	67.6	68.0	66.0	..	..	71.7	70.9	70.9	68.9	..	..	4.8	4.6	4.1	4.3
Turkey	..	33.6	31.7	31.3	32.5	32.1	..	36.7	34.2	34.0	34.8	33.9	..	8.5	7.2	7.7	6.5	5.3
United Kingdom[c]	55.3	63.7	62.8	63.0	63.3	64.1	62.5	68.1	67.9	68.0	67.9	68.4	11.5	6.5	7.6	7.3	6.8	6.3
United States	57.7	65.8	65.7	67.1	67.6	68.1	63.5	69.7	70.3	71.4	71.6	72.0	9.2	5.5	6.6	6.0	5.6	5.4
North America[d]	57.3	65.6	59.1	60.1	60.4	60.9	63.3	69.6	63.3	64.1	64.3	64.5	9.4	5.8	6.6	6.2	6.0	5.6
European Union[d]	42.9	46.7	47.8	47.6	47.9	48.4	48.5	52.8	54.9	55.2	55.4	56.1	11.5	11.5	13.0	13.7	13.6	13.8
OECD Europe[d]	45.1	47.6	48.8	48.6	48.9	49.2	50.9	53.1	55.1	55.2	55.4	55.7	11.4	10.3	11.6	12.0	11.7	11.5
Total OECD[d]	51.3	55.4	54.0	54.3	54.7	55.1	56.4	59.5	58.8	59.2	59.4	59.8	9.1	6.9	8.2	8.2	8.0	7.7

a) Defined as total employment divided by the working age population (15-64).
b) 1990 refers to 1991.
c) 1983 refers to 1984.
d) Above countries only.
Source: OECD, *Labour Force Statistics, 1975-1995,* Part III completed by Part II, forthcoming.

Table C. **Unemployment, labour force participation rates and employment/population ratios by age**

Both sexes

Percentages

		1983			1990			1994			1995			1996		
		15 to 24	25 to 54	55 to 64	15 to 24	25 to 54	55 to 64	15 to 24	25 to 54	55 to 64	15 to 24	25 to 54	55 to 64	15 to 24	25 to 54	55 to 64
Australia[a]	Unemployment rates	17.9	7.3	3.5	13.2	5.1	5.6	16.3	7.2	8.8	14.4	6.4	7.6	14.8	6.8	8.0
	Labour force participation rates	69.1	74.0	40.9	70.4	79.9	44.1	68.4	79.4	43.7	69.7	80.4	44.9	70.3	80.1	45.9
	Employment/population ratios	56.7	68.5	39.5	61.1	75.8	41.7	57.3	73.6	39.9	59.7	75.3	41.5	59.9	74.7	42.3
Austria	Unemployment rates	..	..	..	..	..	..	4.8	3.4	3.5	5.9	4.1	3.9	6.9	5.1	4.6
	Labour force participation rates	..	..	..	..	..	..	62.5	82.2	29.5	61.7	83.3	30.2	59.6	83.5	30.8
	Employment/population ratios	..	..	..	..	..	..	59.5	79.5	28.4	58.1	79.9	29.0	55.5	79.3	29.4
Belgium	Unemployment rates	23.9	9.5	5.4	14.5	6.5	3.5	21.8	8.4	4.9	21.5	8.3	4.0	20.5	8.6	4.5
	Labour force participation rates	43.9	74.4	30.6	35.5	76.7	22.2	35.2	79.9	23.5	33.9	80.4	24.2	32.8	80.8	22.8
	Employment/population ratios	33.4	67.3	29.0	30.4	71.7	21.4	27.5	73.1	22.4	26.6	73.8	23.3	26.1	73.9	21.8
Canada	Unemployment rates	19.7	9.8	8.1	12.7	7.3	6.0	16.5	9.3	9.0	15.6	8.4	8.2	16.1	8.6	7.7
	Labour force participation rates	66.7	79.7	52.1	69.2	84.5	50.0	62.9	83.6	48.7	62.2	83.4	47.4	61.5	83.7	47.9
	Employment/population ratios	53.6	71.9	47.9	60.4	78.4	47.0	52.5	75.8	44.3	52.5	76.4	43.6	51.6	76.5	44.2
Czech Republic	Unemployment rates	..	..	..	..	..	..	7.7	3.0	3.0	7.9	3.3	3.0	7.1	3.2	3.5
	Labour force participation rates	..	..	..	..	..	..	54.0	91.8	33.1	50.6	89.6	35.6	49.5	88.7	38.5
	Employment/population ratios	..	..	..	..	..	..	49.9	89.1	32.1	46.6	86.6	34.5	45.9	85.9	37.1
Denmark	Unemployment rates	18.9	8.0	6.2	11.5	7.9	6.1	10.2	7.8	6.5	9.9	6.2	8.0	10.6	6.0	6.1
	Labour force participation rates	65.3	89.2	54.0	73.5	91.2	57.1	69.1	87.2	53.7	73.2	87.1	53.6	73.8	87.5	50.6
	Employment/population ratios	52.9	82.0	50.6	65.0	84.0	53.6	62.1	80.5	50.2	65.9	81.7	49.3	66.0	82.2	47.5
Finland	Unemployment rates	10.5	4.3	6.1	6.4	2.9	3.3	30.9	16.0	23.3	27.2	14.9	24.1	24.7	13.9	25.0
	Labour force participation rates	57.1	89.7	50.4	58.1	89.5	42.4	44.6	87.8	42.9	44.9	88.2	44.4	44.6	88.1	46.4
	Employment/population ratios	51.1	85.9	47.3	54.4	86.9	41.0	30.9	73.8	32.9	32.7	75.1	33.7	33.6	75.8	34.8
France	Unemployment rates	19.7	5.7	6.3	19.1	8.0	6.7	27.5	11.2	7.0	25.9	10.5	7.2	26.3	11.0	8.6
	Labour force participation rates	45.7	81.6	42.6	36.4	84.1	38.1	30.7	85.9	35.9	29.8	86.0	36.1	29.2	86.4	36.6
	Employment/population ratios	36.7	76.9	39.9	29.5	77.4	35.6	22.3	76.2	33.4	22.0	77.0	33.5	21.5	76.9	33.5
Germany	Unemployment rates	11.0	6.9	8.9	5.6	5.7	11.6	8.2	8.0	11.6	8.0	7.8	11.3	8.0	8.0	17.9
	Labour force participation rates	58.0	76.7	41.8	59.8	78.0	41.6	56.2	83.2	40.7	55.7	82.5	40.3	..	..	..
	Employment/population ratios	51.6	71.4	38.1	56.4	73.6	36.8	51.6	76.5	36.0	51.2	76.1	35.7	..	..	..
Greece	Unemployment rates	23.1	6.1	2.6	23.3	5.1	1.6	27.7	7.0	3.1	27.9	7.3	3.4	..	..	..
	Labour force participation rates	42.7	68.7	47.5	39.4	72.2	41.5	36.9	73.7	40.7	36.7	74.2	41.9	..	..	..
	Employment/population ratios	32.9	64.5	46.3	30.3	68.5	40.8	26.7	68.6	39.5	26.5	68.8	40.5	..	..	..
Hungary	Unemployment rates	..	..	..	..	..	..	..	..	..	18.6	8.9	5.4	18.0	8.7	5.1
	Labour force participation rates	..	..	..	..	..	..	..	..	..	38.4	77.6	18.1	37.1	77.1	20.4
	Employment/population ratios	..	..	..	..	..	..	..	..	..	31.3	70.7	17.1	30.4	70.4	19.4
Iceland[b]	Unemployment rates	..	..	..	5.0	2.2	2.2	11.6	4.1	3.9	11.0	3.6	3.9	8.4	2.5	4.0
	Labour force participation rates	..	..	..	59.7	90.3	86.9	58.3	91.2	88.1	61.8	92.4	88.6	59.9	91.7	87.0
	Employment/population ratios	..	..	..	56.7	88.3	85.0	51.5	87.5	84.7	55.0	89.1	85.1	54.9	89.3	83.5

Table C. **Unemployment, labour force participation rates and employment/population ratios by age** *(cont.)*

Both sexes

Percentages

		1983			1990			1994			1995			1996		
		15 to 24	25 to 54	55 to 64	15 to 24	25 to 54	55 to 64	15 to 24	25 to 54	55 to 64	15 to 24	25 to 54	55 to 64	15 to 24	25 to 54	55 to 64
Ireland	Unemployment rates	20.1	12.5	10.2	17.6	12.4	8.4	23.3	13.3	8.5	19.1	11.1	7.8	18.2	11.0	6.8
	Labour force participation rates	58.6	64.7	48.4	50.4	68.7	42.2	45.4	72.6	43.0	45.5	72.6	42.5	43.9	74.5	43.2
	Employment/population ratios	46.9	56.6	43.5	41.5	60.2	38.6	34.8	62.9	39.4	36.8	64.5	39.2	35.9	66.3	40.3
Italy	Unemployment rates	28.9	4.4	1.7	28.9	6.6	1.8	31.6	8.6	3.6	32.8	8.9	4.3	34.1	9.3	4.3
	Labour force participation rates	48.3	70.1	34.7	46.8	72.8	32.5	39.1	71.6	29.4	38.8	71.6	28.3	38.5	72.2	28.5
	Employment/population ratios	34.4	67.0	34.1	33.3	68.0	32.0	26.8	65.4	28.3	26.1	65.2	27.0	25.4	65.5	27.3
Japan	Unemployment rates	4.5	2.2	3.9	4.3	1.6	2.7	5.5	2.4	3.5	6.1	2.6	3.7	6.6	2.7	4.2
	Labour force participation rates	44.2	78.3	63.7	44.1	80.9	64.7	47.6	81.4	66.1	47.6	81.4	66.2	48.3	81.8	66.3
	Employment/population ratios	42.2	76.6	61.3	42.2	79.6	62.9	45.0	79.5	63.7	44.7	79.3	63.7	45.1	79.6	63.6
Korea	Unemployment rates	..	..	..	7.0	1.9	0.8	7.2	1.9	0.6	6.3	1.6	0.8	6.1	1.6	0.6
	Labour force participation rates	..	..	..	35.0	74.6	62.4	37.1	75.3	63.9	36.5	75.6	64.1	35.4	76.1	63.6
	Employment/population ratios	..	..	..	32.5	73.2	61.9	34.4	73.9	63.5	34.2	74.4	63.6	33.2	74.9	63.2
Luxembourg	Unemployment rates	6.8	2.4	1.1	3.7	1.4	0.8	7.9	3.0	0.7	7.2	2.5	0.3	9.2	2.7	0.0
	Labour force participation rates	60.2	68.8	25.4	44.7	72.8	28.4	46.5	75.8	23.3	41.2	73.8	24.0	40.7	75.2	22.6
	Employment/population ratios	56.1	67.2	25.1	43.1	71.8	28.2	42.8	73.5	23.2	38.2	71.9	24.0	36.9	73.2	22.6
Mexico[b]	Unemployment rates	..	..	..	5.4	2.2	1.0	7.1	3.3	2.0	9.3	4.4	3.3	6.7	2.8	1.9
	Labour force participation rates	..	..	..	52.2	65.9	54.6	54.1	67.2	53.5	54.1	67.8	52.9	53.1	68.4	53.2
	Employment/population ratios	..	..	..	49.3	64.4	54.1	50.3	65.0	52.4	49.1	64.8	51.2	49.5	66.5	52.2
Netherlands	Unemployment rates	21.1	9.8	6.6	11.1	7.2	3.8	11.3	6.6	3.3	12.1	6.4	3.5	11.4	5.6	4.0
	Labour force participation rates	48.7	68.8	32.8	59.6	76.0	30.9	60.6	79.1	30.2	62.0	79.4	29.9	61.1	80.3	31.2
	Employment/population ratios	38.5	62.0	30.6	53.0	70.6	29.7	53.7	73.9	29.2	54.5	74.4	28.8	54.1	75.8	30.0
New Zealand	Unemployment rates	..	..	..	14.1	6.0	4.6	15.0	6.6	4.8	11.9	5.1	3.3	11.7	4.9	3.7
	Labour force participation rates	..	..	..	67.9	81.2	43.8	66.0	81.5	49.8	67.4	81.7	52.1	67.5	82.4	55.8
	Employment/population ratios	..	..	..	58.3	76.3	41.8	56.1	76.1	47.4	59.4	77.5	50.4	59.6	78.4	53.8
Norway[c, d]	Unemployment rates	8.9	2.7	1.0	11.8	4.5	1.7	12.6	4.7	1.7	11.8	4.0	2.6	12.5	3.9	2.2
	Labour force participation rates	61.8	84.4	66.4	60.5	85.9	63.1	55.4	85.1	63.3	55.7	86.0	64.8	59.5	87.0	66.1
	Employment/population ratios	56.4	82.1	65.7	53.4	82.1	62.1	48.4	81.1	62.2	49.1	82.5	63.1	52.1	83.6	64.7
Poland	Unemployment rates	..	..	..	..	..	..	32.5	12.8	7.0	31.2	11.7	6.0	..	..	..
	Labour force participation rates	..	..	..	..	..	..	41.5	84.7	37.0	39.7	84.0	35.9	..	..	..
	Employment/population ratios	..	..	..	..	..	..	28.0	73.8	34.4	27.3	74.2	33.8	..	..	..
Portugal	Unemployment rates	17.9	5.2	2.3	9.9	3.8	2.1	14.6	6.1	4.0	16.1	6.4	4.1	16.7	6.4	4.7
	Labour force participation rates	68.9	77.8	50.3	60.7	81.5	48.4	47.2	83.8	47.9	44.6	84.1	46.6	44.3	84.6	48.5
	Employment/population ratios	56.6	73.8	49.1	54.7	78.4	47.4	40.3	78.7	46.0	37.4	78.7	44.6	37.0	79.2	46.2
Spain[c]	Unemployment rates	37.6	11.5	7.4	32.3	13.1	8.1	42.8	20.9	12.3	42.5	20.0	12.2	42.0	19.3	11.6
	Labour force participation rates	57.6	63.4	44.6	51.2	70.2	40.0	49.1	73.5	36.8	45.1	73.9	36.5	44.4	74.6	37.3
	Employment/population ratios	35.9	56.1	41.3	34.7	61.0	36.8	28.1	58.1	32.3	25.9	59.1	32.1	25.7	60.2	33.0

Table C. **Unemployment, labour force participation rates and employment/population ratios by age** *(cont.)*

Both sexes

Percentages

		1983			1990			1994			1995			1996		
		15 to 24	25 to 54	55 to 64	15 to 24	25 to 54	55 to 64	15 to 24	25 to 54	55 to 64	15 to 24	25 to 54	55 to 64	15 to 24	25 to 54	55 to 64
Sweden[c]	Unemployment rates	8.0	2.4	3.9	3.7	1.2	1.5	16.7	6.9	6.5	15.4	6.6	7.4	15.7	7.0	7.6
	Labour force participation rates	65.4	91.0	68.2	68.5	92.8	70.5	49.7	88.0	66.2	50.0	88.4	66.9	47.8	87.9	68.6
	Employment/population ratios	60.2	88.9	65.5	66.0	91.6	69.4	41.4	81.9	61.9	42.3	82.6	61.9	40.3	81.8	63.4
Switzerland	Unemployment rates	..	..	..	..	..	..	5.6	3.6	4.3	5.6	3.1	3.3	4.9	3.8	3.5
	Labour force participation rates	..	..	..	..	..	..	63.9	82.7	69.2	62.5	83.9	69.8	64.2	83.3	59.5
	Employment/population ratios	..	..	..	..	..	..	60.4	79.7	66.2	58.9	81.3	67.5	61.1	80.2	57.5
Turkey	Unemployment rates	..	..	..	16.0	5.4	3.1	15.7	6.0	2.2	14.7	4.9	2.3	12.9	4.4	1.7
	Labour force participation rates	..	..	..	54.7	65.1	44.1	49.4	63.6	41.6	47.9	64.0	43.4	47.1	63.0	42.5
	Employment/population ratios	..	..	..	45.9	61.6	42.7	41.7	59.8	40.6	40.9	60.9	42.4	41.0	60.2	41.8
United Kingdom[c, e]	Unemployment rates	19.7	9.5	9.4	10.1	5.8	7.2	16.2	8.3	9.1	15.3	7.4	7.5	14.7	7.0	7.1
	Labour force participation rates	75.6	81.1	52.4	78.0	83.9	53.0	70.2	83.5	52.1	69.8	83.4	51.4	70.7	83.3	51.4
	Employment/population ratios	60.7	73.3	47.5	70.1	79.0	49.2	58.9	76.6	47.4	59.1	77.2	47.6	60.3	77.5	47.7
United States[c]	Unemployment rates	17.2	8.0	5.7	11.2	4.6	3.3	12.5	5.0	4.1	12.1	4.5	3.6	12.0	4.3	3.4
	Labour force participation rates	67.1	80.1	54.5	67.3	83.5	55.9	66.4	83.4	56.8	66.3	83.5	57.2	65.5	83.8	57.9
	Employment/population ratios	55.6	73.7	51.4	59.8	79.7	54.0	58.1	79.2	54.4	58.3	79.7	55.1	57.6	80.2	55.9
North America[f]	Unemployment rates	17.4	8.2	5.9	9.7	4.5	3.2	11.2	5.1	4.2	11.5	4.8	3.9	10.7	4.4	3.4
	Labour force participation rates	67.1	80.1	54.3	62.6	80.4	55.2	62.1	80.3	55.5	61.9	80.5	55.6	61.0	80.8	56.2
	Employment/population ratios	55.4	73.5	51.1	56.5	76.8	53.4	55.1	76.3	53.2	54.8	76.6	53.5	54.4	77.2	54.3
European Union[f]	Unemployment rates	21.1	7.2	6.6	16.0	6.9	6.5	20.7	9.6	8.3	20.2	9.2	8.1	20.1	9.3	10.1
	Labour force participation rates	56.5	75.5	43.5	54.3	78.6	41.0	49.0	80.4	39.2	48.0	80.4	38.9	48.0	80.9	39.0
	Employment/population ratios	44.6	70.1	40.7	45.6	73.2	38.3	38.9	72.7	35.9	38.3	73.0	35.7	38.3	73.3	35.1
OECD Europe[f]	Unemployment rates	20.7	7.3	6.6	15.6	6.7	6.0	20.1	9.5	7.8	19.4	8.9	7.4	18.3	8.7	9.1
	Labour force participation rates	57.4	76.1	44.4	55.4	77.7	41.9	49.5	79.4	40.2	48.2	79.3	39.6	48.7	79.1	40.0
	Employment/population ratios	45.5	70.6	41.5	46.8	72.5	39.4	39.6	71.9	37.1	38.8	72.3	36.6	39.8	72.2	36.4
Total OECD[f]	Unemployment rates	17.5	6.6	5.7	11.7	4.9	4.1	14.2	6.6	5.4	14.1	6.3	5.2	13.2	6.0	5.7
	Labour force participation rates	58.9	77.7	50.3	55.5	78.9	50.2	53.3	79.7	49.2	52.6	79.7	49.0	52.8	79.8	50.0
	Employment/population ratios	48.6	72.6	47.5	49.1	75.0	48.2	45.7	74.4	46.6	45.2	74.7	46.4	45.8	75.0	47.2

a) For unemployment, data for the age group 55 to 64 refers to 55 and over.
b) 1990 refers to 1991.
c) Age group 15 to 24 refers to 16 to 24.
d) For unemployment up to year 1994, 25 to 54 refers to 25 to 59 and 55 to 64 refers to 60 and over.
e) 1983 refers to 1984.
f) Above countries only.
Source: OECD, *Labour Force Statistics, 1975-1995,* Part lll, forthcoming.

Table C. **Unemployment, labour force participation rates and employment/population ratios by age**

Men

Percentages

		1983			1990			1994			1995			1996		
		15 to 24	25 to 54	55 to 64	15 to 24	25 to 54	55 to 64	15 to 24	25 to 54	55 to 64	15 to 24	25 to 54	55 to 64	15 to 24	25 to 54	55 to 64
Australia[a]	Unemployment rates	19.5	7.3	3.8	13.9	4.9	6.5	16.7	7.5	10.5	14.8	6.9	9.2	15.4	7.2	9.8
	Labour force participation rates	74.1	94.0	62.0	73.0	93.1	63.2	70.7	91.4	60.7	71.8	91.6	60.9	72.9	91.5	60.3
	Employment/population ratios	59.7	87.1	59.6	62.8	88.5	59.1	58.9	84.5	54.4	61.1	85.4	55.2	61.6	84.9	54.4
Austria	Unemployment rates	..	..	..	..	..	..	4.5	3.0	4.0	5.7	3.6	4.4	7.1	5.1	5.1
	Labour force participation rates	..	..	..	..	..	..	65.6	92.4	41.3	64.6	93.2	42.6	62.9	93.0	44.7
	Employment/population ratios	..	..	..	..	..	..	62.6	89.6	39.7	60.9	89.8	40.8	58.4	88.2	42.4
Belgium	Unemployment rates	19.3	6.2	5.8	10.1	4.0	3.1	20.5	6.4	4.5	19.7	6.2	3.8	17.3	6.6	4.7
	Labour force participation rates	46.0	94.4	50.6	37.0	92.2	35.4	37.3	92.1	34.5	36.0	92.3	35.9	35.6	92.4	33.8
	Employment/population ratios	37.1	88.5	47.7	33.3	88.5	34.3	29.7	86.2	33.0	28.9	86.5	34.5	29.4	86.3	32.2
Canada	Unemployment rates	22.2	9.7	8.2	13.9	7.1	6.2	18.5	9.5	9.5	17.0	8.6	8.3	17.5	8.7	7.8
	Labour force participation rates	69.8	93.7	72.4	71.4	93.3	64.9	65.2	91.4	60.3	63.9	91.0	58.9	63.5	91.0	59.3
	Employment/population ratios	54.3	84.6	66.4	61.5	86.6	60.9	53.2	82.7	54.6	53.1	83.2	54.0	52.4	83.1	54.7
Czech Republic	Unemployment rates	..	..	..	..	..	..	7.8	2.3	2.8	7.5	2.6	2.6	6.4	2.5	3.2
	Labour force participation rates	..	..	..	..	..	..	56.3	95.2	48.5	58.0	95.4	52.0	57.8	95.2	55.8
	Employment/population ratios	..	..	..	..	..	..	51.9	93.1	47.2	53.7	92.9	50.6	54.1	92.8	54.0
Denmark	Unemployment rates	18.1	7.6	6.2	11.4	7.5	5.2	10.2	6.7	6.3	7.8	5.0	6.9	9.0	4.7	6.0
	Labour force participation rates	68.3	94.2	67.2	76.5	94.5	69.2	72.1	91.9	63.8	77.0	91.8	67.9	76.6	92.8	62.1
	Employment/population ratios	55.9	87.1	63.1	67.8	87.4	65.6	64.8	85.7	59.8	71.0	87.3	63.2	69.7	88.5	58.4
Finland	Unemployment rates	10.3	4.6	5.1	7.3	3.4	2.8	26.5	15.1	25.4	41.3	14.6	16.3	24.5	13.5	24.6
	Labour force participation rates	61.0	93.5	54.1	61.9	92.8	45.4	50.3	91.1	46.0	51.1	88.3	41.6	50.5	90.6	48.8
	Employment/population ratios	54.7	89.2	51.4	57.4	89.7	44.2	37.0	77.3	34.3	30.0	75.4	34.9	38.1	78.4	36.8
France	Unemployment rates	15.0	4.4	6.0	15.3	5.9	6.0	24.2	9.7	7.3	21.0	8.8	7.7	22.1	9.3	8.6
	Labour force participation rates	50.3	96.1	53.6	39.6	95.4	45.8	33.5	95.1	42.1	32.8	94.9	41.5	32.4	95.2	42.3
	Employment/population ratios	42.8	91.9	50.4	33.6	89.8	43.0	25.4	85.9	39.1	25.9	86.6	38.4	25.3	86.3	38.6
Germany	Unemployment rates	10.4	6.3	9.0	5.3	4.7	9.9	8.3	6.5	10.6	8.1	6.4	10.4	8.4	7.0	15.2
	Labour force participation rates	61.0	94.3	63.1	62.0	91.2	57.7	59.1	93.3	53.3	58.5	92.5	52.7	..	..	..
	Employment/population ratios	54.6	88.4	57.4	58.7	86.9	52.0	54.2	87.2	47.7	53.8	86.6	47.2	..	..	..
Greece	Unemployment rates	17.1	4.8	2.9	15.1	3.2	1.8	19.8	4.8	3.3	19.4	5.1	3.6	..	..	..
	Labour force participation rates	50.4	95.1	70.8	44.1	94.3	59.5	41.8	94.5	60.1	41.3	94.5	61.1	..	..	..
	Employment/population ratios	41.8	90.5	68.8	37.4	91.3	58.4	33.5	90.0	58.1	33.3	89.7	58.9	..	..	..
Hungary	Unemployment rates	..	..	..	..	..	..	..	..	..	20.7	5.4	5.9	19.0	9.4	5.7
	Labour force participation rates	..	..	..	..	..	..	..	..	..	44.6	28.6	44.9	43.7	85.9	28.0
	Employment/population ratios	..	..	..	..	..	..	..	..	..	35.3	27.1	42.3	35.4	77.8	26.4
Iceland[b]	Unemployment rates	..	..	..	6.5	2.0	1.1	12.6	3.5	4.2	13.1	3.0	4.3	8.9	1.9	3.3
	Labour force participation rates	..	..	..	59.9	97.1	94.1	58.0	96.1	96.0	64.0	97.2	92.9	60.3	96.0	92.9
	Employment/population ratios	..	..	..	56.0	95.1	93.1	50.7	92.8	91.9	55.7	94.3	88.9	54.9	94.2	89.9

Table C. **Unemployment, labour force participation rates and employment/population ratios by age** *(cont.)*

Men

Percentages

		1983			1990			1994			1995			1996		
		15 to 24	25 to 54	55 to 64	15 to 24	25 to 54	55 to 64	15 to 24	25 to 54	55 to 64	15 to 24	25 to 54	55 to 64	15 to 24	25 to 54	55 to 64
Ireland	Unemployment rates	22.9	14.0	11.2	18.9	11.8	8.5	25.4	13.4	8.6	20.5	11.2	7.5	19.2	11.2	6.9
	Labour force participation rates	64.2	95.6	78.0	53.4	91.9	65.1	48.2	91.1	64.7	49.0	90.6	63.9	47.1	91.5	63.0
	Employment/population ratios	49.5	82.2	69.2	43.3	81.1	59.6	35.9	78.8	59.1	38.9	80.5	59.1	38.0	81.3	58.7
Italy	Unemployment rates	23.8	2.6	1.5	23.4	3.9	1.7	28.7	6.4	3.8	29.0	6.7	4.1	30.0	7.1	4.3
	Labour force participation rates	53.7	95.7	56.2	50.7	94.0	51.7	44.1	90.1	46.5	43.8	89.5	44.1	43.0	89.7	44.0
	Employment/population ratios	40.9	93.2	55.3	38.8	90.2	50.9	31.4	84.3	44.8	31.1	83.5	42.3	30.1	83.4	42.1
Japan	Unemployment rates	4.6	2.0	2.0	4.5	1.4	3.4	5.6	2.0	4.5	6.1	2.2	4.7	6.8	2.5	5.1
	Labour force participation rates	43.9	97.1	97.1	43.4	97.5	83.3	48.0	97.5	85.0	48.0	97.5	84.8	48.9	97.7	84.9
	Employment/population ratios	41.9	95.2	95.2	41.4	96.2	80.4	45.4	95.5	81.2	45.1	95.3	80.8	45.6	95.3	80.6
Korea	Unemployment rates	..	..	..	9.5	2.5	1.2	9.3	2.4	0.9	8.0	1.9	1.1	8.3	2.0	0.9
	Labour force participation rates	..	..	..	28.3	94.6	77.2	31.0	94.6	79.7	30.1	94.6	79.7	29.5	94.4	79.2
	Employment/population ratios	..	..	..	25.7	92.2	76.3	28.1	92.3	79.0	27.7	92.8	78.8	27.1	92.5	78.5
Luxembourg	Unemployment rates	5.6	1.7	0.0	2.7	1.1	1.1	8.5	2.5	0.4	6.7	1.7	0.0	10.1	1.8	0.0
	Labour force participation rates	62.7	95.4	37.8	45.7	95.1	43.2	47.9	94.9	33.6	42.4	93.9	35.1	42.8	93.8	35.6
	Employment/population ratios	59.2	93.7	37.8	44.5	94.0	42.7	43.8	92.6	33.5	39.6	92.2	35.1	38.5	92.1	35.6
Mexico[b]	Unemployment rates	..	..	..	5.2	1.5	1.0	6.5	3.2	2.1	8.6	4.6	3.5	6.2	2.7	2.3
	Labour force participation rates	..	..	..	71.2	96.8	85.9	72.6	96.1	82.4	72.5	96.2	80.7	71.8	96.5	80.2
	Employment/population ratios	..	..	..	67.5	95.4	85.1	67.9	93.0	80.7	66.3	91.8	77.9	67.4	93.9	78.4
Netherlands	Unemployment rates	23.0	8.9	6.7	10.3	5.0	2.8	13.6	5.6	2.6	11.5	5.4	3.6	11.3	4.3	3.5
	Labour force participation rates	49.0	93.4	54.1	60.0	93.4	45.8	61.6	92.6	42.3	62.2	92.6	41.4	61.3	92.7	42.2
	Employment/population ratios	37.7	85.1	50.5	53.8	88.8	44.5	53.2	87.4	41.2	55.0	87.7	39.9	54.4	88.7	40.7
New Zealand	Unemployment rates	..	..	..	14.9	6.6	4.9	15.6	7.0	5.4	11.9	5.1	3.6	12.3	4.7	4.3
	Labour force participation rates	..	..	..	71.4	93.4	56.8	69.8	92.3	63.0	71.4	92.1	65.4	70.9	92.0	69.0
	Employment/population ratios	..	..	..	60.7	87.2	54.0	58.9	85.9	59.6	62.8	87.4	63.0	62.1	87.7	66.1
Norway[c, d]	Unemployment rates	8.2	2.6	1.1	12.4	4.8	2.2	13.1	5.6	1.6	11.9	4.3	3.2	12.1	3.8	2.5
	Labour force participation rates	66.9	95.1	80.3	63.9	92.3	72.8	57.8	90.6	71.5	58.0	91.2	72.3	62.0	92.1	73.2
	Employment/population ratios	61.4	92.7	79.4	56.0	87.9	71.2	50.2	85.5	70.4	51.1	87.3	70.0	54.5	88.6	71.4
Poland	Unemployment rates	..	..	..	..	..	..	30.8	11.3	7.5	29.0	10.4	6.7	..	..	..
	Labour force participation rates	..	..	..	..	..	..	45.2	90.9	46.7	43.9	90.1	45.5	..	..	..
	Employment/population ratios	..	..	..	..	..	..	31.3	80.6	43.2	31.1	80.8	42.5	..	..	..
Portugal	Unemployment rates	13.0	2.5	2.3	7.1	2.2	2.2	14.2	5.1	5.0	14.5	5.5	5.0	14.5	5.6	5.5
	Labour force participation rates	76.8	95.5	70.7	66.1	94.3	66.5	50.8	93.6	63.6	49.8	93.4	60.7	48.8	92.9	62.0
	Employment/population ratios	66.8	93.1	69.1	61.4	92.1	65.0	43.6	88.9	60.4	42.6	88.3	57.7	41.7	87.7	58.6
Spain[c]	Unemployment rates	33.7	11.5	8.8	26.2	9.3	8.4	37.4	16.4	13.3	37.0	15.3	12.6	36.3	14.9	11.4
	Labour force participation rates	68.3	94.5	71.5	54.6	94.1	62.4	54.7	92.9	56.1	47.7	92.5	54.9	47.1	92.6	56.3
	Employment/population ratios	45.2	83.6	65.2	40.3	85.4	57.2	34.3	77.6	48.6	30.1	78.3	48.0	30.0	78.8	49.9

Table C. **Unemployment, labour force participation rates and employment/population ratios by age** *(cont.)*

Men

Percentages

		1983			1990			1994			1995			1996		
		15 to 24	25 to 54	55 to 64	15 to 24	25 to 54	55 to 64	15 to 24	25 to 54	55 to 64	15 to 24	25 to 54	55 to 64	15 to 24	25 to 54	55 to 64
Sweden[c]	Unemployment rates	7.8	2.3	4.0	3.8	1.3	1.3	19.0	7.8	7.8	16.7	7.2	8.5	16.7	7.4	8.6
	Labour force participation rates	65.7	95.0	77.0	68.7	94.7	75.3	49.4	89.8	69.9	50.1	90.6	70.4	48.9	90.0	72.2
	Employment/population ratios	60.6	92.8	73.9	66.1	93.5	74.4	40.0	82.8	64.5	41.8	84.0	64.4	40.7	83.4	66.0
Switzerland	Unemployment rates	..	..	..	..	..	..	5.6	3.2	4.9	5.8	2.3	4.0	5.4	3.3	3.3
	Labour force participation rates	..	..	..	..	..	..	64.5	94.4	78.5	64.2	95.5	78.8	65.4	94.0	77.9
	Employment/population ratios	..	..	..	..	..	..	60.9	91.4	74.7	60.5	93.2	75.7	61.9	90.9	75.3
Turkey	Unemployment rates	..	..	..	16.6	5.2	4.0	17.3	6.2	2.9	16.3	4.9	3.1	14.6	4.6	2.3
	Labour force participation rates	..	..	..	71.8	94.2	61.3	64.8	93.4	58.3	61.9	93.4	60.9	60.9	92.6	57.4
	Employment/population ratios	..	..	..	59.9	89.3	58.8	53.5	87.6	56.6	51.8	88.8	59.1	52.0	88.3	56.1
United Kingdom[c, e]	Unemployment rates	20.9	9.4	10.6	11.1	5.6	8.4	19.1	9.8	11.6	17.9	8.5	10.1	17.8	8.0	9.5
	Labour force participation rates	81.9	95.4	70.0	83.5	94.8	68.1	75.1	93.0	64.1	74.4	92.7	62.4	75.3	91.9	62.9
	Employment/population ratios	64.8	86.4	62.6	74.2	89.5	62.4	60.8	83.9	56.6	61.1	84.8	56.1	61.9	84.6	57.0
United States[c]	Unemployment rates	18.4	8.2	6.1	11.6	4.6	3.8	13.2	4.9	4.4	12.5	4.4	3.6	12.6	4.2	3.3
	Labour force participation rates	72.5	93.8	69.4	71.8	93.4	67.8	70.3	91.7	65.5	70.2	91.6	66.0	68.8	91.8	67.0
	Employment/population ratios	59.2	86.1	65.2	63.5	89.1	65.2	61.0	87.2	62.6	61.5	87.6	63.6	60.1	87.9	64.7
North America[f]	Unemployment rates	18.8	8.4	6.3	9.8	4.2	3.4	11.3	5.0	4.3	11.4	4.8	3.9	10.7	4.3	3.5
	Labour force participation rates	72.2	93.8	69.7	71.6	94.0	70.4	70.7	92.5	67.8	70.5	92.4	67.8	69.4	92.6	68.5
	Employment/population ratios	58.6	85.9	65.3	64.6	90.0	68.0	62.7	87.9	64.8	62.5	88.0	65.1	62.0	88.6	66.1
European Union[f]	Unemployment rates	19.3	6.3	6.9	13.8	5.3	6.2	20.0	8.4	8.6	18.9	7.9	8.4	19.1	8.2	9.8
	Labour force participation rates	61.8	95.1	62.8	57.8	93.7	56.7	52.9	92.8	52.4	51.5	92.5	51.5	51.5	92.4	51.5
	Employment/population ratios	49.8	89.1	58.5	49.8	88.8	53.2	42.3	85.1	47.8	41.8	85.2	47.2	41.6	84.8	46.4
OECD Europe[f]	Unemployment rates	19.1	6.3	6.7	14.3	5.3	5.9	19.6	8.2	7.9	18.7	7.6	7.5	17.6	7.6	8.8
	Labour force participation rates	61.8	95.1	62.9	60.1	93.8	57.2	54.4	92.8	52.9	52.8	92.1	52.3	53.3	92.3	52.2
	Employment/population ratios	50.0	89.1	58.7	51.5	88.8	53.8	43.8	85.2	48.7	42.9	85.1	48.3	43.9	85.3	47.6
Total OECD[f]	Unemployment rates	17.5	6.2	3.9	11.2	4.2	4.4	14.3	6.0	5.9	14.0	5.7	5.6	13.2	5.5	6.0
	Labour force participation rates	63.2	95.0	80.6	60.9	94.4	66.3	58.8	93.3	63.2	57.9	92.9	62.8	58.1	93.1	63.6
	Employment/population ratios	52.1	89.1	77.4	54.1	90.4	63.3	50.4	87.6	59.4	49.8	87.7	59.3	50.5	88.1	59.8

a) For unemployment, data for the age group 55 to 64 refers to 55 and over.
b) 1990 refers to 1991.
c) Age group 15 to 24 refers to 16 to 24; for unemployment up to year 1994, 25 to 54 refers to 25 to 59 and 55 to 64 refers to 60 and over.
d) For unemployment up to year 1994, 25 to 54 refers to 25 to 59 and 55 to 64 refers to 60 and over.
e) 1983 refers to 1984.
f) Above countries only.
Source: OECD, *Labour Force Statistics, 1975-1995,* Part III, forthcoming.

Table C. **Unemployment, labour force participation rates and employment/population ratios by age**

Women

Percentages

		1983			1990			1994			1995			1996		
		15 to 24	25 to 54	55 to 64	15 to 24	25 to 54	55 to 64	15 to 24	25 to 54	55 to 64	15 to 24	25 to 54	55 to 64	15 to 24	25 to 54	55 to 64
Australia[a]	Unemployment rates	16.1	7.5	2.9	12.4	5.5	3.1	15.7	6.9	4.9	14.0	5.7	4.1	14.1	6.4	4.5
	Labour force participation rates	64.1	53.5	20.5	67.7	66.6	24.9	65.9	67.4	26.5	67.6	69.2	28.6	67.6	68.8	31.3
	Employment/population ratios	53.8	49.5	19.9	59.3	63.0	24.1	55.6	62.7	25.2	58.2	65.2	27.5	58.0	64.4	29.9
Austria	Unemployment rates	..	..	..	..	..	..	5.2	3.8	2.7	6.2	4.8	2.9	6.5	5.1	3.5
	Labour force participation rates	..	..	..	..	..	..	59.3	71.7	18.5	58.9	73.3	18.8	56.4	73.9	17.9
	Employment/population ratios	..	..	..	..	..	..	56.2	68.9	18.0	55.2	69.8	18.3	52.7	70.1	17.3
Belgium	Unemployment rates	28.9	15.3	4.1	19.2	10.3	4.9	23.4	11.2	5.9	23.7	11.1	4.4	24.4	11.3	4.0
	Labour force participation rates	41.8	54.1	12.3	34.1	60.8	9.9	33.0	67.2	13.2	31.7	68.2	13.3	29.9	69.0	12.5
	Employment/population ratios	29.7	45.8	11.8	27.5	54.5	9.4	25.3	59.7	12.4	24.2	60.6	12.7	22.6	61.2	12.0
Canada	Unemployment rates	16.8	9.8	7.9	11.3	7.5	5.6	14.3	9.0	8.3	14.0	8.3	8.0	14.6	8.5	7.6
	Labour force participation rates	63.6	65.6	33.5	67.0	75.7	35.5	60.6	75.7	37.4	60.4	75.9	36.3	59.5	76.4	36.9
	Employment/population ratios	52.9	59.1	30.9	59.4	70.0	33.5	51.9	68.9	34.3	51.9	69.6	33.4	50.8	69.9	34.1
Czech Republic	Unemployment rates	..	..	..	..	..	..	7.6	3.8	3.4	8.5	4.2	3.8	8.3	4.0	4.1
	Labour force participation rates	..	..	..	..	..	..	51.7	88.4	19.7	42.9	83.7	21.3	40.8	82.1	23.2
	Employment/population ratios	..	..	..	..	..	..	47.8	85.0	19.1	39.2	80.3	20.5	37.4	78.9	22.3
Denmark	Unemployment rates	19.7	8.5	6.3	11.6	8.4	7.5	10.2	9.0	6.7	12.3	7.6	9.8	12.4	7.6	6.3
	Labour force participation rates	62.2	84.0	41.7	70.4	87.7	45.8	65.9	82.7	43.1	69.4	82.1	40.1	70.8	82.1	39.5
	Employment/population ratios	49.9	76.8	39.1	62.2	80.3	42.4	59.1	75.2	40.2	60.9	75.9	36.1	62.0	75.8	37.0
Finland	Unemployment rates	10.8	3.9	7.0	5.2	2.3	3.8	30.1	14.5	22.2	28.1	14.6	22.8	25.0	14.3	26.3
	Labour force participation rates	53.0	85.8	47.4	54.1	86.0	39.7	39.8	84.7	40.8	39.3	85.1	42.9	38.7	85.4	44.2
	Employment/population ratios	47.3	82.5	44.1	51.3	84.0	38.2	27.8	72.5	31.7	28.2	72.7	33.1	29.0	73.2	32.6
France	Unemployment rates	25.5	7.7	6.9	23.9	10.7	7.6	31.6	13.1	6.7	32.2	12.6	6.6	31.9	13.0	8.6
	Labour force participation rates	41.0	67.0	32.7	33.1	72.9	31.1	27.8	76.7	30.1	26.7	77.3	30.9	25.9	77.8	31.3
	Employment/population ratios	30.5	61.9	30.4	25.2	65.1	28.8	19.0	66.6	28.1	18.1	67.5	28.9	17.7	67.6	28.6
Germany	Unemployment rates	11.7	8.0	8.6	6.0	7.1	15.2	8.2	10.0	13.3	8.0	9.7	13.1	7.5	9.3	23.0
	Labour force participation rates	54.8	58.3	26.3	57.4	64.1	26.4	53.1	72.8	28.4	52.7	72.1	28.1	..	..	..
	Employment/population ratios	48.4	53.7	24.0	54.0	59.6	22.4	48.8	65.5	24.6	48.5	65.1	24.4	..	..	..
Greece	Unemployment rates	30.1	8.6	1.7	32.6	8.6	1.2	36.9	10.7	2.6	37.7	10.9	2.9	..	..	..
	Labour force participation rates	36.2	43.8	25.7	35.3	51.5	24.3	32.6	53.9	23.0	32.5	55.0	24.5	..	..	..
	Employment/population ratios	25.3	40.1	25.2	23.8	47.1	24.0	20.6	48.1	22.4	20.3	49.0	23.8	..	..	..
Hungary	Unemployment rates	..	..	..	..	..	..	..	..	..	15.6	7.7	5.3	16.4	7.8	4.0
	Labour force participation rates	..	..	..	..	..	..	..	..	..	31.9	68.9	9.7	30.2	68.5	14.4
	Employment/population ratios	..	..	..	..	..	..	..	..	..	27.0	63.6	9.2	25.2	63.2	13.8
Iceland[b]	Unemployment rates	..	..	..	3.5	2.7	2.4	10.3	4.9	3.6	8.6	4.3	3.5	7.8	3.3	3.7
	Labour force participation rates	..	..	..	58.7	83.2	80.8	59.5	86.4	80.6	59.5	88.1	85.1	60.1	86.8	80.4
	Employment/population ratios	..	..	..	56.6	81.0	78.8	53.3	82.1	77.7	54.4	84.3	82.2	55.4	84.0	77.5

Table C. **Unemployment, labour force participation rates and employment/population ratios by age** *(cont.)*

Women

Percentages

		1983			1990			1994			1995			1996		
		15 to 24	25 to 54	55 to 64	15 to 24	25 to 54	55 to 64	15 to 24	25 to 54	55 to 64	15 to 24	25 to 54	55 to 64	15 to 24	25 to 54	55 to 64
Ireland	Unemployment rates	16.6	7.8	6.4	16.1	13.5	8.3	20.8	13.2	8.2	17.4	10.9	8.5	17.0	10.7	6.7
	Labour force participation rates	52.8	32.8	20.2	47.3	45.5	19.9	42.5	54.1	21.4	42.0	54.6	21.2	40.6	57.5	23.4
	Employment/population ratios	44.1	30.3	18.9	39.6	39.3	18.2	33.7	47.0	19.7	34.7	48.6	19.4	33.7	51.4	21.8
Italy	Unemployment rates	34.9	8.1	2.4	35.4	11.3	2.0	35.4	12.3	3.0	37.6	12.6	4.9	39.2	12.9	4.3
	Labour force participation rates	43.2	45.5	15.0	43.0	52.1	15.0	34.3	53.2	13.7	33.8	53.7	13.8	33.9	54.8	14.4
	Employment/population ratios	28.1	41.8	14.6	27.8	46.2	14.7	22.1	46.6	13.3	21.1	47.0	13.1	20.6	47.7	13.8
Japan	Unemployment rates	4.5	2.4	2.1	4.1	2.1	1.4	5.3	2.8	1.9	6.1	3.1	2.1	6.7	3.2	2.3
	Labour force participation rates	44.4	59.5	46.1	44.8	64.2	47.2	47.1	65.3	48.1	47.2	65.2	48.5	47.6	65.8	48.8
	Employment/population ratios	42.5	58.1	45.1	43.0	62.9	46.5	44.6	63.4	47.2	44.4	63.2	47.5	44.4	63.7	47.6
Korea	Unemployment rates	..	..	..	5.5	0.9	0.1	6.0	1.0	0.2	5.3	0.9	0.4	4.8	1.0	0.4
	Labour force participation rates	..	..	..	40.7	54.2	49.6	42.3	55.1	50.1	41.9	55.6	50.4	40.5	56.9	49.6
	Employment/population ratios	..	..	..	38.5	53.7	49.5	39.7	54.5	49.9	39.7	55.1	50.2	38.5	56.4	49.4
Luxembourg	Unemployment rates	8.0	3.9	3.6	4.7	2.2	0.0	7.2	3.9	1.2	7.8	3.9	1.0	8.3	4.2	0.0
	Labour force participation rates	57.7	40.8	14.7	44.0	49.7	13.8	45.0	55.7	13.4	40.0	52.7	13.3	38.5	55.9	10.2
	Employment/population ratios	53.0	39.2	14.1	42.0	48.6	13.8	41.8	53.5	13.2	36.8	50.6	13.2	35.3	53.6	10.2
Mexico[b]	Unemployment rates	..	..	..	5.8	3.8	1.0	8.3	3.5	1.7	10.8	4.1	2.6	7.8	3.0	0.7
	Labour force participation rates	..	..	..	34.5	38.2	24.4	35.8	41.3	25.8	36.0	42.3	26.9	35.2	43.4	27.8
	Employment/population ratios	..	..	..	32.5	36.8	24.2	32.8	39.8	25.4	32.1	40.6	26.2	32.4	42.1	27.6
Netherlands	Unemployment rates	19.0	11.9	6.4	11.9	10.9	6.3	9.0	8.0	4.9	12.7	7.9	3.2	11.6	7.5	5.1
	Labour force participation rates	48.5	43.1	13.4	59.2	57.9	16.9	59.6	65.0	18.4	61.8	65.7	18.6	60.9	67.5	20.5
	Employment/population ratios	39.3	38.0	12.5	52.2	51.6	15.8	54.3	59.8	17.5	53.9	60.5	18.0	53.9	62.5	19.4
New Zealand	Unemployment rates	..	..	..	13.2	5.4	4.0	14.3	6.1	3.5	11.7	5.1	2.7	11.0	5.1	2.7
	Labour force participation rates	..	..	..	64.3	69.3	30.7	62.2	71.0	36.7	63.3	71.6	38.9	64.0	73.2	42.8
	Employment/population ratios	..	..	..	55.8	65.6	29.5	53.3	66.6	35.4	55.9	68.0	37.9	56.9	69.5	41.7
Norway[c, d]	Unemployment rates	9.6	2.9	0.8	11.0	4.1	1.0	12.1	3.9	1.9	11.8	3.7	1.9	12.7	3.9	1.8
	Labour force participation rates	56.5	73.2	53.1	56.9	79.2	53.9	53.0	79.4	55.4	53.7	80.4	57.4	57.3	81.7	59.2
	Employment/population ratios	51.1	71.1	52.6	50.7	76.0	53.4	46.6	76.3	54.3	47.3	77.4	56.4	50.0	78.5	58.1
Poland	Unemployment rates	..	..	..	..	..	..	34.7	14.5	6.4	33.8	13.2	4.9	..	..	..
	Labour force participation rates	..	..	..	..	..	..	37.9	78.6	28.7	35.6	78.0	27.6	..	..	..
	Employment/population ratios	..	..	..	..	..	..	24.8	67.2	26.8	23.5	67.7	26.3	..	..	..
Portugal	Unemployment rates	25.3	9.1	2.5	12.8	5.8	1.7	16.3	7.2	2.4	17.6	7.5	2.8	19.3	7.3	3.7
	Labour force participation rates	60.5	61.4	32.6	54.6	69.5	33.1	42.6	74.4	34.2	39.7	75.2	34.3	39.8	76.8	36.8
	Employment/population ratios	45.3	55.8	31.8	47.7	65.4	32.5	35.7	69.0	33.4	32.7	69.6	33.3	32.1	71.1	35.5
Spain[c]	Unemployment rates	43.7	11.6	2.9	39.7	20.6	7.2	50.1	28.4	9.8	49.1	27.5	11.4	48.8	26.3	12.1
	Labour force participation rates	46.1	33.3	20.3	47.5	46.9	19.5	43.1	54.3	19.3	42.4	55.5	19.9	41.4	56.8	20.2
	Employment/population ratios	25.9	29.4	19.7	28.7	37.2	18.1	21.5	38.9	17.4	21.6	40.2	17.6	21.2	41.9	17.8

Table C. **Unemployment, labour force participation rates and employment/population ratios by age** *(cont.)*

Women

Percentages

		1983			1990			1994			1995			1996		
		15 to 24	25 to 54	55 to 64	15 to 24	25 to 54	55 to 64	15 to 24	25 to 54	55 to 64	15 to 24	25 to 54	55 to 64	15 to 24	25 to 54	55 to 64
Sweden[c]	Unemployment rates	8.3	2.4	3.8	3.6	1.2	1.6	14.3	5.8	5.0	14.0	5.9	6.3	14.5	6.7	6.5
	Labour force participation rates	65.1	87.0	59.7	68.3	90.8	65.8	49.9	86.0	62.5	49.9	86.2	63.4	46.7	85.8	65.0
	Employment/population ratios	59.7	84.9	57.4	65.9	89.7	64.7	42.8	81.0	59.4	42.9	81.1	59.5	39.9	80.1	60.7
Switzerland	Unemployment rates	..	..	..	..	..	..	7.0	4.3	3.4	5.9	4.1	2.0	4.3	4.6	3.8
	Labour force participation rates	..	..	..	..	..	..	63.6	70.8	56.9	60.7	72.1	57.9	63.0	72.5	42.1
	Employment/population ratios	..	..	..	..	..	..	59.1	67.7	55.0	57.1	69.1	56.7	60.3	69.2	40.5
Turkey	Unemployment rates	..	..	..	15.0	5.9	1.0	13.1	5.7	0.4	12.1	4.7	0.4	10.4	3.7	0.3
	Labour force participation rates	..	..	..	39.4	36.0	26.6	35.7	33.5	24.3	35.3	34.4	26.1	34.7	32.8	27.9
	Employment/population ratios	..	..	..	33.5	33.9	26.4	31.0	31.6	24.2	31.0	32.8	26.0	31.1	31.6	27.8
United Kingdom[c, e]	Unemployment rates	18.2	9.7	7.3	9.0	5.9	5.0	12.6	6.4	5.4	12.2	6.0	3.7	11.1	5.6	3.4
	Labour force participation rates	69.1	66.7	36.1	72.4	72.9	38.7	65.1	74.0	40.7	64.9	74.0	40.8	65.8	74.5	40.2
	Employment/population ratios	56.5	60.2	33.4	65.9	68.6	36.7	56.9	69.3	38.5	57.0	69.5	39.3	58.6	70.3	38.8
United States[c]	Unemployment rates	15.8	7.7	5.0	10.7	4.6	2.8	11.6	5.0	3.9	11.6	4.5	3.6	11.3	4.4	3.4
	Labour force participation rates	61.9	67.1	41.5	62.9	74.0	45.2	62.5	75.3	48.9	62.3	75.6	49.2	62.2	76.1	49.6
	Employment/population ratios	52.2	62.0	39.4	56.1	70.6	44.0	55.3	71.5	47.0	55.1	72.2	47.5	55.2	72.8	47.9
North America[f]	Unemployment rates	15.9	7.9	5.2	9.7	4.8	2.8	11.1	5.2	4.0	11.6	4.8	3.8	10.8	4.6	3.4
	Labour force participation rates	62.1	67.0	40.8	53.8	67.4	41.3	53.5	68.7	44.2	53.3	69.1	44.5	52.6	69.5	44.9
	Employment/population ratios	52.2	61.7	38.6	48.6	64.2	40.1	47.5	65.1	42.5	47.1	65.7	42.8	47.0	66.3	43.3
European Union[f]	Unemployment rates	23.3	8.7	6.0	18.5	9.3	7.0	21.5	11.3	7.6	21.9	11.0	7.6	21.3	10.9	10.6
	Labour force participation rates	51.1	55.9	26.6	50.8	63.4	26.4	45.0	68.0	26.7	44.4	68.2	27.0	44.4	69.3	27.3
	Employment/population ratios	39.2	51.1	25.0	41.4	57.5	24.5	35.3	60.3	24.7	34.7	60.7	24.9	34.9	61.7	24.4
OECD Europe[f]	Unemployment rates	22.4	8.6	6.0	17.2	8.7	6.3	20.3	11.0	7.2	20.3	10.5	6.9	18.7	10.1	9.4
	Labour force participation rates	52.2	57.3	27.6	49.9	61.7	27.3	44.0	66.1	27.8	43.1	66.4	27.6	43.5	65.9	28.2
	Employment/population ratios	40.5	52.3	25.9	41.3	56.3	25.5	35.0	58.9	25.8	34.3	59.4	25.7	35.3	59.2	25.5
Total OECD[f]	Unemployment rates	17.6	7.2	4.8	12.2	5.9	3.6	14.2	7.4	4.6	14.4	7.1	4.4	13.2	6.7	5.2
	Labour force participation rates	54.6	60.7	34.5	50.2	63.5	35.4	47.7	66.2	36.2	47.2	66.5	36.3	47.4	66.6	37.3
	Employment/population ratios	44.9	56.4	32.9	44.1	59.8	34.1	41.0	61.3	34.6	40.4	61.8	34.7	41.1	62.2	35.3

a) For unemployment, data for the age group 55 to 64 refers to 55 and over.
b) 1990 refers to 1991.
c) Age group 15 to 24 refers to 16 to 24; for unemployment up to year 1994, 25 to 54 refers to 25 to 59 and 55 to 64 refers to 60 and over.
d) For unemployment up to year 1994, 25 to 54 refers to 25 to 59 and 55 to 64 refers to 60 and over.
e) 1983 refers to 1984.
f) Above countries only.
Source: OECD, *Labour Force Statistics, 1975-1995,* Part III, forthcoming.

Table D. **Unemployment, labour force participation rates and employment/population ratios by educational attainment for persons aged 25-64, 1994**

Percentages

		Both sexes			Men			Women		
		Less than upper secondary education	Upper secondary education	Tertiary level education	Less than upper secondary education	Upper secondary education	Tertiary level education	Less than upper secondary education	Upper secondary education	Tertiary level education
Australia	Unemployment rates	10.2	6.9	4.5	11.9	6.8	4.7	8.6	7.2	4.2
	Labour force participation rates	66.3	80.1	86.3	82.8	90.2	92.4	55.3	60.8	79.4
	Employment/population ratios	59.5	74.6	82.4	73.0	84.0	88.1	50.5	56.5	76.1
Austria	Unemployment rates	4.9	2.8	1.7	4.8	2.6	1.6	5.1	3.3	1.8
	Labour force participation rates	58.8	77.9	90.2	73.5	86.1	93.1	49.5	67.7	86.2
	Employment/population ratios	55.9	75.7	88.7	70.0	83.9	91.6	47.0	65.5	84.7
Belgium	Unemployment rates	12.5	7.1	3.7	9.3	4.7	3.3	18.2	10.7	4.1
	Labour force participation rates	54.6	78.4	86.9	71.2	88.1	91.5	38.7	67.5	82.3
	Employment/population ratios	47.7	72.8	83.7	64.6	83.9	88.5	31.7	60.3	78.8
Canada	Unemployment rates	14.3	9.0	7.3	14.3	9.1	7.5	14.4	9.0	7.0
	Labour force participation rates	61.8	79.5	86.4	75.4	88.8	91.5	47.8	71.7	80.8
	Employment/population ratios	53.0	72.4	80.1	64.6	80.7	84.7	40.9	65.2	75.1
Denmark	Unemployment rates	17.3	10.0	5.3	16.3	9.3	5.5	18.4	10.9	5.0
	Labour force participation rates	72.7	88.7	93.4	78.5	90.4	94.5	67.9	86.5	92.4
	Employment/population ratios	60.1	79.9	88.5	65.7	82.1	89.3	55.5	77.1	87.8
Finland	Unemployment rates	22.7	16.4	8.5	24.2	17.9	9.4	21.0	14.9	7.5
	Labour force participation rates	68.4	84.8	88.6	72.1	88.6	90.6	64.5	81.3	86.4
	Employment/population ratios	52.8	70.9	81.1	54.6	72.7	82.1	50.9	69.1	79.9
France	Unemployment rates	14.7	10.5	6.8	13.5	8.7	6.5	15.9	12.8	7.2
	Labour force participation rates	60.8	82.6	87.2	71.8	89.9	92.1	52.4	74.2	82.0
	Employment/population ratios	51.8	73.9	81.2	62.1	82.1	86.2	44.0	64.7	76.1
Germany	Unemployment rates	13.9	8.8	5.4	14.8	7.0	4.5	13.2	11.1	7.0
	Labour force participation rates	56.9	76.9	88.1	79.7	85.2	91.2	46.3	68.3	82.5
	Employment/population ratios	49.0	70.2	83.4	67.9	79.2	87.0	40.2	60.7	76.7
Greece	Unemployment rates	6.2	8.7	7.6	4.4	5.7	5.5	9.6	14.1	10.7
	Labour force participation rates	61.8	67.1	85.6	86.0	88.0	90.8	39.7	47.0	79.0
	Employment/population ratios	58.0	61.2	79.1	82.2	83.0	85.8	35.9	40.3	70.6
Ireland	Unemployment rates	18.9	9.7	4.9	18.0	8.5	4.3	21.6	11.0	5.8
	Labour force participation rates	58.0	72.8	86.9	81.7	93.2	94.3	31.2	58.3	78.9
	Employment/population ratios	47.0	65.8	82.7	67.0	85.3	90.2	24.4	51.9	74.3
Italy	Unemployment rates	8.4	7.5	6.4	6.4	5.3	4.4	12.8	10.5	9.3
	Labour force participation rates	54.1	77.1	87.9	77.2	87.7	92.0	32.7	66.0	82.6
	Employment/population ratios	49.5	71.3	82.2	72.2	83.1	88.0	28.5	59.1	75.0
Netherlands	Unemployment rates	8.2	4.8	4.3	7.1	3.7	3.6	9.8	6.4	5.2
	Labour force participation rates	55.9	77.1	85.5	76.1	86.9	90.3	40.1	65.6	79.0
	Employment/population ratios	51.3	73.4	81.9	70.6	83.7	87.0	36.2	61.4	74.9

Table D. **Unemployment, labour force participation rates and employment/population ratios by educational attainment for persons aged 25-64, 1994** *(cont.)*

Percentages

		Both sexes			Men			Women		
		Less than upper secondary education	Upper secondary education	Tertiary level education	Less than upper secondary education	Upper secondary education	Tertiary level education	Less than upper secondary education	Upper secondary education	Tertiary level education
New Zealand	Unemployment rates	9.3	5.3	2.9	11.1	5.3	2.6	7.2	5.3	3.2
	Labour force participation rates	66.3	83.6	85.2	80.3	90.7	94.0	55.7	71.9	78.3
	Employment/population ratios	60.2	79.1	82.7	71.4	85.9	91.6	51.7	68.2	75.8
Norway	Unemployment rates	6.5	4.7	2.3	7.2	5.3	2.8	5.6	4.1	1.7
	Labour force participation rates	64.5	83.3	90.2	74.6	89.2	92.9	54.6	77.3	87.3
	Employment/population ratios	60.3	79.3	88.2	69.2	84.5	90.3	51.6	74.1	85.8
Portugal	Unemployment rates	6.0	6.2	2.5	5.2	4.5	2.7	7.0	8.2	2.3
	Labour force participation rates	71.6	84.3	92.4	85.5	88.6	94.0	58.9	79.8	91.2
	Employment/population ratios	67.3	79.1	90.1	81.1	84.6	91.5	54.8	73.2	89.1
Spain	Unemployment rates	21.3	19.4	15.0	17.6	14.1	10.8	28.7	27.6	20.5
	Labour force participation rates	58.1	80.3	87.3	81.7	91.4	91.9	36.6	67.6	82.0
	Employment/population ratios	45.7	64.8	74.2	67.3	78.6	81.9	26.1	49.0	65.2
Sweden	Unemployment rates	8.8	7.6	3.6	9.6	8.9	4.0	7.7	6.2	3.3
	Labour force participation rates	86.2	90.2	92.5	90.6	91.9	92.9	81.0	88.5	92.2
	Employment/population ratios	78.6	83.3	89.2	81.8	83.7	89.2	74.8	83.0	89.2
Switzerland	Unemployment rates	5.1	3.4	3.0	4.7	3.4	2.3	5.5	3.5	5.4
	Labour force participation rates	71.6	81.4	91.0	93.4	94.9	95.7	61.6	69.5	77.6
	Employment/population ratios	67.9	78.6	88.3	89.1	91.7	93.5	58.2	67.1	73.4
Turkey	Unemployment rates	6.0	7.1	4.1	6.2	5.0	3.6	5.5	16.7	5.5
	Labour force participation rates	62.5	72.7	88.9	88.4	91.2	92.6	28.2	38.6	80.8
	Employment/population ratios	58.8	67.5	85.3	82.9	86.6	89.3	26.6	32.2	76.4
United Kingdom	Unemployment rates	13.0	8.3	3.9	18.8	9.6	4.6	8.2	6.5	3.1
	Labour force participation rates	63.8	82.1	89.3	75.1	89.5	93.4	56.6	73.5	84.7
	Employment/population ratios	55.5	75.2	85.8	61.0	80.9	89.1	52.0	68.7	82.1
United States	Unemployment rates	12.6	6.2	3.2	12.8	6.5	3.2	12.4	5.8	3.1
	Labour force participation rates	58.3	79.4	87.8	71.5	87.9	93.0	44.7	71.8	82.2
	Employment/population ratios	51.0	74.5	85.0	62.4	82.2	90.0	39.2	67.6	79.6

Source: OECD, *Education at a Glance – Indicators,* 1996.

Table E. **Incidence and composition of part-time employment, national definitions, 1983-1996**

Percentages

	Part-time employment as a proportion of employment									
	Men					Women				
	1983	1990	1994	1995	1996	1983	1990	1994	1995	1996
Australia	6.2	8.0	10.9	11.1	11.7	36.4	40.1	42.6	42.7	42.6
Austria	1.5	1.5	3.0	4.0	4.2	20.0	20.1	25.2	26.9	28.8
Belgium	2.0	2.0	2.5	2.8	3.0	19.7	25.9	28.3	29.8	30.5
Canada	8.7	9.1	10.7	10.6	10.7	28.1	26.8	28.6	28.2	28.9
Czech Republic	..	..	3.6	3.0	3.0	..	..	9.7	10.4	9.8
Denmark	6.5	10.4	10.0	10.4	10.8	43.7	38.4	34.4	35.4	34.5
Finland	4.4	4.5	6.1	5.6	5.3	11.3	10.2	11.2	11.1	10.9
France	2.5	3.3	4.6	5.0	5.3	20.1	23.6	27.8	28.9	29.5
Germany	1.7	2.6	3.2	3.6	..	30.0	33.8	33.1	33.8	..
Greece	3.7	2.2	3.1	2.8	..	12.1	7.6	8.0	8.4	..
Hungary	..	..	..	2.6	2.5	..	..	..	7.6	8.0
Iceland[a]	..	8.8	10.7	11.5	11.0	..	48.4	47.0	47.6	47.4
Ireland	2.7	3.4	5.1	5.4	5.0	15.6	17.6	21.7	23.1	22.1
Italy	2.4	2.4	2.8	2.9	3.1	9.4	9.6	12.4	12.7	12.7
Japan	7.1	9.3	11.5	9.9	11.5	29.2	32.8	35.1	34.2	36.0
Korea	..	..	..	..	..	..	..	..	..	..
Luxembourg	1.3	1.9	1.3	1.1	1.7	17.8	16.2	19.5	20.3	18.4
Mexico[a]	..	18.9	19.3	18.6	16.9	..	36.4	38.2	39.3	38.0
Netherlands	6.8	14.8	16.1	16.8	16.1	49.7	59.3	66.0	67.2	66.1
New Zealand	5.0	8.4	9.7	10.0	10.4	31.4	35.0	36.6	36.1	37.3
Norway	11.6	8.6	9.3	9.3	10.1	54.9	47.5	46.4	46.5	45.7
Poland[b]	..	9.3	8.4	8.3	8.2	..	13.1	13.2	13.3	13.4
Portugal	..	3.4	4.7	4.2	5.1	..	9.4	12.1	11.6	13.0
Spain	..	1.6	2.6	2.7	3.1	..	12.1	15.2	16.6	17.0
Sweden	6.2	7.4	9.7	9.4	9.3	45.9	40.4	41.0	40.3	39.0
Switzerland[a]	..	7.7	8.2	8.1	8.3	..	49.1	53.0	52.9	52.2
Turkey	..	13.5	16.2	14.3	17.6	..	36.8	41.2	34.3	38.7
United Kingdom	3.3	5.2	7.1	7.7	5.6	41.3	42.6	44.3	44.3	42.7
United States	10.8	10.1	11.5	11.0	10.9	28.1	25.2	27.7	27.4	26.9
	Part-time employment as a proportion of total employment					Women's share in part-time employment				
	1983	1990	1994	1995	1996	1983	1990	1994	1995	1996
Australia	17.5	21.3	24.4	24.8	25.0	78.0	78.1	74.2	74.4	73.4
Austria	8.4	8.9	12.1	13.9	14.9	88.4	89.7	85.3	83.8	84.2
Belgium	8.0	10.9	12.8	13.6	14.0	84.0	88.6	88.1	87.5	87.4
Canada	16.8	17.0	18.8	18.6	18.9	69.8	70.1	68.8	68.8	69.1
Czech Republic	..	..	6.4	6.2	5.9	..	..	70.0	73.3	71.9
Denmark	23.3	23.3	21.2	21.6	21.5	84.7	75.7	74.4	73.3	72.2
Finland	7.7	7.2	8.6	8.2	8.0	70.1	67.4	63.2	64.7	64.3
France	9.6	11.9	14.9	15.6	16.0	84.3	83.8	82.7	82.0	81.7
Germany	12.6	15.2	15.8	16.3	..	91.9	89.7	88.1	87.4	..
Greece	6.5	4.1	4.8	4.8	..	61.2	64.9	58.9	62.7	..
Hungary	..	..	..	4.9	4.9	..	..	..	70.5	72.3
Iceland[a]	..	26.8	27.7	28.3	27.9	..	82.1	79.3	78.4	78.8
Ireland	6.7	8.1	11.3	12.1	11.6	71.6	72.2	71.5	72.0	73.3
Italy	4.6	4.9	6.2	6.4	6.6	64.8	67.3	71.1	70.6	69.4
Japan	15.8	18.8	21.0	19.8	21.4	72.9	70.7	67.5	70.1	68.0
Korea	..	..	..	..	..	..	..	..	..	..
Luxembourg	6.8	6.9	8.0	7.9	7.6	86.7	82.2	89.5	91.0	88.0
Mexico[a]	..	24.2	25.3	25.3	23.8	..	45.6	47.8	50.0	51.9
Netherlands	21.0	31.6	36.4	37.4	36.5	78.4	70.8	73.8	73.6	73.8
New Zealand	15.3	20.0	21.6	21.5	22.4	79.8	76.4	75.0	74.0	74.3
Norway	29.6	26.3	26.4	26.5	26.5	77.2	81.6	80.8	80.5	79.3
Poland[b]	..	11.0	10.6	10.6	10.6	..	53.6	56.6	56.9	57.2
Portugal	..	5.9	8.0	7.5	8.7	..	66.5	67.1	69.1	67.2
Spain	..	4.9	6.9	7.5	8.0	..	78.0	74.9	76.3	74.5
Sweden	24.8	23.3	24.9	24.3	23.6	86.6	83.5	80.1	80.1	79.5
Switzerland[a]	..	25.4	27.4	27.3	27.4	..	82.3	82.8	82.9	82.8
Turkey	..	20.6	23.6	20.3	23.9	..	54.4	51.7	50.9	48.3
United Kingdom	18.9	21.3	23.8	24.0	22.1	89.6	86.2	83.6	82.3	86.0
United States	18.4	16.9	18.9	18.6	18.3	66.8	67.2	67.3	68.0	67.9

a) 1990 refers to 1991.
b) 1990 refers to 1992.
Notes, sources and definitions: See OECD Labour Market and Social Policy Occasional Papers No. 21, *The Definitions of Part-time Work for the Purpose of International Comparisons* (forthcoming).

Table F. **Incidence and composition of part-time employment defined as usually working less than 30 hours per week, 1983-1996**

Percentages

	Part-time employment as a proportion of employment									
	Men					Women				
	1983	1990	1994	1995	1996	1983	1990	1994	1995	1996
Australia[a, b]	18.3	18.6	19.6	19.7	20.9	41.8	44.1	45.4	45.4	46.1
Austria	..	..	..	3.1	2.6	..	..	..	21.6	21.7
Belgium	3.1	4.3	4.4	4.3	4.3	22.2	28.7	29.8	29.7	30.0
Canada	..	..	..	..	..	..	..	..	..	..
Czech Republic[b]	..	..	..	1.8	1.9	..	..	..	5.4	5.2
Denmark	6.5	9.9	9.6	9.6	10.2	34.5	29.3	26.0	25.4	24.2
Finland	4.5	4.5	6.2	5.6	5.5	12.5	10.3	11.4	11.3	11.2
France	2.9	3.7	4.5	4.7	4.8	17.6	19.6	22.1	22.3	22.1
Germany			3.0	3.4	..	..	..	28.0	29.1	..
Greece	4.2	4.0	4.9	4.6	4.7	12.6	11.5	13.0	13.2	13.7
Hungary	..	..	..	1.9	1.8	..	..	..	4.6	4.6
Iceland[a, c]	..	8.5	9.5	10.1	7.9	..	49.1	46.6	47.5	42.7
Ireland	2.9	3.8	5.4	5.7	5.7	16.7	19.5	23.2	25.0	25.2
Italy	3.7	3.8	4.2	4.8	4.7	16.4	17.9	20.6	21.1	20.9
Japan[b, c, d]	8.8	10.8	13.0	11.5	13.0	29.5	34.4	36.7	35.9	37.7
Korea[b, e]	..	3.7	3.7	3.5	3.3	..	7.0	7.6	7.5	7.6
Luxembourg	1.3	1.6	1.9	1.9	2.1	19.5	19.1	25.7	27.8	24.7
Mexico	..	..	..	9.6	8.3	..	..	..	30.9	28.5
Netherlands	5.6	13.4	11.0	11.4	11.3	44.7	52.5	54.1	54.2	55.4
New Zealand[b, c]	..	8.4	9.7	10.0	10.6	..	35.0	36.6	36.1	37.4
Norway[b]	..	12.0	11.7	11.7	12.3	..	48.8	46.3	46.2	46.3
Poland	..	..	..	..	..	..	..	..	..	..
Portugal	..	2.9	4.9	3.8	4.5	..	11.5	15.2	14.5	15.1
Spain	..	1.4	2.4	2.5	2.9	..	11.5	14.4	15.9	16.2
Sweden	..	5.3	7.1	6.8	6.7	..	24.5	24.9	24.1	23.5
Switzerland[a]	..	7.6	7.3	7.2	8.6	..	43.1	46.1	46.1	46.3
Turkey	..	5.0	5.2	4.0	2.9	..	20.4	19.4	13.9	12.7
United Kingdom	3.3	5.3	6.9	7.3	5.2	40.1	39.5	41.0	40.5	38.9
United States[c]	9.1	8.3	8.0	7.8	7.7	22.9	20.0	19.5	19.3	19.1
	Part-time employment as a proportion of total employment					Women's share in part-time employment				
	1983	1990	1994	1995	1996	1983	1990	1994	1995	1996
Australia[a, b]	27.1	29.1	30.6	30.8	31.8	57.6	62.7	63.2	63.5	62.6
Austria	..	..	..	11.1	10.9	..	..	..	84.2	86.4
Belgium	9.7	13.5	14.5	14.5	14.6	78.8	79.9	81.9	82.3	82.4
Canada	16.8	17.0	18.8	18.6	18.9	..	..	..	..	..
Czech Republic[b]	..	..	..	3.4	3.3	..	..	..	70.3	67.4
Denmark	19.2	18.8	17.1	16.7	16.5	81.3	71.5	69.6	68.1	65.9
Finland	8.4	7.3	8.7	8.4	8.3	71.7	67.8	63.6	65.1	65.1
France	8.9	10.4	12.3	12.5	12.5	81.0	79.8	79.5	79.1	78.7
Germany	..	..	13.5	14.2	..	..	..	87.1	86.3	..
Greece	6.9	6.6	7.8	7.7	8.0	59.4	61.1	59.2	61.4	62.5
Hungary	..	..	..	3.2	3.1	..	..	..	67.6	69.6
Iceland[a, c]	..	28.9	28.6	29.4	25.4	..	85.4	83.8	83.4	84.4
Ireland	7.1	9.0	12.0	13.0	13.2	71.6	71.8	71.7	72.4	73.2
Italy	7.8	8.6	10.0	10.5	10.5	67.4	70.8	72.6	70.8	71.5
Japan[b, c, d]	17.5	20.3	22.6	21.3	23.0	69.5	68.6	65.8	68.1	66.3
Korea[b, e]	..	5.1	5.3	5.1	5.1	..	56.2	58.6	59.4	61.0
Luxembourg	7.3	7.6	10.7	11.1	10.4	88.3	86.6	88.6	89.2	87.3
Mexico	..	..	..	16.4	14.9	..	..	..	60.1	62.4
Netherlands	18.5	28.2	26.5	27.3	29.3	79.6	70.4	83.0	80.7	77.2
New Zealand[b, c]	..	20.0	21.6	21.5	22.5	..	76.3	74.9	73.9	74.0
Norway[b]	..	28.6	27.6	27.5	27.9	..	76.9	76.9	76.8	76.0
Poland	..	..	..	..	..	..	..	..	..	..
Portugal	..	6.5	9.5	8.6	9.2	..	74.0	71.3	75.3	72.9
Spain	..	4.6	6.5	7.1	7.5	..	79.5	75.5	77.1	75.1
Sweden	..	14.5	15.8	15.1	14.8	..	81.1	76.8	76.8	76.5
Switzerland[a]	..	22.8	23.9	23.8	25.0	..	80.7	82.4	83.0	80.6
Turkey	..	9.5	9.3	6.9	5.8	..	62.6	60.3	59.2	63.7
United Kingdom	18.4	20.1	22.2	22.2	20.3	89.3	85.1	82.9	81.8	85.7
United States[c]	15.4	13.8	13.5	13.3	13.2	68.0	68.2	69.0	69.3	69.8

a) 1990 refers to 1991.
b) Data refer to actual hours worked.
c) Employees.
d) Less than 35 hours per week.
e) Civilian employment.
Notes, sources and definitions: See Table E.

Table G. **Average annual hours actually worked per person in employment**[a]

	1973	1979	1983	1990	1993	1994	1995	1996
Total employment								
Australia	..	1 904	1 852	1 869	1 874	1 879	1 876	1 867
Canada	1 867	1 802	1 731	1 738	1 718	1 735	1 737	1 732
Czech Republic	..	..	..	..	..	..	2 065	2 072
Finland[b]	..	..	1 809	1 764	1 744	1 780	1 775	1 790
Finland[c]	1 915	1 868	1 821	1 764	1 754	1 768	1 773	..
France	1 904	1 813	1 711	1 668	1 639	1 635	1 638	1 645
Germany	..	..	..	..	1 607	1 602	1 583	1 578
Western Germany	1 868	1 764	1 724	1 610	1 584	1 580	1 563	1 560
Italy	1 885	1 788	1 764	..	..	..	..	..
Japan	2 201	2 126	2 095	2 031	1 905	1 898	..	..
Mexico	..	..	..	..	1 804	..	1 834	1 955
New Zealand	..	..	..	1 820	1 844	1 851	1 843	1 838
Norway	1 712	1 516	1 485	1 432	1 434	1 430	1 417	1 410
Portugal	..	..	..	..	2 000	2 009	..	..
Spain	..	2 022	1 912 |	1 824	1 815	1 815	1 814	1 810
Sweden	1 557	1 451	1 453	1 480	1 501	1 532	1 544	1 554
Switzerland	..	..	..	..	1 633	1 639	1 643	..
United Kingdom	1 929	1 821	1 719	1 773	1 715	1 728 |	1 735	1 732
United States	1 924	1 905	1 882	1 943	1 946 |	1 945	1 952	1 951
Dependent employment								
Canada	1 814	1 757	1 708	1 718	1 704	1 720	1 726	1 721
Czech Republic	..	..	..	..	..	..	1 984	1 990
Finland[b]	..	..	..	1 668	1 635	1 674	1 673	1 692
France	1 771	1 667	1 558	1 539	1 521	1 520	1 523	1 529
Western Germany	1 804	1 699	1 686	1 562	1 532	1 530	1 513	1 508
Italy	1 842	1 748	1 724	1 694	1 687	1 682	..	..
Japan[d]	2 184	2 114	2 098	2 052	1 913	1 904	1 909	1 919
Japan[e]	..	..	..	2 064	1 920	1 910	1 910	1 919
Mexico	..	..	..	..	1 921	..	1 933	2 006
Netherlands	1 724	1 591	1 530	1 433	1 404	1 388	1 383	1 372
Spain	..	1 936	1 837 |	1 762	1 748	1 746	1 749	1 747
United States	1 896	1 884	1 866 |	1 936	1 939 |	1 947	1 953	1 951

a) The concept used is the total number of hours worked over the year divided by the average numbers of people in employment. The data are intended for comparisons of trends over time; they are unsuitable for comparisons of the level of average annual hours of work for a given year, because of differences in their sources. Part-time workers are covered as well as full-time.
b) Data estimated from the Labour Force Survey.
c) Data estimated from National Accounts; total employment figure for 1994 is preliminary.
d) Data refer to establishments with 30 or more regular employees.
e) Data refer to establishments with 5 or more regular employees.

Sources and definitions:

Australia: Working estimates compiled by the Australian Bureau of Statistics solely for the purpose of measuring growth rates of hours worked in the context of the National Accounts. Derived from holidays in those weeks. The estimates therefore exclude the effects of both public holidays and school holidays, and are considered to be (consistently) biased upwards. Data revised.

Canada: Data for all workers and paid workers supplied by Statistics Canada, based mainly on the monthly Labour Force Survey supplemented by the Survey of Employment Payrolls and Hours, the annual Survey of Manufacturers and the Census of Mining.

Czech Republic: Data supplied by the Czech Statistical Office and based on the quarterly Labour Force Sample Survey.

Finland: Data supplied by Statistics Finland. National Accounts series based on an establishment survey for manufacturing, and the Labour Force Survey for other sectors and for the self-employed. Alternative series based solely on the Labour Force Survey.

France: Data supplied by Institut National de la Statistique et des Études Économiques, produced within the framework of the National Accounts. Data for 1992 to 1994 have been revised slightly.

Germany: Data supplied by the Institut für Arbeitsmarkt- und Berufsforschung, calculated within a comprehensive accounting structure, based on establishment survey estimates of weekly hours worked by full-time workers whose hours are not affected by absence, and extended to annual estimates of actual hours by adjusting for a wide range of factors, including public holidays, sickness absence, overtime working, short-time working, bad weather, strikes, part-time working and parental leave.

Italy: Data for total employment provided by ISTAT, based on a special establishment survey discontinued in the mid-1980s. For dependent employment, data for 1983 to 1994 supplied by Eurostat and from 1960 to 1982 trend in data is taken from the total employment series.

Japan: Data for total employment are Secretariat estimates based on data from the Monthly Labour Survey of Establishments, extended to agricultural and government sectors and to the self-employed by means of the Labour Force Survey. Data for dependent employment supplied by Statistics Bureau, Management and Coordination Agency, from the Monthly Labour Survey, referring to all industries excluding agriculture, forest, fisheries and government services.

Mexico: Data supplied by STPS-INEGI from the bi-annual National Survey of Employment, based on the assumption of 44 working weeks per year.

Netherlands: From 1977 onwards, figures are "Annual Contractual Hours", supplied by Statistics Netherlands, compiled within the framework of the Labour Accounts. Overtime hours are excluded. For 1970 to 1976, the trend has been derived from data supplied by the Economisch Instituut voor het Midden en Kleinbedrijf, referring to persons employed in the private sector, excluding agriculture and fishing.

New Zealand: Data supplied by Statistics New Zealand and derived from the quarterly Labour Force Survey, whose continuous sample design avoids the need for adjustments for public holidays and other days lost. Total employment figures revised slightly.

Norway: Data supplied by Statistics Norway, based on National Accounts and estimated from a number of different data sources, the most important being establishment surveys, the Labour Force Surveys and the public sector accounts. For 1988 to 1995, data revised due to major revision of National Accounts; for earlier years, trend in data taken from old series.

Portugal: Data derived from the quarterly Labour Force Survey, whose continuous sample design avoids the need for adjustments for public holidays and other days lost, supplied by Ministério do Emprego e da Segurança Social.

Spain: New series supplied by Instituto Nacional de Estadistica and derived from the quarterly Labour Force Survey. Series break at 1986/87 due to changes in the survey.

Sweden: Series supplied by Statistics Sweden derived from National Accounts data, based on both the Labour Force Survey and establishment surveys. Figures for 1993 to 1994 revised slightly.

Switzerland: Data supplied by Office fédéral de la statistique. The basis of the calculation is the Swiss Labour Force Survey which provides information on weekly hours of work during one quarter of the year. The estimates of annual hours are based also on supplementary, annual information on vacations, public holidays and overtime working and have been extended to correspond to National Accounts concepts.

United Kingdom: Figures refer to Great Britain. Break in series 1994/95 due to small change in the way estimates of employment are derived. For 1992 to 1995, the levels are derived directly from the continuous Labour Force Survey. For 1984 to 1991, the trend in the data is taken from the annual Labour Force Survey. From 1970 to 1983, the trend corresponds to estimates by Professor Angus Maddison.

United States: Data supplied by the Bureau of Labor Statistics, on hours paid for non-farm business employees from the Current Employment Statistics programme converted to hours actually worked by means of the annual Hours at Work Survey, and extended to the whole economy by means of the Current Population Survey. Series breaks at 1975/76 and 1989/90 due to changes in population controls and at 1993/94 due to redesigned CPS questionnaire.

Table H. **Incidence of long-term unemployment from survey-based data in selected OECD countries**[a, b, c, d, e]

As a per cent of total unemployment

	1983		1990		1994		1995		1996	
	6 months and over	12 months and over	6 months and over	12 months and over	6 months and over	12 months and over	6 months and over	12 months and over	6 months and over	12 months and over
Australia	52.7	27.5	41.1	21.6	56.9	36.3	51.4	30.8	48.7	28.4
Austria	..	..	..	..	..	..	42.8	27.5	42.5	25.6
Belgium	82.6	64.8	81.4	68.7	75.2	58.3	77.7	62.4	77.3	61.3
Canada	28.5	9.7	18.8	5.7	30.9	15.2	27.8	14.1	27.7	13.9
Czech Republic	..	..	..	..	40.9	21.6	52.5	30.6	52.4	31.6
Denmark	67.2	44.3	53.3	30.0	54.0	32.1	46.8	28.1	44.4	26.5
Finland[f]	30.0	19.2	32.6	9.2	52.8	30.6	54.3	37.0	55.3	35.9
France	67.0	42.2	55.5	38.0	61.7	38.3	64.0	42.3	61.5	39.5
Germany	65.8	41.6	64.7	46.8	63.8	44.3	65.4	48.3	..	..
Greece	58.4	33.2	71.9	49.8	72.8	50.5	72.4	51.2	..	..
Hungary	..	..	..	..	62.6	41.3	73.0	50.6	75.2	54.4
Iceland[g]	..	..	15.6	6.3	31.4	14.3	33.3	17.5	30.8	19.2
Ireland	64.0	36.7	81.0	66.0	80.7	64.3	77.9	61.4	75.7	59.5
Italy	82.5	58.2	85.2	69.8	79.5	61.5	80.2	63.6	80.8	65.6
Japan	32.6	13.2	38.5	19.6	35.2	17.1	38.4	18.2	40.7	19.9
Korea	..	..	14.7	3.7	20.6	5.4	17.9	4.3	16.0	4.2
Luxembourg[h]	(56.3)	(35.4)	(66.7)	(42.9)	(54.7)	(29.6)	(49.2)	(23.2)	(44.6)	(27.6)
Mexico	..	..	..	..	..	..	8.0	1.5	9.8	2.2
Netherlands	70.7	48.8	63.6	49.3	77.5	49.4	80.4	46.8	81.4	49.0
New Zealand	..	..	32.7	15.5	42.7	26.0	37.1	20.2	31.9	16.9
Norway	20.3	6.3	40.4	19.2	43.0	27.8	43.3	26.5	29.9	14.0
Poland	..	..	..	..	65.1	40.3	63.0	40.0	62.9	39.1
Portugal	..	..	62.4	44.8	57.2	43.4	65.1	50.9	66.7	53.1
Spain	72.8	52.4	70.2	54.0	73.4	56.1	72.8	56.9	72.2	55.7
Sweden	24.9	10.3	15.8	4.7	38.5	17.3	35.6	15.8	38.4	17.1
Switzerland	..	..	..	..	50.3	29.3	50.8	33.3	52.5	25.9
Turkey	..	..	72.6	47.0	68.5	45.4	60.3	36.3	65.9	43.5
United Kingdom	66.4	45.6	50.3	34.4	63.4	45.4	60.8	43.6	58.1	39.8
United States	23.9	13.3	10.0	5.5	20.3	12.2	17.3	9.7	17.4	9.5

a) While data from Labour Force Surveys make international comparisons easier, compared to a mixture of survey and registration data, they are not perfect. Questionnaire wording and design, survey timing, differences across countries in the age groups covered, and other reasons mean that care is required in interpreting cross-country differences in levels.

b) The duration of unemployment data base maintained by the Secretariat is composed of detailed duration categories disaggregated by age and sex. All totals are derived by adding each component. Thus, the total for men is derived by adding the number of unemployed men by each duration and age group category. Since published data are usually rounded to the nearest thousand, this method sometimes results in slight differences between the percentages shown here and those that would be obtained using the available published figures.

c) Data are averages of monthly figures for Canada, Sweden and the United States, averages of quarterly figures for Czech Republic, Hungary, Korea, Norway, New Zealand, Poland and Spain, and averages of semi annual figures for Iceland and Turkey. The reference period for the remaining countries is as follows (among EU countries it occasionally varies from year to year): Australia, August; Austria, April; Belgium, April; Denmark, April-May; Finland, autumn; France, March; Germany, April; Greece, March-July; Ireland, May; Italy, April; Japan, February; Luxembourg, April; Mexico, April; Netherlands, March-May; Portugal, February-April; Switzerland, second quarter; and the United Kingdom, March-May.

d) Data refer to persons aged 15 and over in Australia, Austria, Belgium, Canada, Czech Republic, Denmark, France, Germany, Greece, Iceland, Ireland, in Italy, Japan, Korea, Luxembourg, Mexico, Netherlands, New Zealand, Poland, Portugal, Switzerland and Turkey; and aged 16 and over in Spain, the United Kingdom and the United States. Data for Finland refer to persons aged 15-64 (excluding unemployment pensioners). Data for Hungary refer to persons aged 15-74, data for Iceland and Norway refer to persons aged 16-74 and data for Sweden refer to persons aged 16-64.

e) Persons for whom no duration of unemployment was specified are excluded.

f) 1990 refers to 1991 and 1994 refers to 1993.

g) 1990 refers to 1991.

h) Data in brackets are based on small sample sizes and, therefore, must be treated with care.

Sources:

Data for Austria, Belgium, Denmark, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal and the United Kingdom are based on the European Labour Force Survey and were supplied by Eurostat.

Australia: Australian Bureau of Statistics, The Labour Force Australia.

Canada: Unpublished data from the Labour Force Survey supplied by Statistics Canada.

Czech Republic: Data from the Labour Force Sample Survey supplied by the Czech Statistical office.

Finland: Unpublished data from the *Supplementary Labour Force Survey* (biennial since 1989) supplied by the Central Statistical Office. From 1995 onwards, data supplied by Eurostat and based on the European Labour Force Survey.

France: Institut National de la Statistique et des Études Économiques, Enquête sur l'Emploi.

Hungary: Data from the Labour Force Survey supplied by the Central Statistical Office.

Iceland: Data from the Labour Force Survey supplied by Statistics Iceland.

Japan: Statistics Bureau, Managment and Coordination Agency, report on the Special Survey of the Labour Force Survey.

Korea: Data from the Economically Active Population Survey supplied by the National Statistical Office.

Mexico: Statistics Bureau, Management and Coordination Agency, Report on the Special Survey of the Labour Force Survey.

New Zealand: Unpublished data from the household Labour Force Survey supplied by the Department of Statistics.

Norway: Unpublished data from the Labour Force Survey supplied by the Central Statistical Office.

Poland: Data from the Labour Force Survey supplied by the Central Statistical Office.

Spain: Unpublished data from the Labour Force Survey supplied by the Ministry of Employment and Social Security.

Sweden: Statistics Sweden, AKU.

Switzerland: Data from the Labour Force Survey supplied by the Swiss Federal Statistical Office.

Turkey: Data from the Household Labour Force Survey supplied by the State Institute of Statistics.

United States: Bureau of Labor Statistics, Employment and Earnings.

Table I. **Incidence of long-term unemployment from survey-based data among men**[a, b, c, d, e]

As a per cent of male unemployment

	1983		1990		1994		1995		1996	
	6 months and over	12 months and over	6 months and over	12 months and over	6 months and over	12 months and over	6 months and over	12 months and over	6 months and over	12 months and over
Australia	56.1	28.8	42.5	24.5	59.4	38.6	54.1	34.2	50.8	30.9
Austria	..	..	..	..	..	..	36.5	24.6	38.2	23.2
Belgium	79.6	58.5	79.5	66.1	72.4	53.4	76.4	61.4	75.2	58.9
Canada	30.7	11.1	19.1	6.6	32.7	17.1	29.1	15.9	28.5	15.3
Czech Republic	..	..	..	..	38.9	20.8	51.5	30.2	50.9	31.0
Denmark	61.6	39.4	48.9	27.8	52.1	31.9	51.9	31.9	44.2	28.1
Finland[f]	32.0	20.7	36.8	9.7	53.7	34.0	58.6	42.0	58.5	40.5
France	62.4	39.0	53.1	35.4	60.2	37.3	62.1	41.4	58.6	37.1
Germany	66.5	42.8	65.2	49.1	60.4	41.2	62.9	45.6	..	..
Greece	49.0	23.3	61.8	39.9	65.8	41.3	64.3	42.3	..	..
Hungary	..	..	..	..	65.0	43.6	74.0	52.0	76.8	57.0
Iceland[g]	..	..	6.7	0.0	29.7	13.5	32.4	17.6	33.3	22.2
Ireland	68.5	42.3	84.3	71.1	83.0	68.5	80.7	66.8	79.2	64.6
Italy	79.4	55.4	84.1	68.6	77.4	59.6	78.9	62.7	78.7	64.1
Japan	35.3	16.5	47.6	26.2	40.2	21.4	43.7	23.5	47.3	24.4
Korea	..	..	17.0	4.6	21.9	6.1	19.4	4.3	18.3	4.5
Luxembourg[h]	(56.5)	(34.8)	(80.0)	(60.0)	(59.6)	(33.8)	(50.6)	(26.0)	(49.0)	(30.1)
Mexico	..	..	..	..	..	..	7.4	1.3	9.7	2.1
Netherlands	68.4	48.0	65.6	55.2	74.3	50.0	78.7	51.6	81.2	53.5
New Zealand	..	..	44.1	24.5	55.1	36.7	48.2	29.6	40.2	23.8
Norway	18.2	6.1	39.7	19.0	43.5	28.1	44.4	28.6	31.6	15.8
Poland	..	..	..	..	61.8	36.8	59.4	36.2	59.4	35.3
Portugal	..	..	56.3	38.2	54.2	42.3	63.0	48.4	64.1	51.7
Spain	69.9	48.9	63.3	45.8	68.6	49.6	67.7	51.1	67.4	49.8
Sweden	25.9	10.8	16.4	5.4	40.6	19.4	37.6	17.4	40.3	18.5
Switzerland	..	..	..	..	47.4	22.4	46.8	30.6	50.0	20.8
Turkey	..	..	71.2	44.9	66.2	43.2	56.1	32.2	63.7	39.9
United Kingdom	70.7	51.2	56.8	41.8	68.6	51.2	66.2	49.6	63.5	45.9
United States	28.2	16.0	12.1	7.0	22.2	13.9	18.7	11.0	18.5	10.4

Sources and notes: See Table H.

Table J. **Incidence of long-term unemployment from survey-based data among women**[a, b, c, d, e]

As a per cent of female unemployment

	1983		1990		1994		1995		1996	
	6 months and over	12 months and over	6 months and over	12 months and over	6 months and over	12 months and over	6 months and over	12 months and over	6 months and over	12 months and over
Australia	47.0	25.3	38.8	17.8	53.1	33.0	47.4	25.6	45.4	24.8
Austria	..	..	..	..	..	..	49.4	30.6	48.1	28.8
Belgium	84.9	69.7	82.5	70.0	77.7	62.6	78.7	63.2	79.1	63.3
Canada	25.3	7.7	18.4	4.5	28.3	12.5	26.1	11.9	26.7	12.1
Czech Republic	..	..	..	..	42.6	22.2	53.3	30.9	53.7	32.1
Denmark	73.2	49.6	57.7	32.0	55.8	32.4	42.8	25.0	44.6	25.3
Finland[f]	29.1	19.0	26.3	8.4	51.3	25.7	49.6	31.5	52.0	31.0
France	70.5	44.8	57.3	40.0	63.0	39.3	65.7	43.2	64.0	41.6
Germany	65.1	40.2	64.2	44.5	67.1	47.2	68.0	51.0	..	..
Greece	67.7	43.0	78.2	55.9	78.0	57.2	78.3	57.8	..	..
Hungary	..	..	..	..	58.9	37.6	71.3	48.3	72.7	50.4
Iceland[g]	..	..	23.5	11.8	33.3	15.2	34.5	17.2	28.0	16.0
Ireland	54.9	25.6	75.0	56.8	76.8	57.4	73.2	52.3	70.1	51.2
Italy	84.9	60.4	86.0	70.7	81.5	63.3	81.5	64.4	82.8	67.1
Japan	23.1	5.1	26.3	8.8	30.5	12.2	28.8	10.0	31.1	13.3
Korea	..	..	7.6	0.0	15.9	3.3	14.4	3.6	9.8	1.5
Luxembourg[h]	(60.0)	(36.0)	(55.6)	(33.3)	(48.9)	(24.6)	(48.0)	(21.0)	(40.6)	(25.3)
Mexico	..	..	..	..	..	..	9.0	1.7	10.0	2.4
Netherlands	74.1	49.9	62.0	44.6	80.9	48.7	82.1	42.0	81.5	45.0
New Zealand	..	..	39.5	20.9	50.0	32.3	43.3	25.5	36.5	20.7
Norway	20.7	6.9	42.5	20.0	43.9	29.8	31.4	17.3	28.0	12.0
Poland	..	..	..	..	68.4	43.8	66.6	43.7	66.0	42.5
Portugal	..	..	66.4	49.4	60.1	44.3	67.2	53.4	69.2	54.4
Spain	77.7	58.5	76.5	61.5	78.4	62.9	77.5	62.6	76.7	61.3
Sweden	23.8	9.7	15.2	3.9	35.3	14.1	32.9	13.8	36.0	15.5
Switzerland	..	..	..	..	53.4	35.6	54.0	36.5	54.4	29.4
Turkey	..	..	75.6	51.2	74.3	51.0	71.1	46.9	72.3	53.6
United Kingdom	58.6	35.5	40.8	23.7	53.3	33.9	50.6	32.3	47.7	28.0
United States	17.9	9.6	7.3	3.7	18.0	10.2	15.6	8.1	16.2	8.4

Sources and notes: See Table H.

Table K. **Public expenditures and participant inflows in labour market programmes in OECD countries**

Programme categories	Australia								Austria				Belgium							
	Public expenditures as a per cent of GDP				Participant inflows as a per cent of the labour force				Public expenditures as a per cent of GDP				Public expenditures as a per cent of GDP				Participant inflows as a per cent of the labour force			
	1992-93	1993-94	1994-95	1995-96	1992-93	1993-94	1994-95	1995-96	1993	1994	1995	1996	1992	1993	1994	1995	1992	1993	1994	1995
1. Public employment services and administration	**0.24**	**0.23**	**0.20**	**0.24**					**0.12**	**0.13**	**0.13**	**0.14**	**0.19**	**0.22**	**0.23**	**0.22**				
2. Labour market training	**0.17**	**0.16**	**0.17**	**0.15**	**3.5**	**4.0**	**3.8**	**4.8**	**0.10**	**0.11**	**0.12**	**0.13**	**0.24**	**0.27**	**0.29**	**0.28**	**7.9**	**8.7**	**9.2**	**9.2**
a) Training for unemployed adults and those at risk	0.16	0.14	0.16	0.14	3.5	3.6	3.6	4.2	0.10	0.11	0.12	0.13	0.13	0.16	0.18	0.16	1.9	2.5	3.1	3.0
b) Training for employed adults	0.01	0.01	0.01	0.01	–	0.4	0.2	0.6	–	–	–	–	0.10	0.11	0.11	0.12	6.1	6.2	6.1	6.2
3. Youth measures	**0.09**	**0.08**	**0.07**	**0.06**	**1.2**	**1.2**	**1.2**	**1.3**	**0.01**	**0.01**	**0.01**	**0.01**	**–**	**–**	**0.08**	**0.08**	**–**	**–**	**0.8**	**0.7**
a) Measures for unemployed and disadvantaged youth	0.05	0.04	0.04	0.03	0.3	0.5	0.5	0.4	0.01	0.01	0.01	0.01	–	–	–	–	–	–	–	–
b) Support of apprenticeship and related forms of general youth training	0.04	0.05	0.03	0.03	0.9	0.8	0.7	0.9	–	–	–	–	–	–	0.08	0.08	–	–	0.8	0.7
4. Subsidised employment	**0.21**	**0.22**	**0.21**	**0.31**	**2.4**	**2.3**	**2.0**	**2.5**	**0.04**	**0.04**	**0.05**	**0.05**	**0.63**	**0.62**	**0.63**	**0.68**	**3.7**	**3.5**	**3.5**	**4.4**
a) Subsidies to regular employment in the private sector	0.10	0.11	0.06	0.06	1.9	1.8	1.2	1.2	0.03	0.01	0.02	0.02	0.07	0.07	0.05	0.11	0.6	0.6	0.6	1.5
b) Support of unemployed persons starting enterprises	0.01	0.02	0.03	0.03	–	0.1	0.1	0.1	–	–	–	–	–	–	–	–	–	–	–	–
c) Direct job creation (public or non-profit)	0.10	0.09	0.13	0.22	0.5	0.4	0.7	1.2	0.01	0.03	0.03	0.03	0.57	0.55	0.58	0.57	3.0	2.9	2.9	2.9
5. Measures for the disabled	**0.05**	**0.07**	**0.07**	**0.07**	**0.1**	**0.6**	**0.6**	**0.7**	**0.06**	**0.06**	**0.06**	**0.05**	**0.15**	**0.15**	**0.15**	**0.14**	**..**	**..**	**..**	**..**
a) Vocational rehabilitation	0.02	0.03	0.02	0.03	0.1	0.3	0.3	0.3	0.03	0.03	0.03	0.03	0.05	0.05	0.04	0.04	..	..	..	..
b) Work for the disabled	0.03	0.04	0.04	0.04	–	0.3	0.3	0.4	0.02	0.03	0.03	0.02	0.10	0.10	0.10	0.10	..	..	..	..
6. Unemployment compensation	**1.84**	**1.89**	**1.63**	**1.29**					**1.34**	**1.41**	**1.29**	**1.31**	**2.13**	**2.33**	**2.22**	**2.14**				
7. Early retirement for labour market reasons	**–**	**–**	**–**	**–**					**0.10**	**0.13**	**0.13**	**0.13**	**0.73**	**0.72**	**0.69**	**0.67**				
TOTAL	**2.60**	**2.64**	**2.35**	**2.14**					**1.77**	**1.89**	**1.78**	**1.81**	**4.07**	**4.30**	**4.28**	**4.22**				
Active measures (1-5)	0.76	0.75	0.72	0.84	7.2	8.0	7.6	9.2	0.33	0.35	0.36	0.38	1.21	1.25	1.37	1.41	11.6	12.3	13.4	14.3
Passive measures (6 and 7)	1.84	1.89	1.63	1.29					1.44	1.54	1.42	1.44	2.86	3.05	2.91	2.81				
For reference:																				
GDP (national currency, at current prices, 10^9)	405.3	429.2	457.6	489.0					2 124.1	2 262.9	2 352.4	2 410.9	7 142.8	7 316.6	7 678.1	7 936.0				
Labour force (10^3)					8 605	8 733	8 917	9 114									4 237	4 273	4 280	4 293

Table K. **Public expenditures and participant inflows in labour market programmes in OECD countries** *(cont.)*

Programme categories	Canada							Czech Republic								Denmark							
	Public expenditures as a per cent of GDP				Participant inflows as a per cent of the labour force			Public expenditures as a per cent of GDP				Participant inflows as a per cent of the labour force				Public expenditures as a per cent of GDP				Participant inflows as a per cent of the labour force			
	1993-94	1994-95	1995-96	1996-97	1993-94	1994-95	1995-96	1993	1994	1995	1996	1993	1994	1995	1996	1993	1994	1995	1996	1993	1994	1995	1996
1. Public employment services and administration	**0.23**	**0.22**	**0.21**	**0.20**				**0.10**	**0.11**	**0.11**	**0.10**					**0.10**	**0.12**	**0.12**	**0.12**				
2. Labour market training	**0.31**	**0.29**	**0.26**	**0.21**	**2.7**	**2.3**	**1.9**	**0.01**	**0.01**	**0.01**	**0.01**	**0.2**	**0.3**	**0.3**	**0.2**	**0.48**	**0.71**	**1.02**	**1.15**	**11.2**	**12.2**	**13.9**	**..**
a) Training for unemployed adults and those at risk	0.30	0.28	0.25	0.21	2.6	2.3	1.9	0.01	0.01	0.01	0.01	0.2	0.3	0.3	0.2	0.38	0.41	0.62	0.75	3.0	2.8	4.6	4.5
b) Training for employed adults	0.01	0.01	0.01	–	0.2	–	–	–	–	–	–	–	–	–	–	0.11	0.31	0.40	0.39	8.2	9.3	9.3	..
3. Youth measures	**0.02**	**0.02**	**0.02**	**0.03**	**0.4**	**0.5**	**0.5**	**0.03**	**0.01**	**0.01**	**0.01**	**0.1**	**0.1**	**0.1**	**0.1**	**0.37**	**0.20**	**0.17**	**0.15**	**1.9**	**1.8**	**1.7**	**2.0**
a) Measures for unemployed and disadvantaged youth	0.01	0.01	0.01	0.01	0.1	–	0.2	0.03	0.01	0.01	0.01	0.1	0.1	0.1	0.1	0.37	0.20	0.17	0.15	1.9	1.8	1.7	2.0
b) Support of apprenticeship and related forms of general youth training	0.02	0.02	0.01	0.02	0.4	0.5	0.3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
4. Subsidised employment	**0.08**	**0.07**	**0.07**	**0.08**	**0.4**	**0.4**	**0.3**	**0.04**	**0.04**	**0.03**	**0.02**	**0.5**	**0.4**	**0.3**	**0.3**	**0.50**	**0.50**	**0.40**	**0.40**	**2.8**	**1.6**	**1.2**	**1.1**
a) Subsidies to regular employment in the private sector	0.01	0.01	0.01	0.02	0.1	0.1	–	0.02	0.02	0.01	0.01	0.2	0.1	0.1	0.1	0.06	0.06	0.04	0.03	0.4	0.4	0.3	0.4
b) Support of unemployed persons starting enterprises	0.02	0.02	0.02	0.04	–	0.1	0.1	0.01	–	–	–	0.1	–	–	–	0.11	0.10	0.09	0.08	0.2	0.2	0.1	0.1
c) Direct job creation (public or non-profit)	0.06	0.04	0.03	0.03	0.2	0.2	0.2	0.02	0.02	0.02	0.01	0.2	0.2	0.2	0.2	0.33	0.34	0.28	0.29	2.2	1.1	0.8	0.7
5. Measures for the disabled	**0.03**	**0.03**	**0.02**	**0.03**	**..**	**..**	**..**	**0.01**	**0.01**	**–**	**–**	**–**	**–**	**–**	**–**	**0.52**	**0.48**	**0.43**	**0.44**	**2.7**	**2.8**	**2.9**	**..**
a) Vocational rehabilitation	0.03	0.03	0.02	0.03	..	..	..	–	–	–	–	–	–	–	–	0.35	0.31	0.29	0.29	2.7	2.8	2.9	..
b) Work for the disabled	–	–	–	–	–	–	–	0.01	0.01	–	–	–	–	–	–	0.16	0.18	0.15	0.15	–	–	–	..
6. Unemployment compensation	**1.96**	**1.54**	**1.33**	**1.31**				**0.16**	**0.18**	**0.15**	**0.15**					**4.09**	**3.75**	**3.07**	**2.55**				
7. Early retirement for labour market reasons	**0.01**	**0.01**	**0.01**	**0.01**				**–**	**–**	**–**	**–**					**1.40**	**1.40**	**1.55**	**1.81**				
TOTAL	**2.65**	**2.18**	**1.92**	**1.87**				**0.34**	**0.35**	**0.31**	**0.29**					**7.47**	**7.16**	**6.75**	**6.62**				
Active measures (1-5)	0.67	0.63	0.58	0.56	3.5	3.2	2.7	0.18	0.18	0.16	0.14	0.8	0.9	0.7	0.6	1.97	2.01	2.14	2.26	18.6	18.4	19.7	..
Passive measures (6 and 7)	1.98	1.55	1.34	1.31				0.16	0.18	0.15	0.15					5.49	5.15	4.61	4.36				
For reference:																							
GDP (national currency, at current prices, 10^9)	720.3	757.1	779.9	803.8				910.5	1 037.8	1 212.7	1 373.4					874.4	925.6	967.7	1 010.4				
Labour force (10^3)					14 780	14 947	15 038					5 172	5 215	5 254	5 294					2 893	2 777	2 762	2 745

Table K. **Public expenditures and participant inflows in labour market programmes in OECD countries** *(cont.)*

Programme categories	Finland								France								Germany							
	Public expenditures as a per cent of GDP				Participant inflows as a per cent of the labour force				Public expenditures as a per cent of GDP				Participant inflows as a per cent of the labour force				Public expenditures as a per cent of GDP				Participant inflows as a per cent of the labour force			
	1993	1994	1995	1996	1993	1994	1995	1996	1992	1993	1994	1995	1992	1993	1994	1995	1993	1994	1995	1996	1993	1994	1995	1996
1. Public employment services and administration	**0.17**	**0.17**	**0.16**	**0.16**					**0.14**	**0.15**	**0.16**	**0.15**					**0.25**	**0.24**	**0.23**	**0.24**				
2. Labour market training	**0.48**	**0.47**	**0.45**	**0.57**	**2.8**	**3.3**	**3.7**	**4.7**	**0.38**	**0.45**	**0.41**	**0.38**	**3.7**	**3.9**	**3.9**	**3.5**	**0.56**	**0.42**	**0.38**	**0.45**	**1.9**	**1.8**	**2.0**	**1.6**
a) Training for unemployed adults and those at risk	0.48	0.47	0.45	0.56	2.8	3.3	3.7	4.7	0.32	0.39	0.36	0.34	3.0	3.2	3.1	2.8	0.53	0.40	0.38	0.45	1.6	1.7	1.9	1.6
b) Training for employed adults	–	–	–	0.01	–	–	–	–	0.06	0.05	0.05	0.04	0.7	0.7	0.8	0.7	0.03	0.02	–	–	0.3	0.1	–	–
3. Youth measures	**0.11**	**0.12**	**0.16**	**0.23**	**1.5**	**1.8**	**2.0**	**2.4**	**0.26**	**0.29**	**0.28**	**0.25**	**3.2**	**2.9**	**3.1**	**2.8**	**0.07**	**0.06**	**0.06**	**0.07**	**0.6**	**0.6**	**0.7**	**0.7**
a) Measures for unemployed and disadvantaged youth	0.05	0.06	0.08	0.12	0.8	1.2	1.2	1.6	0.08	0.10	0.08	0.09	1.1	1.0	1.0	1.0	0.06	0.06	0.05	0.06	0.4	0.4	0.4	0.4
b) Support of apprenticeship and related forms of general youth training	0.06	0.06	0.08	0.11	0.7	0.6	0.8	0.9	0.17	0.19	0.19	0.17	2.1	1.9	2.1	1.9	0.01	0.01	0.01	0.01	0.2	0.2	0.2	0.3
4. Subsidised employment	**0.79**	**0.77**	**0.68**	**0.66**	**4.9**	**6.2**	**5.1**	**4.6**	**0.20**	**0.30**	**0.34**	**0.42**	**2.3**	**3.4**	**4.2**	**4.4**	**0.47**	**0.38**	**0.41**	**0.40**	**1.1**	**1.4**	**1.4**	**1.4**
a) Subsidies to regular employment in the private sector	0.16	0.15	0.11	0.08	1.3	1.9	1.2	1.1	0.07	0.09	0.11	0.16	0.9	1.5	2.0	2.3	0.07	0.06	0.07	0.07	0.1	0.1	0.3	0.2
b) Support of unemployed persons starting enterprises	0.06	0.06	0.04	0.03	0.5	0.5	0.3	0.2	0.02	0.02	0.03	0.04	0.2	0.2	0.3	0.3	–	0.01	0.02	0.03	0.1	0.1	0.2	0.2
c) Direct job creation (public or non-profit)	0.58	0.56	0.54	0.55	3.1	3.8	3.6	3.4	0.11	0.18	0.19	0.22	1.2	1.6	1.9	1.8	0.40	0.31	0.31	0.30	1.0	1.1	0.9	1.0
5. Measures for the disabled	**0.17**	**0.15**	**0.13**	**0.12**	**0.7**	**0.7**	**0.7**	**0.7**	**0.08**	**0.09**	**0.08**	**0.09**	**0.2**	**0.3**	**0.4**	**0.4**	**0.28**	**0.26**	**0.26**	**0.27**	**0.2**	**0.2**	**0.3**	**0.3**
a) Vocational rehabilitation	0.08	0.07	0.06	0.06	0.7	0.7	0.7	0.7	0.02	0.02	0.03	0.03	0.2	0.3	0.4	0.4	0.15	0.14	0.13	0.14	0.2	0.2	0.3	0.3
b) Work for the disabled	0.09	0.08	0.07	0.06	–	–	–	–	0.06	0.06	0.06	0.06	..	..	..	..	0.13	0.12	0.13	0.14	–	–	–	–
6. Unemployment compensation	**4.50**	**4.22**	**3.59**	**3.33**					**1.61**	**1.73**	**1.57**	**1.43**					**1.99**	**2.03**	**2.08**	**2.37**				
7. Early retirement for labour market reasons	**0.48**	**0.46**	**0.44**	**0.42**					**0.40**	**0.39**	**0.38**	**0.36**					**0.59**	**0.27**	**0.06**	**–**				
TOTAL	**6.70**	**6.36**	**5.63**	**5.48**					**3.07**	**3.39**	**3.23**	**3.09**					**4.20**	**3.66**	**3.48**	**3.80**				
Active measures (1-5)	1.72	1.67	1.59	1.73	10.0	11.9	11.4	12.4	1.06	1.27	1.28	1.30	9.5	10.5	11.5	11.2	1.62	1.36	1.34	1.43	3.9	4.0	4.3	3.9
Passive measures (6 and 7)	4.98	4.69	4.04	3.75					2.01	2.11	1.95	1.79					2.58	2.30	2.15	2.37				
For reference:																								
GDP (national currency, at current prices 10^9)	482.4	511.0	545.8	569.4					6 999.6	7 077.1	7 389.7	7 662.4					3 158.1	3 320.4	3 457.4	3 541.0				
Labour force (10^3)					2 508	2 502	2 521	2 531					25 124	25 202	25 373	25 469					39 587	39 628	39 394	39 294

Table K. **Public expenditures and participant inflows in labour market programmes in OECD countries** *(cont.)*

Programme categories	Greece[a]								Hungary								Ireland							
	Public expenditures as a per cent of GDP				Participant inflows as a per cent of the labour force				Public expenditures as a per cent of GDP				Participant inflows as a per cent of the labour force				Public expenditures as a per cent of GDP				Participant inflows as a per cent of the labour force			
	1992	1993	1994	1995	1992	1993	1994	1995	1992	1993	1994	1995	1992	1993	1994	1995	1991	1994	1995	1996	1991	1994	1995	1996
1. Public employment services and administration	**0.12**	**0.14**	**0.12**	**0.13**					**0.15**	**0.15**	**0.15**	**0.13**					**0.30**	**0.29**	**0.28**	**0.25**				
2. Labour market training	**0.12**	**0.08**	**0.05**	**0.09**	**1.3**	**1.3**	**1.0**	**1.4**	**0.15**	**0.23**	**0.19**	**0.13**	**1.0**	**1.3**	**1.2**	**0.8**	**0.24**	**0.24**	**0.22**	**0.23**	**4.5**	**4.7**	**4.8**	**4.1**
a) Training for unemployed adults and those at risk	0.03	0.01	0.01	0.01	0.2	0.2	0.2	0.1	0.14	0.23	0.19	0.13	1.0	1.3	1.2	0.7	0.15	0.17	0.16	0.14	1.6	1.7	1.8	1.6
b) Training for employed adults	0.09	0.07	0.04	0.08	1.1	1.2	0.8	1.3	–	–	–	–	0.1	0.0	0.1	0.1	0.10	0.07	0.06	0.08	2.9	3.0	2.9	2.5
3. Youth measures	**0.03**	**0.02**	**0.02**	**0.03**	**0.3**	**0.3**	**0.3**	**0.4**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**0.30**	**0.28**	**0.26**	**0.25**	**1.5**	**1.3**	**1.3**	**1.3**
a) Measures for unemployed and disadvantaged youth	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	0.13	0.13	0.12	0.12	0.9	0.8	0.7	0.7
b) Support of apprenticeship and related forms of general youth training	0.03	0.02	0.02	0.03	0.3	0.3	0.3	0.4	–	–	–	–	–	–	–	–	0.17	0.15	0.14	0.13	0.7	0.6	0.6	0.6
4. Subsidised employment	**0.09**	**0.07**	**0.05**	**0.07**	**0.7**	**0.6**	**0.6**	**0.6**	**0.31**	**0.28**	**0.27**	**0.17**	**2.8**	**2.3**	**3.0**	**2.7**	**0.32**	**0.70**	**0.89**	**0.93**	**1.6**	**5.2**	**5.8**	**6.2**
a) Subsidies to regular employment in the private sector	0.07	0.06	0.04	0.05	0.6	0.5	0.5	0.5	0.14	0.10	0.12	0.06	2.2	1.1	1.6	0.8	0.06	0.11	0.18	0.25	0.2	1.4	2.0	2.4
b) Support of unemployed persons starting enterprises	0.03	0.01	0.01	0.01	0.2	0.1	0.1	0.1	0.08	0.05	0.02	–	0.1	0.3	0.2	0.1	0.02	0.02	0.02	0.02	0.1	0.1	0.1	0.1
c) Direct job creation (public or non-profit)	–	–	–	–	–	–	–	–	0.09	0.13	0.14	0.11	0.4	0.9	1.2	1.9	0.24	0.57	0.70	0.67	1.3	3.6	3.8	3.7
5. Measures for the disabled	**0.01**	**0.01**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**0.15**	**0.13**	**0.09**	**0.08**	**0.2**	**0.2**	**0.1**	**0.1**
a) Vocational rehabilitation	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	0.15	0.13	0.09	0.08	0.2	0.2	0.1	0.1
b) Work for the disabled	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
6. Unemployment compensation	**0.43**	**0.41**	**0.43**	**0.44**					**2.15**	**2.02**	**1.07**	**0.72**					**2.79**	**2.87**	**2.68**	**2.42**				
7. Early retirement for labour market reasons	**–**	**–**	**–**	**–**					**0.05**	**0.11**	**0.15**	**0.19**					**0.10**	**0.17**	**0.15**	**0.14**				
TOTAL	**0.80**	**0.72**	**0.68**	**0.76**					**2.81**	**2.79**	**1.83**	**1.35**					**4.20**	**4.67**	**4.57**	**4.30**				
Active measures (1-5)	0.37	0.31	0.25	0.32	2.4	2.2	2.0	2.4	0.61	0.66	0.61	0.43	3.8	3.6	4.2	3.5	1.31	1.64	1.75	1.75	7.8	11.4	12.1	11.8
Passive measures (6 and 7)	0.43	0.41	0.43	0.44					2.21	2.13	1.22	0.92					2.89	3.04	2.82	2.55				
For reference:																								
GDP (national currency, at current prices 10^9)	18 678.0	21 106.2	23 755.8	26 486.1					2 942.6	3 548.3	4 364.8	5 493.8					28.3	34.8	38.6	41.8				
Labour force (10^3)					4 034	4 118	4 193	4 249					4 527	4 346	4 203	4 095					1 334	1 424	1 448	1 493

a) GDP has been updated to the 1968 System of National Accounts (SNA).

Table K. **Public expenditures and participant inflows in labour market programmes in OECD countries** *(cont.)*

Programme categories	Italy[a]						Japan[a]				Luxembourg[b]				Netherlands							
	Public expenditures as a per cent of GDP		Participant inflows as a per cent of the labour force				Public expenditures as a per cent of GDP				Public expenditures as a per cent of GDP				Public expenditures as a per cent of GDP				Participant inflows as a per cent of the labour force			
	1991	1992	1991	1992	1993	1994	1992-93	1993-94	1994-95	1995-96	1993	1994	1995	1996	1993	1994	1995	1996	1993	1994	1995	1996
1. Public employment services and administration	**0.08**	**0.08**					**0.03**	**0.03**	**0.03**	**0.03**	**0.03**	**0.03**	**0.03**	**0.03**	**0.37**	**0.39**	**0.36**	**0.36**				
2. Labour market training	**–**	**0.02**	**..**	**..**	**..**	**..**	**0.03**	**0.03**	**0.03**	**0.03**	**0.03**	**0.02**	**0.02**	**0.01**	**0.26**	**0.21**	**0.16**	**0.12**	**1.5**	**1.2**	**1.0**	**0.4**
a) Training for unemployed adults and those at risk	–	0.02	..	..	..	..	0.03	0.03	0.03	0.03	0.03	0.01	0.02	0.01	0.26	0.21	0.16	0.12	1.5	1.2	1.0	0.4
b) Training for employed adults	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
3. Youth measures	**0.61**	**0.83**	**4.1**	**3.8**	**3.6**	**3.5**	**–**	**–**	**–**	**–**	**0.07**	**0.09**	**0.07**	**0.13**	**0.08**	**0.10**	**0.09**	**0.09**	**0.8**	**0.8**	**0.8**	**0.8**
a) Measures for unemployed and disadvantaged youth	0.30	0.28	1.5	1.4	1.5	1.5	–	–	–	–	0.04	0.05	0.05	0.06	0.03	0.06	0.06	0.07	0.2	0.3	0.3	0.3
b) Support of apprenticeship and related forms of general youth training	0.32	0.55	2.6	2.3	2.1	2.0	–	–	–	–	0.03	0.04	0.02	0.07	0.04	0.04	0.03	0.03	0.6	0.5	0.5	0.5
4. Subsidised employment	**..**	**..**	**..**	**..**	**0.2**	**0.3**	**0.03**	**0.03**	**0.04**	**0.06**	**0.01**	**0.01**	**0.03**	**0.05**	**0.08**	**0.09**	**0.11**	**0.26**	**0.4**	**0.3**	**0.3**	**..**
a) Subsidies to regular employment in the private sector	..	..	..	..	0.1	0.2	0.03	0.03	0.04	0.06	0.01	0.01	0.03	0.05	0.02	0.01	0.02	0.13	0.2	0.2	0.2	..
b) Support of unemployed persons starting enterprises	..	..	..	..	..	..	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
c) Direct job creation (public or non-profit)	..	..	..	..	–	–	–	–	–	–	–	–	–	–	0.06	0.07	0.09	0.13	0.2	0.1	0.2	..
5. Measures for the disabled	**..**	**..**	**..**	**..**	**..**	**..**	**–**	**–**	**–**	**–**	**0.04**	**0.04**	**0.05**	**0.04**	**0.61**	**0.57**	**0.55**	**0.54**	**0.1**	**0.1**	**0.1**	**0.1**
a) Vocational rehabilitation	..	..	..	..	..	..	–	–	–	–	0.01	0.01	–	–	–	–	–	–	–	–	–	–
b) Work for the disabled	–	–	–	–	–	–	–	–	–	–	0.03	0.03	0.04	0.04	0.61	0.57	0.55	0.54	0.1	0.1	0.1	0.1
6. Unemployment compensation	**0.60**	**0.71**					**0.26**	**0.30**	**0.35**	**0.39**	**0.28**	**0.35**	**0.36**	**0.40**	**3.02**	**3.28**	**3.18**	**3.41**				
7. Early retirement for labour market reasons	**0.28**	**0.32**					**–**	**–**	**–**	**–**	**0.42**	**0.24**	**0.24**	**0.25**	**–**	**–**	**–**	**–**				
TOTAL	**1.58**	**1.96**					**0.34**	**0.39**	**0.45**	**0.52**	**0.88**	**0.78**	**0.80**	**0.92**	**4.42**	**4.64**	**4.45**	**4.78**				
Active measures (1-5)	0.70	0.93	..	..	..	..	0.09	0.09	0.10	0.13	0.19	0.19	0.20	0.27	1.40	1.36	1.27	1.37	2.8	2.4	2.2	..
Passive measures (6 and 7)	0.88	1.03					0.26	0.30	0.35	0.39	0.69	0.59	0.60	0.65	3.02	3.28	3.18	3.41				
For reference:																						
GDP (national currency, at current prices 10^9)	1 427.6	1 502.5					471.8	476.7	479.3	488.3	444.3	487.7	511.2	542.8	581.5	613.0	635.0	661.8				
Labour force (10^3)			24 598	24 612	23 138	23 210													7 085	7 184	7 320	7 423

a) National currency at current prices 10^{12} for Italy and Japan.
b) GDP from the 1968 SNA has been revised.

Table K. **Public expenditures and participant inflows in labour market programmes in OECD countries** *(cont.)*

Programme categories	New Zealand								Norway[a]							Poland							
	Public expenditures as a per cent of GDP				Participant inflows as a per cent of the labour force				Public expenditures as a per cent of GDP				Participant inflows as a per cent of the labour force			Public expenditures as a per cent of GDP				Participant inflows as a per cent of the labour force			
	1992-93	1993-94	1994-95	1995-96	1992-93	1993-94	1994-95	1995-96	1993	1994	1995	1996	1993	1994	1995	1993	1994	1995	1996	1993	1994	1995	1996
1. Public employment services and administration	**0.14**	**0.12**	**0.12**	**0.13**					**0.17**	**0.18**	**0.18**	**0.17**				**0.02**	**0.01**	**0.01**	**0.02**				
2. Labour market training	**0.55**	**0.39**	**0.37**	**0.33**	**2.2**	**5.2**	**..**	**..**	**0.33**	**0.28**	**0.23**	**0.19**	**3.5**	**3.6**	**2.8**	**0.03**	**0.03**	**0.02**	**0.02**	**0.4**	**0.5**	**0.5**	**0.5**
a) Training for unemployed adults and those at risk	0.55	0.39	0.37	0.33	2.2	5.2	..	..	0.33	0.28	0.23	0.19	3.5	3.6	2.8	0.03	0.03	0.02	0.02	0.4	0.5	0.5	0.5
b) Training for employed adults	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
3. Youth measures	**0.05**	**0.07**	**0.09**	**0.09**	**0.4**	**0.3**	**..**	**..**	**0.11**	**0.11**	**0.08**	**0.06**	**..**	**..**	**..**	**0.09**	**0.07**	**0.08**	**0.10**	**1.9**	**1.5**	**1.9**	**1.9**
a) Measures for unemployed and disadvantaged youth	0.02	0.03	0.02	0.02	0.1	0.1	..	..	0.11	0.11	0.08	0.06	..	..	..	–	0.01	0.02	0.03	–	–	0.1	0.2
b) Support of apprenticeship and related forms of general youth training	0.03	0.04	0.07	0.08	0.3	0.3	..	..	–	–	–	–	..	..	..	0.08	0.06	0.06	0.06	1.8	1.5	1.7	1.7
4. Subsidised employment	**0.24**	**0.19**	**0.15**	**0.13**	**2.7**	**2.7**	**..**	**..**	**0.33**	**0.28**	**0.22**	**0.16**	**..**	**0.6**	**..**	**0.20**	**0.24**	**0.21**	**0.16**	**1.2**	**1.8**	**2.0**	**1.6**
a) Subsidies to regular employment in the private sector	0.13	0.09	0.10	0.09	1.4	1.4	1.5	1.3	0.07	0.09	0.08	0.06	..	0.1	..	0.10	0.13	0.12	0.08	0.8	1.2	1.2	0.8
b) Support of unemployed persons starting enterprises	0.06	0.05	0.02	0.01	0.2	0.2	..	..	–	–	–	–	..	..	..	0.02	0.02	0.02	0.02	–	–	–	–
c) Direct job creation (public or non-profit)	0.05	0.05	0.04	0.03	1.1	1.2	0.9	0.9	0.25	0.19	0.14	0.10	..	0.6	..	0.08	0.10	0.08	0.07	0.4	0.6	0.7	0.7
5. Measures for the disabled	**0.05**	**0.05**	**0.03**	**0.03**	**1.5**	**1.5**	**..**	**1.7**	**0.21**	**0.48**	**0.64**	**0.62**	**..**	**..**	**..**	**0.05**	**0.04**	**0.01**	**0.01**	**0.2**	**0.8**	**0.1**	**0.1**
a) Vocational rehabilitation	0.01	0.01	0.01	0.01	1.5	1.5	..	0.7	0.02	0.19	0.29	0.30	..	..	..	0.01	0.01	–	–	0.2	0.3	–	–
b) Work for the disabled	0.04	0.04	0.02	0.02	..	..	..	1.1	0.19	0.29	0.34	0.32	..	..	..	0.04	0.04	0.01	0.01	–	0.4	0.1	0.1
6. Unemployment compensation	**2.07**	**1.59**	**1.28**	**1.16**					**1.49**	**1.31**	**1.10**	**0.93**				**1.72**	**1.77**	**1.88**	**1.77**				
7. Early retirement for labour market reasons	**–**	**–**	**–**	**–**					**–**	**–**	**–**	**–**				**0.15**	**0.10**	**0.05**	**0.05**				
TOTAL	**3.09**	**2.40**	**2.04**	**1.87**					**2.64**	**2.65**	**2.44**	**2.13**				**2.25**	**2.27**	**2.27**	**2.14**				
Active measures (1-5)	1.02	0.81	0.75	0.71	6.8	9.8	..	..	1.15	1.34	1.34	1.20	..	..	..	0.38	0.39	0.34	0.32	3.7	4.7	4.4	4.1
Passive measures (6 and 7)	2.07	1.59	1.28	1.16					1.49	1.31	1.10	0.93				1.87	1.87	1.93	1.82				
For reference:																							
GDP (national currency, at current prices, 10^9)	75.5	82.0	86.9	90.8					823.3	869.7	925.9	987.7				155.8	210.4	286.0	362.2				
Labour force (10^3)					1 649	1 684	1 728	1 782					2 131	2 151	2 186					17 321	17 132	17 068	17 034

a) GDP has been updated to the 1993 SNA.

Table K. **Public expenditures and participant inflows in labour market programmes in OECD countries** *(cont.)*

Programme categories	Portugal								Spain								Sweden[a]							
	Public expenditures as a per cent of GDP				Participant inflows as a per cent of the labour force				Public expenditures as a per cent of GDP				Participant inflows as a per cent of the labour force				Public expenditures as a per cent of GDP				Participant inflows as a per cent of the labour force			
	1993	1994	1995	1996	1993	1994	1995	1996	1993	1994	1995	1996	1993	1994	1995	1996	1992-93	1993-94	1994-95	1995-96	1992-93	1993-94	1994-95	1995-96
1. Public employment services and administration	**0.10**	**0.11**	**0.11**	**0.11**					**0.11**	**0.10**	**0.09**	**0.09**					**0.25**	**0.25**	**0.27**	**0.25**				
2. Labour market training	**0.26**	**0.21**	**0.19**	**0.38**	**1.4**	**2.1**	**3.7**	**..**	**0.12**	**0.23**	**0.32**	**0.35**	**..**	**0.7**	**0.8**	**0.8**	**1.09**	**0.76**	**0.77**	**0.51**	**3.7**	**4.3**	**4.4**	**3.4**
a) Training for unemployed adults and those at risk	0.04	0.05	0.05	0.06	0.2	0.5	0.2	0.1	0.09	0.17	0.24	0.26	..	0.4	0.5	0.5	1.04	0.73	0.75	0.50	3.1	3.4	3.7	2.8
b) Training for employed adults	0.22	0.16	0.15	0.32	1.2	1.6	3.5	..	0.03	0.06	0.08	0.09	..	0.2	0.3	0.3	0.04	0.03	0.02	0.02	0.6	0.9	0.7	0.6
3. Youth measures	**0.35**	**0.28**	**0.35**	**0.36**	**2.7**	**2.1**	**2.1**	**..**	**0.10**	**0.09**	**0.09**	**0.08**	**0.3**	**0.3**	**0.3**	**0.3**	**0.32**	**0.31**	**0.23**	**0.11**	**3.2**	**3.4**	**2.5**	**2.5**
a) Measures for unemployed and disadvantaged youth	0.22	0.15	0.15	0.16	1.5	1.1	1.2	1.0	0.10	0.09	0.09	0.08	0.3	0.3	0.3	0.3	0.32	0.31	0.23	0.11	3.2	3.4	2.5	2.5
b) Support of apprenticeship and related forms of general youth training	0.13	0.14	0.19	0.20	1.1	1.0	0.9	..	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
4. Subsidised employment	**0.10**	**0.05**	**0.09**	**0.12**	**0.4**	**0.7**	**0.8**	**1.0**	**0.19**	**0.17**	**0.31**	**0.14**	**1.5**	**1.2**	**1.2**	**1.5**	**0.56**	**0.87**	**0.90**	**0.67**	**3.7**	**6.6**	**6.3**	**5.5**
a) Subsidies to regular employment in the private sector	–	–	0.03	0.07	–	–	0.1	0.4	0.09	0.11	0.24	0.08	–	0.1	–	–	0.17	0.22	0.27	0.17	1.3	2.1	2.1	1.5
b) Support of unemployed persons starting enterprises	0.08	0.04	0.03	0.01	0.2	0.2	0.2	0.1	0.05	0.02	0.02	0.01	0.3	0.2	0.1	0.1	0.04	0.06	0.09	0.07	0.2	0.4	0.5	0.4
c) Direct job creation (public or non-profit)	0.02	0.01	0.03	0.03	0.1	0.5	0.5	0.5	0.06	0.04	0.05	0.05	1.1	1.0	1.0	1.3	0.35	0.58	0.54	0.43	2.2	4.1	3.7	3.6
5. Measures for the disabled	**0.05**	**0.06**	**0.05**	**0.07**	**0.2**	**0.2**	**0.2**	**0.1**	**0.01**	**0.01**	**0.01**	**0.01**	**0.1**	**0.1**	**0.1**	**0.1**	**0.86**	**0.79**	**0.82**	**0.71**	**1.1**	**1.2**	**1.4**	**0.9**
a) Vocational rehabilitation	0.05	0.05	0.04	0.05	0.1	0.1	0.1	0.1	–	–	–	–	–	–	–	–	0.12	0.09	0.10	0.08	0.7	0.7	0.8	0.6
b) Work for the disabled	–	0.01	0.01	0.03	–	–	–	–	0.01	0.01	0.01	0.01	0.1	0.1	0.1	0.1	0.74	0.70	0.72	0.62	0.4	0.6	0.6	0.3
6. Unemployment compensation	**0.82**	**0.97**	**0.88**	**0.88**					**3.45**	**3.12**	**2.47**	**2.14**					**2.65**	**2.71**	**2.52**	**2.27**				
7. Early retirement for labour market reasons	**0.11**	**0.15**	**0.08**	**0.13**					**–**	**–**	**–**	**–**					**0.06**	**0.05**	**0.02**	**–**				
TOTAL	**1.80**	**1.83**	**1.74**	**2.06**					**3.98**	**3.72**	**3.29**	**2.81**					**5.79**	**5.73**	**5.53**	**4.52**				
Active measures (1-5)	0.87	0.71	0.78	1.04	4.6	4.9	6.7	..	0.53	0.60	0.82	0.67	..	2.2	2.4	2.8	3.07	2.97	2.99	2.25	11.6	15.5	14.6	12.2
Passive measures (6 and 7)	0.94	1.12	0.96	1.02					3.45	3.12	2.47	2.14					2.71	2.76	2.54	2.27				
For reference:																								
GDP (national currency, at current prices, 10^9)	13 209.6	14 082.6	15 073.2	16 072.9					60 934.3	64 698.8	69 778.9	73 661.1					1 431.0	1 482.8	1 590.2	2 505.0				
Labour force (10^3)					4 537	4 594	4 574	4 603					15 564	15 701	15 849	16 159					4 375	4 275	4 296	4 325

a) Fiscal year used to start on 1 July. From 1997, it starts on 1 January. The 1995-96 fiscal year lasts 18 months, from 1 July 1995 to 31 December 1996. The 1995-96 GDP is for 18 months, the 1995-96 labour force is an average of the 6 quarters concerned.

Table K. **Public expenditures and participant inflows in labour market programmes in OECD countries** *(cont.)*

Programme categories	Switzerland							United Kingdom[a]								United States					
	Public expenditures as a per cent of GDP				Participant inflows as a per cent of the labour force			Public expenditures as a per cent of GDP				Participant inflows as a per cent of the labour force				Public expenditures as a per cent of GDP				Participant inflows as a per cent of the labour force	
	1993	1994	1995	1996	1993	1994	1995	1992-93	1993-94	1994-95	1995-96	1992-93	1993-94	1994-95	1995-96	1992-93	1993-94	1994-95	1995-96	1992-93	1995-96
1. Public employment services and administration	**0.11**	**0.12**	**0.11**	**0.11**				**0.22**	**0.24**	**0.22**	**0.20**					**0.08**	**0.08**	**0.07**	**0.07**		
2. Labour market training	**0.06**	**0.08**	**0.08**	**0.08**	**1.0**	**1.3**	**1.6**	**0.16**	**0.15**	**0.14**	**0.10**	**1.1**	**1.3**	**1.3**	**1.0**	**0.04**	**0.04**	**0.04**	**0.04**	**0.7**	**0.7**
a) Training for unemployed adults and those at risk	0.06	0.07	0.07	0.08	1.0	1.2	1.5	0.16	0.14	0.13	0.09	1.1	1.2	1.2	0.9	0.04	0.04	0.04	0.04	0.7	0.7
b) Training for employed adults	–	–	–	–	0.1	0.1	–	–	0.01	0.01	0.01	–	–	0.1	–	–	–	–	–	–	–
3. Youth measures	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**0.15**	**0.14**	**0.14**	**0.12**	**0.7**	**0.8**	**0.9**	**1.0**	**0.04**	**0.04**	**0.03**	**0.03**	**0.9**	**..**
a) Measures for unemployed and disadvantaged youth	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	0.04	0.04	0.03	0.03	0.8	0.4
b) Support of apprenticeship and related forms of general youth training	–	–	–	–	–	–	–	0.15	0.14	0.14	0.12	0.6	0.8	0.8	1.0	–	–	–	–	0.1	..
4. Subsidised employment	**0.01**	**0.05**	**0.09**	**0.17**	**0.3**	**0.6**	**0.7**	**0.04**	**0.02**	**0.03**	**0.02**	**0.1**	**0.2**	**0.3**	**0.1**	**0.01**	**0.01**	**0.01**	**0.01**	**0.3**	**..**
a) Subsidies to regular employment in the private sector	–	0.01	0.01	0.01	–	0.1	0.1	–	–	–	–	–	–	–	–	–	–	0.01	–	0.3	..
b) Support of unemployed persons starting enterprises	–	–	–	–	–	–	–	0.01	0.02	0.01	0.01	0.1	0.1	0.1	–	–	–	–	–	–	–
c) Direct job creation (public or non-profit)	0.01	0.04	0.08	0.16	0.2	0.5	0.5	0.03	–	0.01	0.01	–	0.1	0.2	0.1	0.01	0.01	0.01	–	0.1	0.1
5. Measures for the disabled	**0.20**	**0.20**	**0.20**	**0.20**	**..**	**..**	**..**	**0.03**	**0.03**	**0.03**	**0.03**	**0.1**	**0.1**	**0.2**	**0.2**	**0.04**	**0.04**	**0.04**	**0.04**	**0.8**	**..**
a) Vocational rehabilitation	0.14	0.15	0.15	0.15	..	..	..	–	–	–	–	0.1	0.1	0.1	0.1	0.04	0.04	0.04	0.04	0.8	..
b) Work for the disabled	0.07	0.06	0.05	0.04	..	..	..	0.02	0.02	0.02	0.02	0.1	0.1	0.1	0.1	–	–	–	–	–	–
6. Unemployment compensation	**1.65**	**1.42**	**1.16**	**1.29**				**1.63**	**1.61**	**1.41**	**1.33**					**0.59**	**0.43**	**0.35**	**0.34**		
7. Early retirement for labour market reasons	**–**	**–**	**–**	**–**				**–**	**–**	**–**	**–**					**–**	**–**	**–**	**–**		
TOTAL	**2.03**	**1.87**	**1.63**	**1.85**				**2.22**	**2.18**	**1.95**	**1.79**					**0.81**	**0.65**	**0.55**	**0.54**		
Active measures (1-5)	0.39	0.44	0.48	0.56	1.3	1.8	2.2	0.59	0.58	0.54	0.46	2.0	2.5	2.6	2.3	0.21	0.21	0.20	0.19	2.7	..
Passive measures (6 and 7)	1.65	1.42	1.16	1.29				1.63	1.61	1.41	1.33					0.59	0.43	0.35	0.34		
For reference:																					
GDP (national currency, at current prices, 10^9)	342.9	352.9	362.0	360.1				593.1	625.2	661.4	692.5					6 476.6	6 837.1	7 186.9	7 484.7		
Labour force (10^3)					3 934	3 917	3 912					27 581	27 516	27 416	27 327					129 155	134 652

a) Excluding Northern Ireland.

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