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OECD Employment Outlook

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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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EDITORIAL

Rewarding Work

Transfers to low-paid workers or their employers might reduce unemployment and its costs, by **making work pay…**

Would it not be better to pay people to work rather than paying them not to work? By redirecting money which currently goes to paying unemployment and other welfare benefits to reducing the costs of hiring workers in low-productivity jobs and/or increasing the incomes of those who take low-paid work, overall employment might increase. As it increases, public expenditure on support for those without work could fall. Moreover, the inclusion of more individuals into the world of work may reduce wider social problems. The incomes of those at the lower end of the distribution may also be increased in a way that may be more acceptable than via a general increase in social transfers or reduction in taxes to all those with no income from work.

... and many countries are adopting such policies, reviewed here.

Given these potential benefits, it is hardly surprising that there is a growing political interest in policies which *Make Work Pay (*MWP policies). Several countries already have them in one form or another (*e.g.* Australia, Belgium, Canada, France, Ireland, the Netherlands, New Zealand, the United Kingdom and the United States); others are considering introducing them. This editorial reviews the lessons that can be learned from MWP policies.

Despite limitations, making work pay (MWP) policies are attractive as part of a wider package…

Most people are rightly sceptical about claims that changes in one policy area alone are enough to make a dramatic difference to labour market outcomes. Indeed, there are crucial drawbacks with existing MWP policies. However, where they have been introduced the results have been encouraging. What is more, the *way* that they work – who gains – makes them attractive as part of a comprehensive *package* of measures to extend work opportunities more generally across the population, as set out in the OECD *Jobs Strategy.*

… because on the one hand they help relieve poverty, albeit to varying degrees according to their design…

The particular attraction of MWP policies is that they can promote *both* efficiency and equity by fostering employment and decent levels of *family* income. Take the effects on income distribution first: one leading example of a MWP policy, the Earned Income Tax Credit (EITC), takes 4.3 million Americans out of poverty. In the United Kingdom, nearly all the Working Families Tax Credit (WFTC) goes to increasing the income of poor households. In both countries, the group which benefits most from these schemes is lone-parent households who form a significant subset of those in poverty. In other countries, such as France, where the distribution of income is narrower than in the two countries mentioned above, MWP policies target help on low wage-earners rather than low household income (*i.e.* the focus is on individual disadvantage rather than on household or family circumstances). The effects on family income distribution of policies which aim to increase the incentives for businesses to hire low-wage workers depend on the distribution of low earnings and the size of the overlap between low pay and low family income. Given that some of those with low earnings often live in households with high incomes, MWP policies that go to them are unlikely to be strongly poverty-reducing. More generally, the very poorest in society usually do not have any earnings. Hence, if they are not able to take advantage of the expanded job opportunities provided by MWP policies, they will not see a rise in their financial resources.

… and on the other they foster employment, although most jobs supported would exist anyway.

The effects of MWP policies on employment are less certain. Large numbers of people are now covered by some existing MWP schemes (at any given time, 1 in 6 of the Dutch working population; 1 in 5 of Belgian workers; 1.5 million British households; and about 1 in 6 American families). But of course many – probably most – of these people would be working even in the absence of the schemes. Assessments of how many of these jobs would not exist were the schemes to be abolished suggest that the initial employment effect is not enormous – perhaps 5 to 10 per cent of those covered. Nonetheless, the consensus is that the existing schemes do yield worthwhile employment gains.

Targeting payments helps keep their cost down, but may encourage households to work fewer hours…

MWP policies are, of course, not "free". They must be financed by increased taxes elsewhere and/or cuts in public spending, which themselves might have negative effects on employment. The net costs of such programmes may be positive as the increase in benefits to those already working will likely be greater than the reduction in benefits to those who enter work. One way of keeping the costs of such programmes low is to *target* payments tightly. But there are unfortunate consequences associated with very tight targeting: when payments are based on household income, some of those already working face an incentive to reduce their hours worked or even (if they are in a couple where both partners are working and are earning relatively little) for one member of a couple to withdraw completely from the labour market.

… and may also lower incentives for firms and workers to invest in skills for better jobs…

In those countries whose MWP policies involve reducing payroll taxes for low-paid workers, the rapid withdrawal of subsidies means that employers have a strong incentive to resist attempts to increase wage rates. People working full-time may find that they lose little financially by working part-time and receiving an earnings supplement. More worryingly, both workers and businesses have less of an incentive to invest in skills and the work organisations using those skills. Hence, by making low-paid work more attractive relative to better paid work, the incentive to become more highly paid is reduced. Thus, MWP policies, *on their own*, run a risk that people become trapped in a low-wage job, unable to make the jump to good careers.

… yet despite these drawbacks, such policies merit emulation by other countries, under certain conditions:

These are important qualifications to the belief that MWP policies are a "win-win" formula. However, the best available evidence is that they do not alter the basic conclusion: MWP policies can create jobs and have a significant impact on the distribution of income. Is it therefore reasonable that other countries should seek to emulate the pioneers by adopting similar strategies? In many cases, the short answer is yes. But evidence from those countries that have had MWP policies in place for some time suggests that their effectiveness depends to a great extent upon a number of framework conditions that in turn affect labour demand and supply responses to policy.

• they are most effective in buoyant economies…

Most obviously, favourable macroeconomic conditions make it easier to find jobs for those drawn into looking for work by MWP policies. Aside from buoyant labour demand, the eventual success of MWP policies depends heavily on their interaction with a number of social, tax, and labour market policies and institutions, including minimum wages, the distribution of earnings, the level of taxes and benefits, and the structure of the tax system.

• they are best combined with minimum wages at judicious levels, to limit any downward effect on wages…

It is a striking fact that every country which has a *substantial* MWP programme also has a *minimum wage*. There are good reasons for combining policy instruments in this way. Governments pursuing MWP policies want to keep labour costs down and take-home pay high, so as to ensure that there is both an incentive to hire and an incentive to work. The difficulty is that the lower is the wage rate, the higher are the benefits that need to be paid-out to individuals who accept low-wage work or to employers

who hire people at those wages. In addition, MWP schemes of the in-work benefit variety have been criticised on grounds of "moral hazard", *i.e.* the possibility that merely offering such "insurance" can change behaviour in undesirable ways. While they are intended to subsidise workers' incomes, they may end up subsidising employers. In the absence of an effective wage floor, this could come about either through the benefits having such a large supply effect that wages are driven down or through collusion between firms and workers to keep wages low knowing that the government will make up the difference. A minimum wage can prevent this from happening and also raises the wage rates of some, so increasing the returns to work in the same manner as an earnings supplement. The downside is that too high a minimum wage can harm employment prospects for low-productivity workers, especially young people. If set at a judicious level, however, there are unlikely to be large negative effects on aggregate employment.

• they work best where earnings are less equal and marginal tax rates low, so the incentive to earn more is retained…

The shape of the *earnings distribution* is another key determinant of the effectiveness of MWP policies. This is an important factor in assessing whether MWP policies make sense in countries other than those which already have them. Payments must be given to low-wage workers or to working households with low incomes, and not to those with higher wages or incomes. The rate at which benefits or tax subsidies are withdrawn as earnings rise (the so-called "marginal effective tax rate") is, in effect, a tax on increases in work effort, be it the number of hours an individual works or increases in wage rates due to higher work skills. The difficulty governments face is how to withdraw benefits sufficiently slowly as wages or incomes increase in order to give the target population an incentive to earn more, but sufficiently rapidly to keep the payments targeted on the group that really needs help. The wider is the earnings distribution, the easier it is to pay a substantial subsidy to those with low wages, without confronting those on higher earnings with high marginal effective tax rates. Similarly, the higher are initial rates of taxation, the more difficult it is to withdraw a given subsidy rapidly without using punitive marginal effective tax rates.

• and getting the administration right can be tricky…

There are other factors to take into account as well, such as whether to make payments through the benefit system (making timely payments is facilitated, but take-up can be low) or the tax system (making the payment seem less stigmatising, at the cost of using a payment system based around annual incomes and tax units) and how to deal with those who only work a few hours a week. No one would pretend that MWP policies, particularly those targeted at family income, are easy to administer.

… so many, but not all, countries could benefit from introducing MWP policies.

In sum, the evidence is that, if they can overcome these administrative difficulties at reasonable cost, a number of, but not all, OECD countries should consider introducing MWP policies. If they did so, they might expect to increase employment by a moderate amount, at the same time as narrowing the distribution of family income or wages.

However, one cannot rely on such policies alone to produce the right mix of incentives and social support…

But, several outstanding issues remain. First, for many countries the overall objective of MWP policies is to improve labour market conditions for low-productivity workers so that the "earnings insurance" implicit in statutory minimum wages and in in-work benefits is less and less needed by them as they climb the earnings ladder. But, whether this belief in the "temporary" nature of MWP policies is realistic in the foreseeable future is not at all evident. Even a well-designed policy package would leave no room for complacency. As noted earlier, it is not entirely clear how effective the change in work incentives from such measures will be. Moreover, not all people (*e.g. the seriously disabled*) will be able to take full advantage of such incentives and they must not be left out in the cold if social cohesion is to be more than a slogan. It is important that everyone who is able be given the appropriate help to participate in the

labour market through the provision of social and labour market services, help with child-care costs and the like.

… and they must be complemented by measures to build human capital, ultimately removing the need for support in low-productivity jobs.

A crucial and final point is that the long-run well-being of individuals on the bottom rung of the economic ladder depends both on increasing their employment opportunities and raising their productivity. While MWP policies can assist some to get a toe-hold in the labour market, they need good opportunities for lifelong-learning if they are to enjoy good careers and prospects. It is only by directing attention to the additional need to develop *long-run policies* to increase the skills and competences of the less-skilled, and to encourage the businesses where they work to invest in this human capital, that further sustained progress on improving the standards of living of disadvantaged groups in OECD countries will be possible.

Chapter 1

RECENT LABOUR MARKET DEVELOPMENTS AND PROSPECTS

Special Focus on the Evolution of Employment in the New OECD Member Countries

Summary

In the mid-1990s, five countries joined the OECD: the Czech Republic, Hungary, Korea, Mexico and Poland. This section considers trends for selected labour force indicators in these countries over the past decade and compares these developments with the average experience for the twenty-four other OECD countries. The assessment of aggregate employment trends over time is complemented with data on the composition of employment according to various characteristics at the end of the 1990s.

The past decade was a period of rapid economic change and stress for all of the new Member countries and their labour market statistics reflect important structural changes, as well as considerable resilience in an often difficult environment. Among the encouraging developments, Hungary, Korea and Poland experienced above-average growth in output per employed person, while Mexico substantially increased employment among its working-age population. Other developments were less positive, such as falls in employment rates in the Czech Republic, Hungary and Poland, and of output per employed person in the Czech Republic and Mexico. As of 1998, all five countries remained clustered toward the bottom of the OECD country ranking for output per capita due to the combined effects of below-average employment rates (except in the Czech Republic) and output per employed person.

The Czech Republic, Hungary and Poland continue to be marked by above-average concentrations of employment in industry, occupational categories related to industry, and large enterprises, a situation with historical roots in the economic strategy of the former central planning system. Korea, Mexico and Poland have substantial shares of employment in agriculture and related activities. All five have below-average concentrations of employment in the service sector overall, despite Korea and Mexico having a relatively high concentration in certain sub-sectors. While the five new Member countries differ substantially from the OECD average with respect to several aspects of the industrial and occupational composition of employment, these differences appear to be diminishing. In particular, there has been a large shift of labour from agriculture to services that may contribute to future gains in output per worker.

Introduction

The rebound of global economic activity after the 1997-1998 crisis in the emerging market economies has been stronger than previously expected. The United States economy continued to experience a relatively rapid pace of growth in 1999 (Table 1.1). The rate of growth slowed somewhat in OECD Europe and was only one-half as high as in North America. Nevertheless, growth in OECD Europe exceeded expectations. Korea experienced a strong recovery and the highest rate of growth in the OECD during the year. Positive growth in real GDP also returned to Japan and New Zealand following contractions in 1998, but it remained weak in Japan. Among OECD countries, only Turkey and the Czech Republic experienced declines in real GDP.

Section I presents an overview of recent economic developments and prospects, with particular emphasis on labour markets. Based on selected labour force indicators, Section II provides a discussion of the evolution of employment in the new OECD Member countries during the 1990s. It considers aggregate employment trends in relation to the macroeconomic context and then looks at the composition of employment, highlighting implications

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

Annual percentage change

	Share in total OECD GDP 1995	Average 1987-1997	1998	1999	Projections	
					2000	2001
Australia	1.8	3.3	5.1	4.4	3.9	3.7
Austria	0.8	2.4	2.9	2.2	3.0	3.1
Belgium	1.1	2.3	2.7	2.5	3.6	3.2
Canada	3.3	2.2	3.1	4.2	4.3	3.0
Czech Republic	0.6	..	–2.3	–0.2	1.4	2.3
Denmark	0.6	1.8	2.5	1.6	2.2	2.4
Finland	0.5	1.5	5.0	3.5	5.4	4.8
France	5.7	1.9	3.2	2.9	3.7	2.9
Germany[c]	8.3	3.3	2.2	1.5	2.9	3.0
Greece	0.6	2.0	3.7	3.2	3.8	3.9
Hungary	0.4	..	4.9	4.5	5.2	5.0
Iceland	0.0	1.4	4.7	4.4	3.7	2.7
Ireland	0.3	6.1	8.9	8.7	9.9	8.0
Italy	5.5	1.8	1.5	1.4	2.9	3.1
Japan	13.6	3.0	–2.5	0.3	1.7	2.2
Korea	2.9	7.4	–6.7	10.7	8.5	6.0
Luxembourg	0.1	5.9	5.0	4.9	5.6	5.3
Mexico	3.0	3.0	4.8	3.7	4.8	5.0
Netherlands	1.6	2.9	3.7	3.6	4.3	4.0
New Zealand	0.3	2.0	–0.6	3.9	4.2	3.0
Norway	0.5	3.1	2.0	0.9	3.4	2.8
Poland	1.3	..	4.8	4.0	5.0	4.8
Portugal	0.6	3.0	3.9	3.0	3.6	3.4
Spain	2.8	2.6	4.0	3.7	4.3	3.9
Sweden	0.8	1.2	3.0	3.8	4.4	3.0
Switzerland	0.9	1.3	2.1	1.7	2.8	2.6
Turkey	1.7	4.2	3.1	–5.0	4.2	3.9
United Kingdom	5.2	2.2	2.2	2.1	2.9	2.3
United States	35.3	2.9	4.3	4.2	4.9	3.0
OECD Europe[d]	**39.9**	**2.4**	**2.7**	**2.0**	**3.5**	**3.2**
EU	**34.5**	**2.4**	**2.7**	**2.3**	**3.4**	**3.1**
Total OECD[d]	**100.0**	**2.8**	**2.4**	**3.0**	**4.0**	**3.1**

.. Data not available.

a) The OECD Secretariat's projection methods and underlying statistical concepts and sources are described in detail in "Sources and Methods: OECD Economic Outlook" which can be downloaded from the OECD Internet site (http://www.oecd.org/eco/out/source.htm).

b) Aggregates are computed on the basis of 1995 GDP weights expressed in 1995 purchasing power parities.

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.

d) Averages for 1987-1997 exclude the Czech Republic, Hungary and Poland.

Source: OECD (2000), *OECD Economic Outlook*, No. 67, June.

for the efforts of the new Member countries to catch up economically with the other OECD countries.

I. Recent developments and prospects

A. Economic outlook to the year 2001

In the OECD area, real GDP growth is projected to reach 4 per cent in 2000, which, if realised, would be the fastest growth performance since 1988. In 2001, real GDP growth is likely to decrease somewhat to about 3 per cent. All OECD countries are projected to have positive growth during these years, with Ireland and Korea experiencing the fastest growth. In the United States, output growth should slow in 2001, in response to tightening financial conditions – including additional hikes in policy-controlled interest rates – and softening stock markets. Economic expansion in the European Union is expected to exceed 3 per cent over the next two years. Domestic demand should grow briskly, underpinned by rising employment and real disposable incomes, while the depreciation of the euro should result in a surge of exports. In Japan, a modest recovery is projected to take hold due to stronger exports and, after a protracted period of restructuring and a rise in profits, more buoyant corporate investment and stockbuilding.

B. Employment and unemployment

In 1999, the overall pace of employment growth in the OECD area was little changed from the previous year (Table 1.2). Ireland again experienced the highest employment growth rate among OECD countries (5.8 per cent), although its rate of increase slowed substantially from 1998. Following strong employment performance in 1998, Luxembourg and Spain also remained among the top performers in 1999 with job growth rates above 4 per cent. Employment growth in North America outpaced that of OECD Europe, a gap that is expected to widen in 2000. However, in 2001, relatively slower output growth in North America is projected to cause a reduction in this gap. Korea's economic recovery was accompanied by a modest increase in employment in 1999, but the pace is expected to quicken in 2000-2001. The Czech Republic experienced a loss of employment of 2.3 per cent in 1999, while Japan and Poland experienced losses of less than one per cent each. While the employment losses in the Czech Republic are projected to continue in 2000-2001, it is expected that Japan and Poland will see a modest resumption of employment growth by the end of the period.

Reflecting the stronger economic activity in the OECD area, the overall unemployment rate fell by three-tenths of a percentage point in 1999 and should fall further over the next two years to reach a rate of about 6 per cent of the labour force or 31¼ million persons in 2001 (Table 1.3). This decrease of about three million persons reflects particularly significant reductions in unemployment in the European Union and Korea. Despite this improvement, four countries within OECD Europe will continue to have double-digit unemployment rates in 2001. The OECD projections indicate a possible increase in the unemployment rate in the United States to about 4.2 per cent by 2001, while in Japan unemployment is projected to remain at about 4.8 per cent, its highest level since the 1950s.

C. Compensation and labour costs

In the OECD area, excluding high inflation countries, the rate of growth in compensation per employee in the business sector increased by just under one-half of a percentage point in 1999 and this rate is projected to increase by more than one-half percentage point by 2001 (Table 1.4). By contrast, the high-inflation countries shown in the Table (Greece, Hungary and Poland) experienced a reduction in this measure in 1999 and are projected to experience further reductions by the end of the period. These high-inflation countries also saw significant declines in the rate of increase in unit labour costs in the business sector in 1999, which should continue during the next two years. In the OECD area excluding high-inflation countries, the average increase in unit labour costs slowed slightly in 1999, despite increases in the pace in a number of countries, notably Italy, Korea and the Netherlands. Unit labour costs fell by 1.5 per cent in Japan, and only increased moderately in the United States despite a very tight labour market. An acceleration in the pace of increase in these costs is projected for the OECD area excluding high-inflation countries by the end of the period, with rises of one percentage point or more projected for Australia, Canada, Korea, New Zealand, Spain and Sweden.

II. The evolution of employment in the new OECD Member countries, 1989-1999

A. Introduction

The mid-1990s witnessed the first increase in the number of OECD Member countries in 21 years, with five countries – the Czech Republic, Hungary, Korea, Mexico and Poland – joining the Organisation.[1] The aim of this section is to consider selected labour force developments in these countries over the past decade. Patterns in the level and composition of employment are also compared with the average for other OECD countries.[2]

B. Macroeconomic overview

Table 1.5 presents per capita output (measured in PPPs) in OECD Member countries as the product of their mobilisation of the potential labour supply, defined as the ratio of employment to the total population, and their output per person in employment. The new OECD Member countries are clustered near the bottom of the country rankings for output per capita. Future increases in per capita output will depend on increasing employment or output per employee. Except for the Czech Republic, the new Member countries have below-average employment rates. With respect to output per employed person, all five new Members fall in the bottom quartile (as do Portugal and Turkey). There is a 19 per cent gap between even the best performer in this group by this measure (Korea) and the next country in the rankings (Greece). The gaps between the new Members and the other OECD average were greater with respect to output per employed person than with respect to the employment/population ratio.[3]

Chart 1.1 presents developments from 1989 to 1999 with respect to output, population and employment.[4] This period was a time of rapid economic change and stress in

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

Annual percentage change

	Employment						Labour force					
	Level 1998 (000s)	Average 1987-1997	1998	1999	Projections		Level 1998 (000s)	Average 1987-1997	1998	1999	Projections	
					2000	2001					2000	2001
Australia	8 617	1.7	1.8	1.9	1.9	1.9	9 364	1.7	1.2	1.0	1.4	1.6
Austria	3 962	0.7	0.9	1.4	1.4	1.4	4 200	0.8	1.0	1.0	1.1	0.9
Belgium	3 855	0.4	1.2	0.9	1.4	1.4	4 260	0.3	1.3	0.3	0.6	0.8
Canada	14 139	1.0	2.6	2.8	2.5	1.6	15 416	1.1	1.8	2.0	1.6	1.5
Czech Republic	4 818	..	–1.4	–2.3	–1.5	–0.2	5 153	..	0.4	0.2	0.1	0.0
Denmark	2 685	–0.1	2.1	0.8	0.8	0.8	2 867	–0.1	0.7	–0.2	0.7	0.7
Finland	2 222	–1.1	2.4	3.3	2.3	1.8	2 508	–0.3	1.0	1.9	1.1	0.9
France	22 842	0.3	1.1	2.0	2.3	2.0	25 900	0.5	0.4	1.2	0.9	0.8
Germany[b]	35 994	2.9	0.4	0.3	0.5	0.9	39 709	3.1	–0.2	–0.1	–0.1	0.0
Greece	3 921	0.5	3.4	1.0	1.2	1.4	4 400	0.8	4.7	0.8	0.8	0.8
Hungary	3 619	..	1.5	3.1	2.7	2.0	3 932	..	0.4	2.1	2.0	1.8
Iceland	133	–0.2	3.4	2.7	1.4	1.0	137	0.1	2.2	1.8	1.2	1.2
Ireland	1 521	2.4	10.2	5.8	5.6	3.8	1 646	1.6	6.9	3.5	3.5	3.5
Italy	20 242	–0.3	1.1	1.2	1.5	1.3	22 987	–0.1	1.2	0.8	0.9	0.8
Japan	65 144	1.0	–0.7	–0.8	–0.1	0.3	67 933	1.1	0.1	–0.2	0.0	0.3
Korea	19 927	2.6	–5.3	1.5	3.7	2.1	21 390	2.5	–1.0	0.9	1.8	1.6
Luxembourg	236	3.0	4.3	5.0	4.6	4.3	179	1.1	1.6	2.3	1.9	1.9
Mexico	18 416	4.5	4.9	3.2	2.6	2.6	19 018	4.4	4.3	2.5	2.5	2.6
Netherlands	6 609	2.0	3.3	3.0	2.5	2.2	6 895	1.7	1.8	1.9	1.8	1.8
New Zealand	1 725	1.1	–0.6	1.5	2.0	1.4	1 864	1.4	0.3	0.8	1.3	1.3
Norway	2 249	0.3	2.5	0.5	0.1	0.3	2 323	0.5	1.6	0.5	0.4	0.4
Poland	15 849	..	1.9	–0.2	–0.5	0.8	17 606	..	0.1	2.1	0.8	0.8
Portugal	4 493	1.1	4.6	1.8	1.5	1.3	4 732	1.0	2.7	1.1	1.1	1.1
Spain	13 205	0.8	3.4	4.6	3.1	2.4	16 265	1.0	0.9	1.0	0.9	0.9
Sweden	3 978	–1.0	1.5	2.2	1.9	1.4	4 256	–0.3	–0.2	1.2	1.0	0.8
Switzerland	3 848	0.8	1.2	0.6	1.2	1.2	3 988	1.2	–0.1	–0.5	0.5	1.1
Turkey	21 594	1.4	2.8	2.2	2.1	2.0	23 048	1.2	2.7	3.3	2.0	2.0
United Kingdom	27 212	0.6	1.2	1.0	0.9	0.5	29 024	0.3	0.5	0.7	0.7	0.6
United States	131 463	1.4	1.5	1.5	2.1	1.0	137 665	1.3	1.0	1.2	1.8	1.2
OECD Europe[c]	**205 093**	**0.9**	**1.6**	**1.4**	**1.3**	**1.3**	**226 013**	**1.0**	**0.9**	**1.1**	**0.8**	**0.8**
EU	**152 982**	**1.0**	**1.5**	**1.6**	**1.5**	**1.3**	**169 826**	**1.1**	**0.8**	**0.7**	**0.7**	**0.7**
Total OECD[c]	**464 522**	**1.3**	**1.1**	**1.3**	**1.5**	**1.2**	**498 662**	**1.3**	**0.9**	**1.0**	**1.1**	**1.0**

.. Data not available.

a) See note *a)* to Table 1.1.

b) 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.

c) Averages for 1987-1997 exclude the Czech Republic, Hungary and Poland.

Source: OECD (2000), *OECD Economic Outlook*, No. 67, June.

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

	Percentage of labour force					Millions				
	Average 1987-1997	1998	1999	Projections		Average 1987-1997	1998	1999	Projections	
				2000	2001				2000	2001
Australia	8.6	8.0	7.2	6.7	6.4	0.7	0.7	0.7	0.6	0.6
Austria	4.8	5.7	5.3	5.0	4.5	0.2	0.2	0.2	0.2	0.2
Belgium	8.6	9.5	9.0	8.3	7.8	0.4	0.4	0.4	0.4	0.3
Canada	9.4	8.3	7.6	6.8	6.6	1.4	1.3	1.2	1.1	1.1
Czech Republic	..	6.5	8.8	10.2	10.5	..	0.3	0.5	0.5	0.5
Denmark	9.7	6.4	5.5	5.4	5.4	0.3	0.2	0.2	0.2	0.2
Finland	9.9	11.4	10.2	9.2	8.5	0.2	0.3	0.3	0.2	0.2
France	10.8	11.8	11.1	9.8	8.8	2.7	3.1	2.9	2.6	2.3
Germany	7.6	9.3	9.0	8.5	7.7	2.8	3.7	3.6	3.4	3.0
Greece	8.6	10.9	10.7	10.3	9.8	0.4	0.5	0.5	0.5	0.4
Hungary	..	8.0	7.1	6.5	6.2	..	0.3	0.3	0.3	0.3
Iceland	2.9	2.8	1.9	1.7	1.9	0.0	0.0	0.0	0.0	0.0
Ireland	14.5	7.6	5.5	3.6	3.3	0.2	0.1	0.1	0.1	0.1
Italy	10.4	11.9	11.5	11.0	10.5	2.4	2.7	2.7	2.6	2.5
Japan	2.7	4.1	4.7	4.8	4.8	1.7	2.8	3.2	3.2	3.2
Korea	2.5	6.8	6.3	4.5	4.1	0.5	1.5	1.4	1.0	0.9
Luxembourg	2.1	3.1	2.9	2.8	2.7	0.0	0.0	0.0	0.0	0.0
Mexico	3.7	3.2	2.5	2.4	2.4	0.5	0.6	0.5	0.5	0.5
Netherlands	6.6	4.2	3.2	2.5	2.1	0.4	0.3	0.2	0.2	0.2
New Zealand	7.4	7.5	6.8	6.1	6.0	0.1	0.1	0.1	0.1	0.1
Norway	4.7	3.2	3.2	3.5	3.6	0.1	0.1	0.1	0.1	0.1
Poland	..	10.0	12.0	13.1	13.1	..	1.8	2.2	2.4	2.4
Portugal	6.0	5.0	4.4	4.1	4.0	0.3	0.2	0.2	0.2	0.2
Spain	19.7	18.8	15.9	14.1	12.9	3.0	3.1	2.6	2.3	2.2
Sweden	5.0	6.5	5.6	4.8	4.3	0.2	0.3	0.2	0.2	0.2
Switzerland	2.7	3.9	3.0	2.7	2.7	0.1	0.1	0.1	0.1	0.1
Turkey	7.7	6.3	7.3	7.2	7.2	1.7	1.5	1.7	1.7	1.8
United Kingdom	8.3	6.2	5.9	5.7	5.8	2.4	1.8	1.7	1.7	1.7
United States	6.0	4.5	4.2	4.0	4.2	7.7	6.2	5.9	5.6	6.0
OECD Europe[b]	**9.3**	**9.3**	**9.0**	**8.6**	**8.1**	**17.6**	**21.0**	**20.6**	**19.7**	**18.8**
EU	**9.7**	**10.0**	**9.2**	**8.5**	**7.9**	**15.8**	**16.9**	**15.8**	**14.6**	**13.7**
Total OECD[b]	**6.8**	**6.9**	**6.6**	**6.3**	**6.1**	**30.3**	**34.2**	**33.5**	**31.9**	**31.3**

.. Data not available.
a) See note *a)* to Table 1.1.
b) Averages for 1987-1997 exclude the Czech Republic, Hungary and Poland.
Source: OECD (2000), *OECD Economic Outlook*, No. 67, June.

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

Percentage changes from previous period

	Compensation per employee					Unit labour costs				
	Average 1987-1997	1998	1999	Projections 2000	Projections 2001	Average 1987-1997	1998	1999	Projections 2000	Projections 2001
Australia	4.6	2.6	2.5	4.0	3.8	2.8	–1.0	–0.1	2.1	1.9
Austria	3.8	3.1	2.1	1.8	2.5	1.6	0.9	1.2	0.0	0.6
Belgium	3.8	1.8	2.4	2.4	2.7	1.9	0.3	0.5	0.0	0.8
Canada	3.9	2.4	2.2	3.0	3.3	2.6	2.1	0.7	1.2	2.0
Czech Republic	..	9.6	7.2	5.3	6.4	..	10.7	4.9	2.2	3.6
Denmark	4.4	4.8	4.2	3.9	3.4	2.1	4.5	3.3	2.1	1.3
Finland	5.1	5.2	2.6	4.1	4.9	1.2	2.1	2.9	1.0	1.9
France	2.9	1.8	1.8	1.7	2.2	0.9	–0.4	0.8	0.3	1.3
Germany[c]	2.5	1.3	1.8	1.8	2.3	2.1	–0.5	0.5	–0.8	–0.1
Greece	14.0	4.9	4.6	4.5	4.6	12.1	4.6	2.1	1.6	1.9
Hungary	..	16.4	9.2	11.2	8.3	..	12.7	8.4	9.2	5.6
Iceland	10.1	6.3	6.2	6.6	6.8	..	..	..	..	..
Ireland	3.9	2.5	6.1	6.9	7.2	–0.1	4.0	2.9	2.3	2.7
Italy	6.0	–1.2	2.2	2.7	2.9	3.8	–1.6	1.8	0.9	0.8
Japan	2.2	–1.0	–0.3	0.2	0.4	0.1	1.2	–1.5	–1.7	–1.6
Korea	12.8	–1.3	11.8	9.0	8.3	7.2	0.1	2.0	4.1	4.2
Netherlands	2.5	2.1	3.6	3.9	3.7	1.1	1.2	2.6	1.6	1.4
New Zealand	3.0	2.4	2.4	2.9	3.1	2.1	1.8	0.4	0.6	1.4
Norway	4.1	7.2	5.6	4.5	4.8	1.9	6.1	4.8	2.7	2.0
Poland	..	14.3	11.6	8.7	6.4	..	9.7	5.8	2.2	2.0
Portugal	10.2	4.5	4.3	4.8	5.0	7.7	5.6	2.9	2.4	2.6
Spain	6.3	2.3	–0.5	3.5	3.7	4.2	1.8	0.5	2.2	2.0
Sweden	6.2	4.4	1.9	3.6	4.9	3.7	2.6	0.7	0.7	2.8
Switzerland	3.5	0.8	1.5	2.6	2.9	2.4	–0.1	0.7	0.5	1.2
United Kingdom	5.8	6.9	5.4	5.8	5.8	4.4	5.9	4.2	3.6	3.7
United States	3.6	4.9	4.4	4.4	4.8	2.3	2.6	1.8	1.2	2.6
OECD Europe[d, e]	**4.5**	**3.0**	**3.0**	**3.4**	**3.6**	**2.9**	**1.7**	**1.9**	**1.1**	**1.5**
EU[e]	**4.5**	**2.3**	**2.5**	**3.0**	**3.3**	**2.9**	**1.1**	**1.6**	**1.0**	**1.4**
Total OECD less high-inflation countries[e, f]	**4.0**	**2.7**	**3.1**	**3.4**	**3.7**	**2.3**	**1.8**	**1.3**	**0.8**	**1.6**
Total OECD[d, e]	**4.1**	**3.0**	**3.3**	**3.5**	**3.7**	**2.4**	**1.9**	**1.3**	**0.8**	**1.5**

.. Data not available.

a) See note *a)* to Table 1.1.

b) Aggregates are computed on the basis of 1995 GDP weights expressed in 1995 purchasing power parities.

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.

d) Averages for 1987-1997 exclude the Czech Republic, Hungary and Poland.

e) Countries shown.

f) High-inflation countries are defined as countries which had 10 per cent or more inflation in terms of GDP deflator on average during the 1990s on the basis of historical data. Consequently, Greece, Hungary, Mexico, Poland and Turkey are excluded from the aggregate.

Source: OECD (2000), *OECD Economic Outlook*, No. 67, June.

Table 1.5. **Employment, productivity and per capita output (GDP), 1998**

Output valued at current market prices using PPPs, US$

Country[a]	Employment/population ratio[b]	×	Output per employed person	=	Output per capita
Luxembourg	53.6		64 742		34 701
United States	48.9		62 214		30 394
Germany	50.1		55 002		27 569
Norway	54.2		49 117		26 611
Switzerland	50.2		52 426		26 297
Denmark	54.0		48 682		26 297
Iceland	47.3		52 276		24 716
Canada	51.2		47 112		24 106
Japan	37.1		65 053		24 103
Belgium	45.7		52 562		24 003
Austria	47.3		48 781		23 073
Netherlands	43.5		52 563		22 887
Australia	45.5		49 848		22 697
Ireland	40.4		55 585		22 429
France	38.5		57 440		22 089
Italy	35.4		62 187		21 999
Finland	42.9		50 474		21 677
United Kingdom	45.0		47 186		21 218
Sweden	45.0		47 029		21 162
New Zealand	44.3		40 193		17 801
Spain	33.4		50 129		16 743
Portugal	48.4		31 475		15 242
Greece	37.2		38 728		14 411
Korea	**42.9**		**31 557**		**13 543**
Czech Republic	**46.8**		**28 038**		**13 133**
Hungary	**34.2**		**30 834**		**10 530**
Poland	**39.7**		**20 104**		**7 989**
Mexico	**37.1**		**21 442**		**7 953**
Turkey	32.5		20 659		6 723
Other OECD[c]	44.6		52 997		23 637

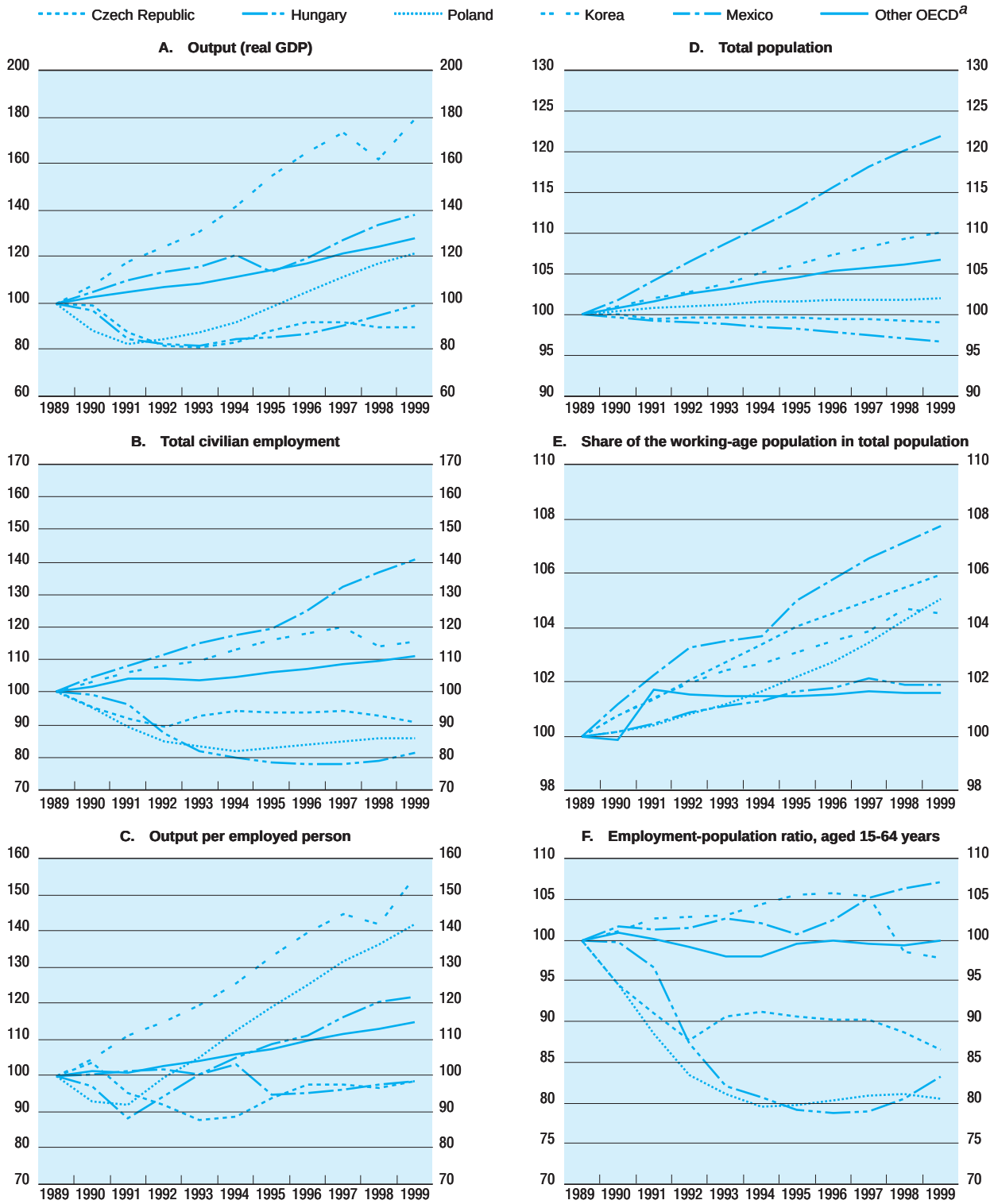
a) Countries are listed in descending order by output per capita; the five new Member countries are in blue.
b) Calculated on the basis of total employment and total population.
c) "Other OECD" refers to the average for the 24 countries that were members prior to 1994.
Sources: Employment: OECD *Labour Force Statistics*; Population: OECD *Main Economic Indicators* (MEI) except for Belgium and Greece which were estimated using MEI benchmarks and trends from the UN population database for 1998; Output: *OECD in Figures* (1999).

the five new Member countries, which are reflected in significant changes in the rates of labour mobilisation and output per worker.[5]

Early in the period considered here, the Czech Republic, Hungary and Poland fundamentally changed their economic systems from a planning basis to a market-oriented approach. As so-called transition countries, they each experienced a deep recession (Chart 1.1, Panel A). In Poland, output (measured as real GDP) had dropped by nearly 12 per cent already in 1990. The Czech Republic and Hungary initially experienced less severe drops in output, but in 1991 were each hit with a decline of roughly 12 per cent. In the same year, output in Poland bottomed out and subsequently the Polish economy grew consistently, with real growth of about 22 per cent between 1989 and 1999. Output in Hungary bottomed out in 1993 and began to grow, although by the end of the period it had only just recovered to its 1989 level. In the Czech Republic, output began to recover in the mid-1990s, but then fell again in 1998 and 1999. Over the entire 10-year period ending in 1999, output performance in the three Central and East European (CEE) countries was better than in many transition countries, but did not match the other OECD average increase of nearly 28 per cent.

The situation in the Czech Republic contrasted with that in Hungary and Poland, in part due to a slower pace of reform in banking, capital market regulation and corporate governance. A particular issue in the Czech Republic was the continued easy access to credit (*e.g.* from state-owned banks) which reduced pressures on enterprises to restructure and reduce labour hoarding. The immediate cause of the downturn in 1998 was a currency crisis in 1997 that led the authorities to adopt a policy of monetary and fiscal restraint. The situation was aggravated by the repercus-

Chart 1.1. Evolution of output, population and employment, 1989-99
1989 = 100



a) "Other OECD" refers to the 24 countries that were Members prior to 1994.
Sources: See Annex 1.A.

sions of the Asian and Russian financial crises, and temporary declines in business and consumer confidence. In Hungary, on the other hand, the upturn in 1994 appears to have been reinforced eventually by the effects of the extensive reform package introduced in 1995 (including the adoption of a crawling-peg exchange rate regime, a privatisation programme and fiscal tightening) as well as a deepening of structural reforms implemented earlier (*e.g.* in the banking sector). By 1997, growth began to accelerate. In Poland, early and substantial stabilisation and economic reform measures (*e.g.* policies for disinflation and bank restructuring) created an environment conducive to the establishment and growth of private firms. Indeed, the dynamism of private firms in manufacturing and services has fuelled much of the growth there. In both Hungary and Poland, the external financial crises of 1997-1998 did not appear to have a sustained negative impact on business and consumer confidence.

During 1989-1999 Korea and Mexico both followed export-oriented development strategies and experienced generally strong growth interrupted by spells of financial crisis and recession. Korea experienced the strongest growth in output of any of the new Member countries. Its cumulative increase of 79 per cent far exceeded the 28 per cent average increase for the other Member countries. However, in 1997, Korea experienced a severe financial crisis marked by depleted foreign exchange reserves, a sharp depreciation of the won and soaring interest rates. As a result, real GDP fell by 6.7 per cent in 1998. Still, by the first quarter of 1999 growth resumed and for the year real output rose above its pre-crisis level.

In the early 1990s, the Korean economy was characterised in part by conservative fiscal policy, strong savings and investment, and an emphasis on education. However, large capital inflows and government influence on banks and corporations (*e.g.* through implicit guarantees against insolvency) led to excessive risk-taking and over-investment. As the financial crisis spread through Asia beginning in mid-1997, Korea also suffered a loss of investor confidence and capital flight which resulted in a severe liquidity crisis. Ultimately, a policy response was laid out in an IMF stand-by agreement that specified tight fiscal and monetary performance criteria, and a series of microeconomic reforms designed to stimulate competition, increase financial transparency and improve corporate governance. Further initiatives complemented these policies with measures to increase labour market flexibility and social protection, among other reforms.[6]

After a period of strong growth in the early 1990s, the Mexican economy fell into a serious recession following the peso crisis at the end of 1994. Output performance fell below the average for the other OECD Member countries for the period from 1989 to 1995. A strong recovery and sustained output growth from 1996 to 1999, however, enabled Mexico to achieve a better-than-average growth for the entire 10-year period considered here (with a cumulative increase of 38 per cent).

Early on, Mexico undertook a number of economic policies to deregulate and open the economy to competition, privatise state-controlled enterprises (*e.g.* commercial banks) and rein in public sector deficits. Steps to liberalise trade culminated in the North American Free Trade Agreement that entered into force in 1994. However, current account deficits were growing and in 1994 a collapse in the peso resulted in broad financial stress. Stabilisation measures, including tightened fiscal and monetary policy, were implemented with international support in 1995. This helped to contain the damage and promote conditions for renewed growth. Continued macroeconomic rigour, a flexible exchange rate, further market-opening measures (*e.g.* with respect to railroads and energy) and other structural reforms have taken place since. Indeed, it is notable that the Mexican economy was able to avoid a new downturn during the Asian and Russian financial crises.

Employment and output per worker

The evolution of total employment roughly paralleled that of output, but with some variation due to changes in output per worker. As shown in Chart 1.1, Panel B, the three CEE countries had below-average growth in employment, which is not surprising given the large initial contractions in output, the inherited overstaffing from the previous economic system and the on-going economic restructuring. Among these three countries, employment in the Czech Republic declined least (about 9 per cent) over the period. Hungary and Poland experienced employment declines of about 19 and 14 per cent, respectively. Employment began rising gradually in Hungary in 1998 and in Poland in 1995. On the other hand, employment in Korea rose by about 16 per cent over the entire period despite a downturn associated with the recession toward the end of the period. Mexico had even stronger employment performance, growing by 41 per cent. Employment there expanded in each year, even during the economic downturn in 1995. As noted in the OECD's *Economic Survey* (1996), this is largely accounted for by the particular adjustment pattern in Mexico that involved substantial falls in real wages and an increase in informal-sector employment. Given the very limited social safety net, there are few alternatives to working. Also, in both Korea and Mexico, real wage flexibility helped cushion some of the pressures for employment adjustment during the down-

turns. Among the other OECD countries, average employment growth amounted to about 11 per cent over the 10-year period.

These five countries exhibited quite a range of experience with respect to output per employed person (Chart 1.1, Panel C). In the Czech Republic and Mexico, this measure had declined towards the middle of the period and never fully recovered. In 1999, the levels in both countries were still down at about 2 per cent from 1989. In Hungary and Poland, following initial declines through 1991, output per worker increased substantially, in part because deep restructuring resulted in improved productivity. Korea scored the largest increases in output per employed person, ending the period with a gain of about 55 per cent, despite a slight dip in 1998. In comparison, output per employed person for the other OECD countries was about 15 per cent greater in 1999 than in 1989.

Labour supply

As shown in Chart 1.1, Panel D, the three CEE countries experienced modest population change during the period. In the Czech Republic and Hungary, population declined somewhat, while in Poland it increased slightly. Korea and Mexico had substantial increases of 10 and 22 per cent, respectively, well above the average of 7 per cent for the other OECD countries. All five new Members experienced increases in the share of the population of working-age (Chart 1.1, Panel E). The net effect of the change in both was an increase in the overall working-age population in four of the five countries. While labour resources were increasingly available, the rate of utilisation tended to decline; that is, the share employed among the working-age population declined in all of these countries but Mexico (Chart 1.1, Panel F).

Chart 1.2 shows in more detail the shares of the working-age population employed over time and in relation to developments in the shares out of the labour force and unemployed. Changes in the mobilisation of labour resources in three of the countries were strongly influenced by shifts in the share of women participating in the labour force. In the Czech Republic and Hungary, substantial numbers of women withdrew from the labour force. The female participation rate in the Czech Republic fell from 74 per cent in 1989 to 64 per cent in 1998. During the same period, the female participation rate in Hungary fell from about 58 to 51 per cent.[7] Mexico succeeded in drawing more women into the labour force, but still had a low female participation rate of about 42 per cent in 1998. Korea and Poland experienced smaller changes during the period. By 1998, their rates of female participation were about 50 per cent and 60 per cent, respectively. In comparison, the average rate of female participation for the other OECD countries was about 62 per cent in that year.

Between 1989 and 1998, substantial numbers of men withdrew from the labour force in Hungary, with the participation rate falling from 77 per cent to 67 per cent. In the other countries, the changes appeared more modest over the years for which data were available. At the end of the period, the Czech Republic and Korea had male participation rates of 80 and 78 per cent, respectively, which were a little lower than the average for the other OECD countries of 83 per cent. Male participation rates in Poland and Hungary were well below-average. Mexico, on the other hand, had one of the highest rates at 87 per cent.

In the years for which data are available, increases in the shares of the unemployed in the working-age population were notable in the Czech Republic and Korea.[8] Particularly striking was the case of women in the Czech Republic where the share of the unemployed in the working-age population went from near zero to five per cent.[9] In the CEE countries, decreases in participation offset a portion of the potential rise in the share of unemployed for both men and women. Also, the Chart highlights the effects of recession in Korea in 1998 and in Mexico in 1995, where the shares of unemployed grew substantially from the previous year shown. Despite the growth in unemployment, the shares of the unemployed in the working-age population in the new Member countries were moderate as of 1998. Except for Poland, all of the new Member countries had shares of female unemployment that were about the same or below the other OECD average. With respect to the shares of male unemployment, while Poland was nearly two percentage points above-average, the Czech Republic, Hungary and Korea were about average, and Mexico was substantially below the average.

The *quality* of potential labour supply is also important since per capita income depends on output per worker, as well as employment rates. In some respects, the new Member countries are fairly well positioned with respect to their human capital endowments. Except for Mexico, they had either average (Hungary and Korea) or above-average (Czech Republic and Poland) shares of adults aged 25 to 64 years with completed secondary or higher educational attainment (Chart 1.3). In Korea, the share of workers with advanced education was close to the average for the other OECD countries. Educational achievement scores are consistent with the data on educational attainment in suggesting that the human capital endowments of Korea, the Czech Republic and Hungary positioned them for future gains in output per worker. For example, among the 23 OECD countries for which data are available, Korea

Chart 1.2. **Working-age population by labour market status and gender**
Percentages

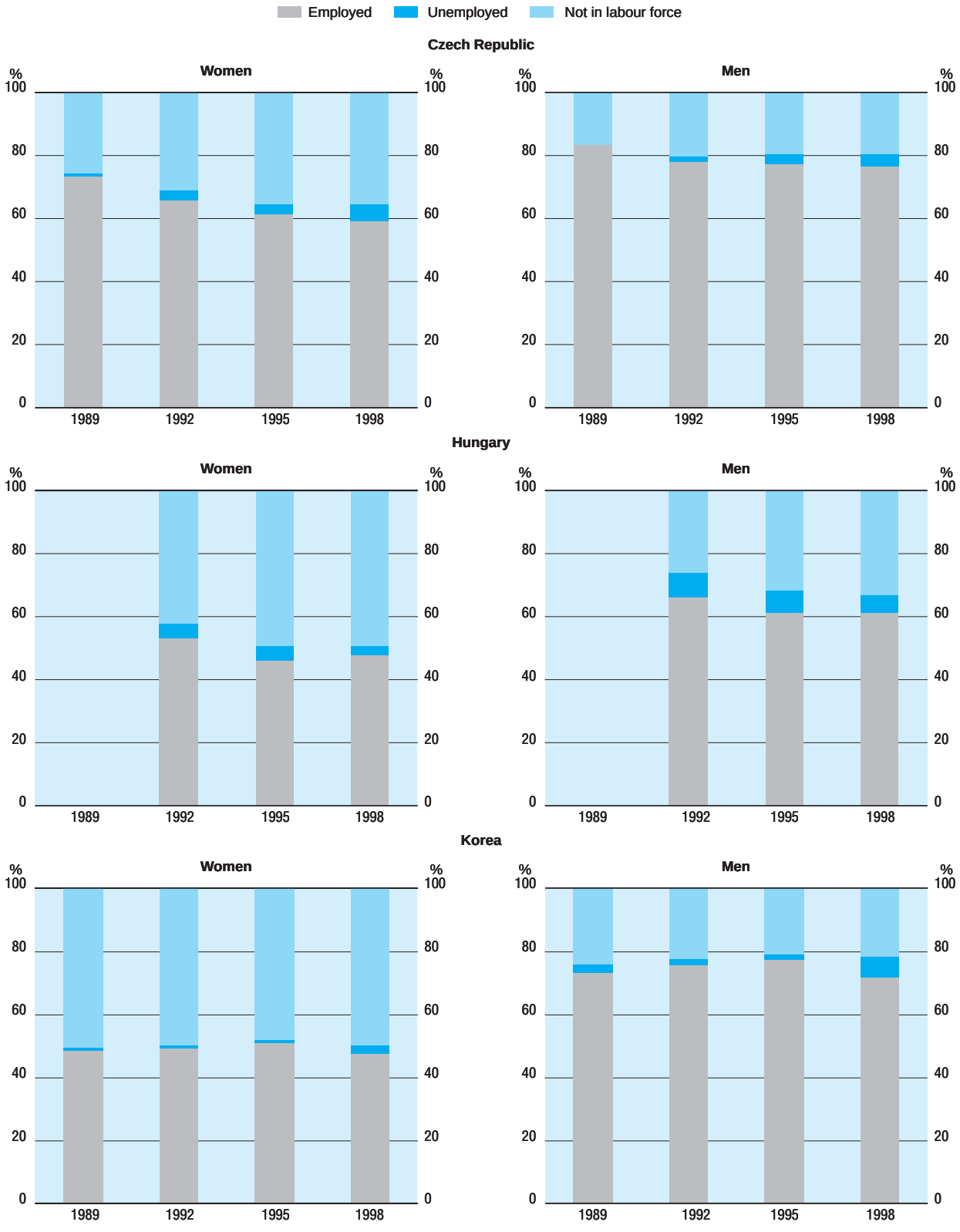
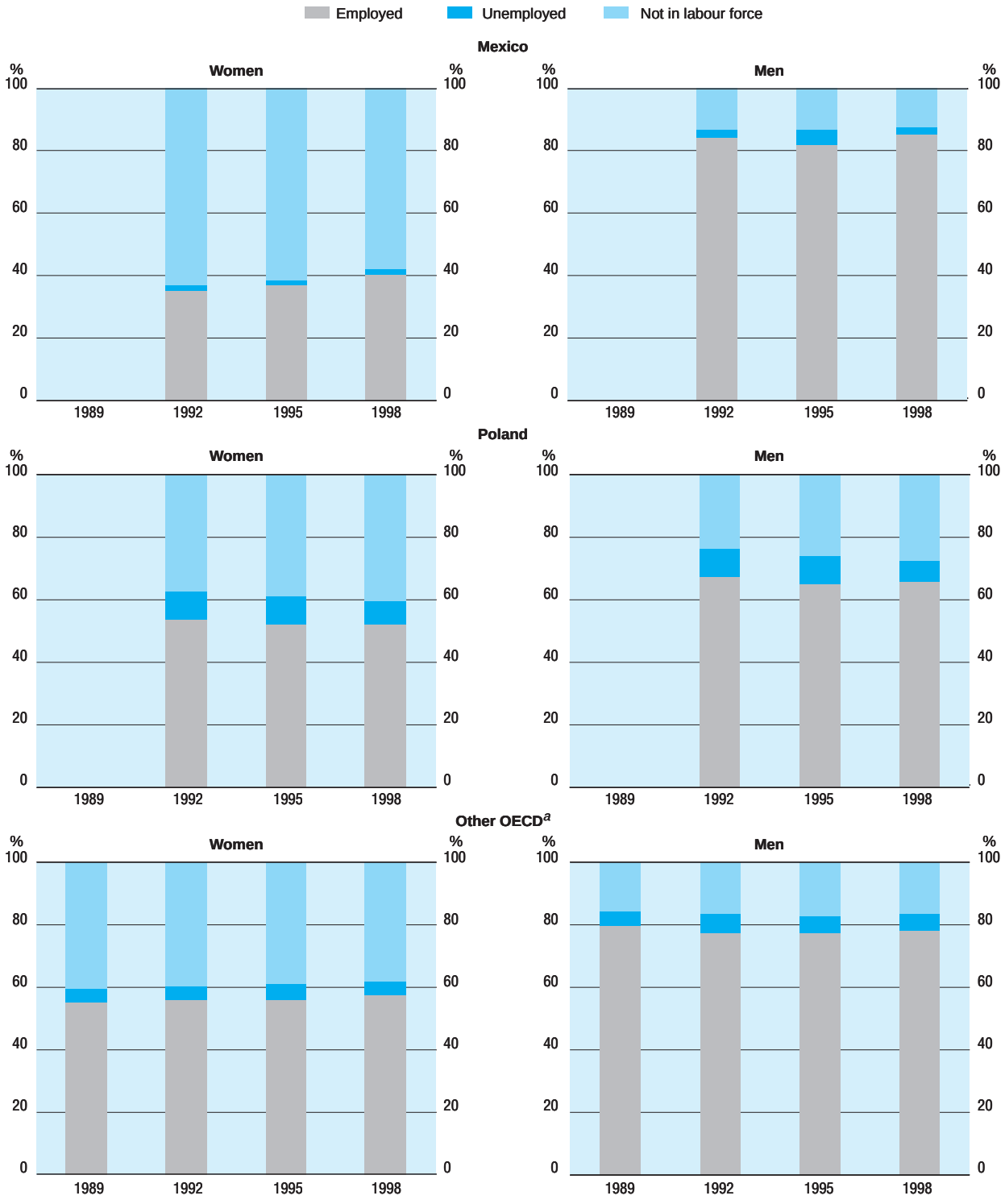


Chart 1.2. Working-age population by labour market status and gender *(cont.)*

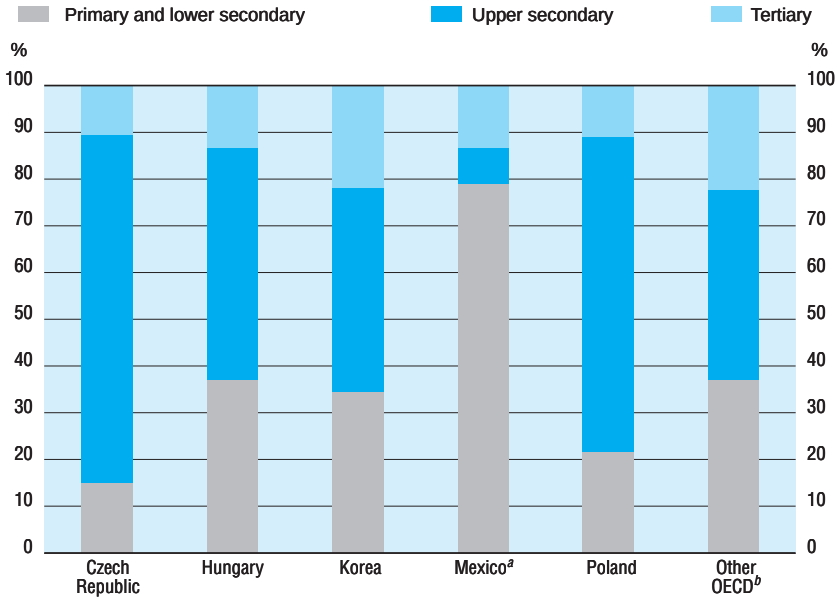
Percentages



a) "Other OECD" refers to the countries that were Members prior to 1994, except that Austria, Iceland and Switzerland are excluded from the averages as comparable series are not available for them for all years.

Source: OECD labour force statistics database.

Chart 1.3. **Educational attainment of adults, 1998**
Percentages of the population aged 25 to 64 years



a) 1997.
b) Unweighted average for the other OECD countries in 1998 (except 1997 for Austria, Finland and Greece).
Source: OECD (2000*b*).

had the highest mean mathematics achievement score for eighth grade students [OECD (1998*e*)]. The Czech Republic and Hungary also had mathematics achievement scores significantly above the OECD average for this age group. At the same time, there remained areas for improvement. For example, in Mexico nearly 80 per cent of adults had not completed upper secondary education, a share that was roughly twice as large as for the other OECD countries. In Poland, despite a relatively good performance with respect to educational attainment, the International Adult Literacy Survey found a relatively high share of adults with low literacy scores [OECD (1995)].

C. Composition of employment

Table 1.6 presents data on the composition of employment by gender and age. The indicators for Mexico stand out due to the low share of women in the total and the high share of youth. The remaining new Member countries have gender shares that are similar to the average for the other OECD countries. With respect to age, all of the new

Table 1.6. **Composition of employment by gender and age, 1998**
Percentages of total employment (workers aged 15 to 64 years)

	Czech Republic	Hungary	Korea	Mexico	Poland	Other OECD[a]
Gender						
Women	43.5	44.8	40.1	34.1	44.9	42.8
Men	56.5	55.2	59.9	65.9	55.1	57.2
Age						
15-24	15.0	15.3	9.5	27.6	10.8	6.9
25-54	77.2	79.9	78.1	64.8	81.7	81.2
55-64	7.8	4.8	12.4	7.6	7.4	11.9

a) Other OECD refers to the average for the 24 countries that were members prior to 1994.
Source: OECD labour force statistics database; and the *Statistical Yearbook of Portugal* (NIS, 1999).

Member countries have relatively high shares of young workers and, except for Korea, much smaller shares of older workers.

Table 1.7 presents comparisons by employment status, enterprise size and ownership. The shares of wage and salary workers in the Czech Republic and Hungary come close to the average for the other OECD countries, while the shares in Korea, Mexico and Poland are substantially lower. The low shares in the latter countries are partly a reflection of the large role that agriculture still plays in overall employment in these economies. Relatively large numbers of self-employed and unpaid family workers are concentrated in that sector. The CEE countries continue to have relatively large shares of employment in large enterprises, a characteristic that is a lingering reflection of the industrial structure of the former planning system. The Czech Republic and Poland have nearly half of their employment in enterprises with more than 100 employees. Hungary has over 20 per cent of its employment in establishments of over 500 employees. The data for Korea indicate a much lower share of employment in large enterprises. The Czech and Polish situation also contrasts with such OECD countries as Belgium, the Netherlands and Spain, which in 1996 had roughly 60 per cent of their non-agricultural employment in establishments with less than 10 employees. With respect to ownership, in four of the new Member countries the shares of employment attributed to the private sector are within 6 percentage points of the average for the other OECD countries; the Czech Republic had the lowest private-sector share.

Table 1.8 presents the composition of civilian employment and its change among the nine ISIC major sectoral divisions. Panel A highlights substantial differences between the distribution of employment by sector in the new Member countries and that in the other OECD countries. Panel B presents estimates of the total percentage-point change in employment shares by sector in each country, indicating that substantial changes are underway that are bringing the composition by broad sector closer to the average for the other OECD countries.

The structure of employment in the CEE countries continues to reflect the pre-reform period. The planning system emphasised heavy industry, while giving less importance to the service sector. Despite substantial changes over the decade, the three CEE countries continue to have above-average shares of employment in mining and manufacturing, and relatively low shares in certain services. Other notable concentrations include agriculture in Korea, Mexico and Poland, where the employment shares for this sector are 2 to 3 times the average for the other OECD countries. Korea has the largest service sector among the new Member countries, primarily due to a large

Table 1.7. **Composition of employment by selected characteristics, 1998**[a]

Percentages of total employment

	Czech Republic	Hungary	Korea	Mexico	Poland	Other OECD[b]
Employment status:						
Wage and salary workers	86.4[c]	85.4	61.2	60.9	72.8	84.1[d]
Self-employed or unpaid family workers	13.6	14.6	38.8	39.1	35.4	15.9[d]
Enterprise size:						
0-100 employees	51.9	..	72.3[f]	..	53.4[g]	..
101-500 employees	19.4	79.0[e]	14.3[f]	..	18.3[g]	..
> 500 employees	28.7	21.0	13.4[f]	..	28.3[g]	..
Ownership category:						
Private	77.8	92.8[h]	88.5[i]	86.8[h]	81.6[h]	86.8[j]
Public or mixed	22.2	7.2[h]	11.5[i]	13.2[h]	18.4[h]	13.2[j]

.. Data not available.
a) Or most recent year available.
b) "Other OECD" refers to the average for the 24 countries that were members prior to 1994.
c) Includes members of producer cooperatives.
d) Average based on 1998 data except for Belgium (1996), Greece (1997), Luxembourg (1997) and Portugal (1997).
e) This figure refers to enterprises with employment between 0 and 500.
f) These figures refer to *establishments* in 1997.
g) Excludes persons employed in private farms in agriculture.
h) 1997.
i) 1996.
j) Average based on 1997 data except for Portugal (1995), Switzerland (1995) and the United Kingdom (1996); data for Turkey were not available.
Sources: Employment by status is from OECD labour force statistics database; employment by enterprise size is from the Hungarian Central Statistical Office, the Ministry of Labour of Korea and the Central Statistical Office of Poland; employment by ownership is from the OECD analytical database except for Mexico which is based on OECD Secretariat estimates; all data shown for the Czech Republic were provided by the Statistical Office of the Czech Republic.

Table 1.8. **Sectoral composition of employment and its recent evolution**

	Czech Republic	Hungary	Korea	Mexico	Poland	Other OECD [a]
Panel A. Sectoral composition of employment in 1998 (percentages of civilian employment, all ages)						
ISIC major divisions						
1. Agriculture, hunting, forestry and fishing	5.5	7.7	12.2	19.4	19.2	6.3
2. Mining and quarrying	1.8	0.7	0.1	0.4	2.5	0.4
3. Manufacturing	27.8	24.9	19.5	18.3	20.9	18.4
4. Electricity, gas and water	1.9	2.7	0.3	0.5	1.7	0.8
5. Construction	9.8	6.4	7.9	5.6	7.0	7.6
6. Wholesale and retail trade, restaurants and hotels	16.9	16.4	27.9	22.2	15.2	20.6
7. Transport, storage and communication	7.9	8.3	5.9	4.5	6.2	5.8
8. Finance, insurance, real estate and business services	7.2	6.8	9.4	1.0	5.3	9.9
9. Community, social and personal services	21.1	26.1	16.9	28.0	22.0	30.2
Total share in industry (2-5)	41.3	34.7	27.8	24.7	32.1	27.3
Total share in services (6-9)	53.1	57.6	60.0	55.8	48.8	66.5
Panel B. Percentage point change in the sectoral composition of employment, 1989-1998 [b]						
Broad sectors						
1. Agriculture, hunting, forestry and fishing	–6.4	–5.6	–8.2	–8.2	–10.6	–2.4
2-5. Industry	–5.8	–1.4	–7.3	1.8	0.6	–0.6
6-9. Services	12.1	7.0	15.5	6.4	10.0	3.0

a) "Other OECD" refers to the countries that were members prior to 1994. Averages are based on 1998 data except for Belgium (1996) and Greece (1997). France and Luxembourg are excluded from the averages.
b) The figures shown here should be considered only approximate. The nine-year changes were estimated for purposes of comparison based on actual changes for the following periods: 1989-1998 for the Czech Republic; 1990-1998 for Korea; 1991-1998 for Mexico; 1992-1998 for Hungary; and 1993-1998 for Poland.
Source: OECD labour force statistics database.

employment share in wholesale and retail trade, restaurants and hotels. In Mexico, the employment share in finance, insurance, real estate and business services is particularly small.

Employment shifted out of agriculture and into services at a rapid rate in all five countries between 1989-1998 (Table 1.8, Panel B). Declines in the share of employment in industry reinforced the rise in service sector employment in the Czech Republic, Hungary and Korea. Growth of the service sector at the expense of agriculture and industry also characterised the other OECD average, but the rate of sectoral reallocation of labour was much higher in the new Member countries. As a result, their sectoral composition of employment became more similar to that in other OECD countries.[10]

Table 1.9 presents the composition of employment among the nine major ISCO occupational categories. All the new Member countries show numerous divergences from the average for the other OECD countries. In each of them, for example, at least five categories by gender (out of the total of 18 shown) were more than five percentage points different from the other OECD average. The CEE countries have above-average shares of employment in occupations related to industry, including craft and related trades workers, and plant and machine operators and assemblers. Korea and Mexico have relatively high concentrations of service workers and shop and market sales workers, and skilled agricultural and fishery workers. Indeed, the share of employed Mexican men in the latter category was more than 24 percentage points above the average for the other OECD countries. Compared with the average for the other OECD countries, the shares of men in professional occupations were below-average in all five of the new Member countries. With respect to women, Korea and Mexico had particularly low shares in professional occupations. Also, with the exception of men in Korea, all five of the countries had low shares of employment in clerical occupations and of legislators and senior officials.

Conclusions

The 1990s were a period of rapid economic change and stress for all five of the new OECD Member countries and trends over the decade in their labour market statistics reflect important structural changes, as well as considerable resilience in an often difficult economic environment. Overall, the pattern of change was mixed. Among the encouraging developments, Hungary, Korea and Poland

Table 1.9. **Occupational composition of employment by gender, 1998** [a]

Percentages of total employment

	Czech Republic	Hungary [b]	Korea	Mexico	Poland	Other OECD [b, c]
Panel A. Women						
ISCO-88 broad occupations						
1. Legislators, senior officials and managers	3.5	4.8	0.3	1.4	4.2	5.9
2. Professionals	12.0	15.0	4.4	2.7	21.8	13.8
3. Technicians and associate professionals	22.5	19.3	8.3	13.5	22.1	16.5
4. Clerks	14.9	14.6	14.1	10.2	16.7	20.3
5. Service workers and shop and market sales workers	18.3	18.9	34.9	28.1	9.4	20.5
6. Skilled agricultural and fishery workers	2.5	0.2	13.7	12.1	0.1	4.2
7. Craft and related trades workers	7.5	10.7	7.4	8.6	9.0	4.0
8. Plant and machine operators and assemblers	7.0	5.9	3.4	5.1	4.2	4.3
9. Elementary occupations	11.8	10.5	13.5	18.3	12.4	10.5
Panel B. Men						
ISCO-88 broad occupations						
1. Legislators, senior officials and managers	9.2	7.2	4.1	2.5	5.9	10.2
2. Professionals	8.0	9.2	6.3	2.6	10.6	12.6
3. Technicians and associate professionals	15.0	9.1	12.2	9.4	10.0	12.8
4. Clerks	2.8	1.0	10.7	3.5	5.4	8.2
5. Service workers and shop and market sales workers	6.9	12.5	16.1	17.3	4.6	7.5
6. Skilled agricultural and fishery workers	2.1	5.1	10.6	29.2	0.5	4.7
7. Craft and related trades workers	32.2	33.5	16.3	15.0	34.6	23.9
8. Plant and machine operators and assemblers	17.4	15.4	15.3	10.0	20.2	12.4
9. Elementary occupations	6.4	7.0	8.6	10.5	8.1	7.6

a) Data for Australia, the Czech Republic, Ireland, Mexico and New Zealand refer to 1997.
b) Data refer to civilian labour force for Australia, Hungary, and New Zealand.
c) "Other OECD" refers to countries that were members prior to 1994, excluding Canada, Japan, Switzerland, Turkey and the United States.

Sources: ILO Yearbook of Labour Statistics (1998) for Australia, the Czech Republic, Ireland, Mexico and New Zealand; Labour Force Survey for Hungary; Economically Active Population Survey for Korea; BAEL database for Poland; and EUROSTAT, European Labour Force Survey for all EU members except Ireland.

experienced above-average growth in output per employed person, while Mexico substantially increased employment among its working-age population. Other developments were less positive, such as falls in employment rates in the Czech Republic, Hungary and Poland, and output per employed person in the Czech Republic and Mexico. As of 1998, all five countries remained clustered toward the bottom of the OECD country ranking for output per capita due to the combined effects of below-average employment rates (except in the Czech Republic) and output per employed person. It appears likely that much of the long-run payoff to the important economic reforms recently enacted in all five of these countries has yet to be realised.

The five new Member countries continue to differ substantially from the other OECD countries with respect to certain aspects of their composition of employment. For example, young workers account for above-average shares of employment in all five countries, and in Hungary, Korea and Mexico, the shares of women in employment are much below the other OECD average. There are also substantial differences with respect to the occupational composition of employment. But in some areas, such as the share of employment in the private sector, their composition of employment has shifted to be fairly close to the average for the other Member countries. While important differences remain in the industrial composition of employment, the gaps are diminishing. To the extent these shifts are associated with increased employment in more productive areas of the economy, they have the potential to contribute to the efforts of the new Member countries to catch-up economically.

NOTES

1. The accession dates were as follows: Mexico (18 May 1994), the Czech Republic (21 December 1995), Hungary (7 May 1996), Poland (22 November 1996) and Korea (12 December 1996). The last previous accession was New Zealand in May 1973.
2. Throughout this section, the term "other OECD" is used as shorthand for the 24 Member countries who joined the OECD prior to 1994.
3. The new Member employment/population ratios as a percentage of the OECD average ranged from 77 per cent (in Hungary) to 105 per cent (in the Czech Republic), whereas their output per employed person amounted to between 38 per cent (in Poland) and 60 per cent (in Korea).
4. The tracking of these medium-term developments is made more difficult by limitations in the available statistical indicators. Economic development and restructuring has prompted these nations to take steps to enhance their statistical systems and bring them up to OECD standards in order to monitor their increasingly complex economies. However, particularly for the labour force statistics early in the period considered here, strictly comparable indicators were not yet available for the Czech Republic, Hungary, Mexico or Poland. For the purposes of Chart 1.1, where there were gaps, special estimates were made (see Annex 1.A for sources and details).
5. The narrative descriptions of the economic situations of individual countries presented in this section draw extensively on the OECD *Economic Surveys* referenced in the bibliography to this chapter.
6. A key example is the extension of the Korean Employment Insurance System (EIS) in 1998 to cover workers in all firms (previously enterprises with 30 or fewer workers were exempted). The EIS provides employment security, vocational training and unemployment benefits and now covers most workers, although there remain some important exceptions (such as short-hours part-time workers).
7. For Hungary, the participation rates of men and women for 1989 are special estimates provided by the Central Statistical Office. Data on participation rates were not available for Mexico and Poland for that year.
8. The unemployment rates presented in Chart 1.2 are smaller than conventional unemployment rates, since they express unemployment as a share of the working-age population, rather than of the labour force. The conventional unemployment rates in 1998 were as follows, for women: Czech Republic (8.2), Hungary (6.9), Korea (5.8), Mexico (3.6), Poland (12.6) and other OECD (7.8, unweighted average); and for men: Czech Republic (5.0), Hungary (8.1), Korea (7.9), Mexico (2.6), Poland (9.5) and other OECD (6.5, unweighted average).
9. Under the system of economic planning, unemployment was rare as employers had strong incentives to hoard labour and the state used tough policies and social pressure to push most working-age individuals into jobs.
10. Mexico differed from the other OECD average in that the industry share of employment grew by nearly 2 per cent. However, this too reflected a convergence towards a more similar employment structure since Mexico began the period with a below-average share of employment in industry.

Annex 1.A

Methods Used to Track Labour Market Trends in the New OECD Member Countries

Table 1.A.1 identifies the data sources for the trend analysis presented in Chart 1.1. Particularly for the labour force statistics for the early years, strictly comparable indicators are not available for the Czech Republic, Hungary, Mexico and Poland. Where there are gaps in the standard OECD data series, special estimates were made to fill in missing values for the earliest years (as well as for values not yet available for the most recent years). The technique used was to backcast (or forecast) the values from the benchmark OECD data series according to the trends observed for proxy series from other sources. For two years, population data for Mexico were interpolated. Table 1.A.1 identifies the observations that were estimated as well as the proxy series that were used to form these estimates.

Table I.A.1. **Sources used for Chart 1.1**[a, b]

	Population	Working-age population	Total employment	Employment, aged 15 to 64	Output (real GDP)	Notes
Czech Republic	**OECD-LFS data were used for 1989-97;** UN population estimates and projections were used to estimate 1998-99.	**OECD-LFS data were used for 1989-97;** UN population estimates and projections were used to estimate 1998-99.	**OECD-LFS data were used for 1989-97;** MEI-QLFS was used to estimate 1998-99.	The total employment trend was used to backcast 1989-92; **OECD-LFS data were used for 1993-99**.	CSO (1998, pp. 34-35) was used to backcast 1989-90**; ADB data were used for 1991-99**.	The total employment data refer to persons aged 15 and over.
Hungary	**OECD-LFS data were used for 1992-97;** UN population estimates and projections were used to backcast 1989-91 and to estimate 1998-99.	**OECD-LFS data were used for 1992-97;** UN population estimates and projections were used to backcast 1989-91 and to estimate 1998-99.	HCSO (1994, p. 122) was used to backcast 1989-91; **OECD-LFS data were used for 1992-99**.	The total employment trend was used to backcast 1989-91; **LFS data provided by the Hungarian Central Statistical Office were used for 1992-99**.	**Hungarian Central Statistical Office**.	The total employment data refer to persons aged 15-74.
Korea	**OECD-LFS data were used for 1989-97;** UN population estimates and projections were used to estimate 1998-99.	**OECD-LFS**.	**OECD-LFS data were used for 1989-97;** MEI-QLFS was used to estimate 1998-99.	**OECD-LFS**.	**ADB**.	The total employment data refer to persons aged 15 and over.
Mexico	**OECD-LFS data were used for 1990, 1992-95 and 1997;** UN population estimates and projections were used to backcast 1989 and to estimate 1998-99; 1991 and 1996 were interpolated.	**OECD-LFS data were used for 1989-90, 1992-95 and 1997-99;** 1991 and 1996 were interpolated.	INEGI (1997, p. 48) was used to backcast 1989-90; **OECD-LFS data were used for 1991-98;** the trend from the ADB total employment series was used to estimate 1999.	INEGI (1997, p. 48) was used to backcast 1989-90; **OECD-LFS data were used for 1991-98 data;** the trend from the ADB total employment series was used to estimate 1999.	**ADB**.	The total employment data refer to persons aged 15 and over. Backcasting of employment series was done using the change in the number of salaried positions.
Poland	**OECD-LFS data were used for 1989-97;** UN population estimates and projections were used to estimate 1998-99.	**OECD-LFS data were used for 1989-97;** UN population estimates and projections were used to estimate 1998-99.	ILO (1998, p.112) was used to backcast 1989-91; **OECD-LFS data were used for 1992-97;** MEI-QLFS was used to estimate 1998; ADB was used to estimate 1999.	The total employment trend was used to backcast 1989-91; **OECD-LFS data were used for 1992-98;** the ADB total employment series was used to estimate 1999.	WDI was used to backcast 1989; **ADB data were used for 1990-99**.	The total employment data refer to persons aged 15 and over.
Other OECD	**OECD-LFS data were used for 1989-97;** UN population estimates and projections were used to estimate 1998-99.	**OECD-LFS data were used for 1989-97;** UN population estimates and projections were used to estimate 1998-99 as well as 1997 for Belgium, Greece and Iceland.	**OECD-LFS data were used for 1989-99 except ADB data were used for Switzerland;** UN population estimates and projections were used to estimate 1998-99 for France, Greece, Luxembourg, New Zealand, Norway and Portugal and 1997-99 for Belgium.	**OECD-LFS data were used for 1989-99** except ADB was used to backcast 1989 for Norway and 1989-90 and 1996 for Switzerland.	**ADB**; country weights are from *Economic Outlook,* June 1999; p. 224.	1. The country weights used for average output are based on 1991 GDP and purchasing power parities (PPPs). 2. The total employment data refer to persons aged 15 and over except for Norway, Sweden and US (16 to 74).

a) Benchmark series are shown in bold.
b) ADB denotes the OECD's Economics Department analytical database; MEI-QLFS denotes the OECD's main economic indicators database, quarterly labour force survey data; OECD-LFS denotes the OECD labour force survey database; WDI denotes the World Development Indicators database of the World Bank.

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Chapter 2

DISPARITIES IN REGIONAL LABOUR MARKETS

Summary

The *Employment Outlook* normally analyses labour markets in a cross-country, temporal perspective, based on the observation of national aggregates and time series. Yet, territorial differences matter across and within countries. The labour market that directly affects most people and firms is local in scope and, therefore, a clear understanding of sub-national labour markets is important for the design and implementation of effective employment policies. This chapter assembles recent evidence for a broad assessment of disparities in regional labour markets.

Previous editions of the *Employment Outlook* (1989, 1990) reported that variation in regional unemployment rates increased in many countries during the 1970s and early 1980s. This chapter shows that this variation generally remained stable or increased between 1985 and 1997. Regional disparities in unemployment are important and persistent in many countries. They are particularly large in Italy and Germany, where they are most evident at the level of large geographical areas and point to the existence of major regional divides. Belgium and Spain also display large variations in unemployment rates. In Australia, the United Kingdom and the United States, disparities are more evident at the level of smaller areas, indicating highly localised labour market problems. High unemployment regions generally suffer from related forms of labour market disadvantage such as low labour force participation and long-term unemployment.

The age, gender and skill composition of the regional populations accounts for only a fraction of the variation of unemployment. A specific regional dimension of the unemployment problem clearly exists in some countries. The regional dimension is less important in explaining variation in earnings, once account is taken of some personal characteristics of workers and the industry mix in each region. This can be explained by the existence of wage bargaining structures and institutions that are not differentiated across regions.

Dispersion is also evident in the pace of employment growth, but the position of individual regions seems to be slightly more volatile compared with unemployment rates. Variation in the rate of regional employment growth is related to changes in unemployment rates, but, in some cases, the simple link between the two characteristics is weak. While employment growth is usually a necessary condition for reducing unemployment, it does not automatically guarantee that such improvements will occur.

The analysis also explores the geographical mobility of labour and the industry specialisation of regional activity. The level of internal migration is relatively high in the United States, Japan, Canada and the United Kingdom. It is very low in Italy and Spain. Internal migration appears to respond to unemployment differentials in the direction predicted by economic theory, but the scale of movement appears insufficient to act as a rapid adjustment mechanism. Commuting is an alternative form of spatial mobility but the available evidence shows little significant relationship with unemployment at the regional level.

The rapid development of a global economy over the past decades does not seem to have been accompanied by increased specialisation in regional employment, at least in comparison with the structure of the national workforce. Furthermore, there does not seem to be a close relationship between the degree of regional specialisation and the pace of employment growth, relative to national developments. This suggests that sector-specific shocks are not likely to lead to a large increase in regional labour market disparities.

Introduction

It has been over ten years since the *Employment Outlook* last examined issues of regional labour markets [OECD (1989, 1990)]. A number of developments have occurred since that warrant a fresh examination of the topic. Many member countries endured a major downturn in the early 1990s and are now experiencing a long, if somewhat uneven, recovery. A number have implemented wide-ranging labour market and other structural reforms. Within the European Union, 11 countries have formed a single currency area, trade agreements have been established or furthered between countries in Europe and elsewhere, and globalisation is proceeding apace. Important technological changes have taken place and are likely to have affected greatly the functioning of labour and product markets. All of these developments have potentially significant impacts on regional labour markets.

The aim of this chapter is to make a broad assessment of disparities in regional labour markets. The following questions are addressed: How severe and persistent are regional disparities in unemployment and non-employment? Is there a regional dimension to unemployment? Do changes in the patterns of regional unemployment reflect differences in demographic and labour force pressures or in the pace of employment creation? What is the relationship between earnings and local labour markets? What is the role of labour mobility in shaping local labour market conditions? And, finally, how does the industrial structure of employment affect regional employment growth and unemployment?

The first section discusses why regional labour market disparities matter in terms of their impact on both the welfare of regional populations and the efficiency of labour markets. After an examination of some important methodological issues relating to the definition of regions, Section II surveys the nature and extent of regional labour market disparities and how they have evolved over time. It also investigates the extent to which the regional location of people and of economic activity affects their fortunes. The third section explores two issues relating to the adjustment of regions to changes in economic and labour market conditions:

- What is the available evidence on the relationship between labour mobility and regional labour markets?
- Does the industry structure of regional employment show any evidence of the increasing specialisation expected by some theorists to accompany closer economic integration?

The final section draws together the main results and outlines some policy implications.

Main findings

- Regional disparities in unemployment are important and persistent in many countries. They are particularly large in Italy and Germany, where they are most evident at the level of large geographical areas, thus pointing to the existence of major regional divides. Belgium and Spain also display large variations in unemployment rates. In many countries, notably Australia, the United Kingdom and the United States, disparities become more evident at the level of smaller areas, thus indicating highly localised labour market problems. High unemployment regions generally suffer from related forms of labour market disadvantage such as low labour force participation and, in many cases, long-term unemployment.
- Regional disparities in non-employment, a broader indicator of under-utilisation of labour resources than the unemployment rate, are also important in many countries, in particular across the smaller regions in Australia, Canada, Finland, Italy and the United States. High unemployment and high non-employment rates are often found together at the regional level.
- Within the European Union, France and the United Kingdom show the highest dispersion in earnings across regions; regional earnings dispersion is also relatively large in the Czech Republic and the United States. In a little over one half of the countries there is a negative correlation between the level of unemployment and the level of earnings across regions.
- A specific regional dimension of the unemployment problem clearly exists in some countries. That is, the age, gender and skill composition of regional populations account for only a fraction of the variation in unemployment. The regional dimension is less important in explaining variation in earnings, once account is taken of some personal characteristics of workers and the industry mix in each region. The countries for which the regional dimension explains some of the variation in earnings do not always correspond to those where the regional dimension explains variation in unemployment.
- Changes in the pattern of unemployment rate differentials across regions are related to differences in labour supply pressures stemming from demographic or participation rate changes as well as to the different capacity of regions to generate employment. The industry mix can explain differences in employment performance across regions only to a limited extent.
- The level of internal migration is relatively high in the United States, Japan, Canada and the United Kingdom. It is very low in Italy and Spain. In most countries for

which data are available, internal migration appears to respond to unemployment differentials in the direction predicted by economic theory. In Germany and Italy, the correlation between net migration and unemployment rates by region is quite strong. However, the scale of movement is not sufficient to act as a rapid adjustment mechanism. Commuting is an alternative form of spatial mobility, but the available evidence shows little significant relationship between it and unemployment at the regional level.

- The rapid development of a global economy over the past decades does not seem to have been accompanied by an increase in regional specialisation, at least in comparison with the structure of the national work force. Furthermore, there does not seem to be a close relationship between changes in the degree of regional specialisation and disparities in employment growth.

I. Setting the framework for analysis

Before starting an analysis of regional labour market disparities, it is important to ask why they are a problem and what, if anything, should be done to reduce them. The answers to both questions depend in large part on how the causes of regional inequality are perceived. This is, however, not a simple matter. Developing an adequate explanation of the more or less persistent variation in regional labour markets and the existence of regional disadvantage is a long-standing challenge for regional scientists and economists.

In theory, regional inequalities may be due to fundamental differences in the capacity for economic growth of different regions. These differences result from the uneven geographical distribution of basic endowments and technology, and the characteristics of the regional population, labour force and capital stock. Consequently it is possible, at least in theory, that regional labour market disparities represent an optimal equilibrium where an attractive environment and other amenities encourage people to remain in, or move to, regions where growth is lagging and unemployment high. Certain mountain and coastal areas across the OECD area provide examples of the preference for leisure-related amenities over work. To the extent that persistent regional inequalities reflect the preferences of residents, the issue of regional labour market disparities need not be a matter of great concern.

However, wide and persistent disparities in unemployment, employment and participation may be the consequence of distortions or market failures that imply welfare costs for specific regions, groups within them, and for whole nations. Distortions have been traditionally viewed in terms of impediments to adjustment mechanisms that would otherwise act to minimise the extent of regional deviations from long-run performance. In the case of a negative (or positive) demand shock, a fall (or an increase) in wages is expected to be accompanied by declines (or growth) in regional labour force participation, movement of labour away from weaker to stronger regions and adjustment of business output and relocation of capital. Information gaps and imperfect competition in labour and product markets are examples of impediments to adjustment that may lead to larger regional disparities than underlying fundamentals would dictate.

A large body of empirical research points to either migration or labour force participation as the major channel of regional labour market adjustment [Blanchard and Katz (1992); Debelle and Vickery (1999); Decressin and Fatas (1995); Obstfeld and Peri (1998)]. Within the United States, adjustment to labour-demand shocks appears to take place mainly via migration flows, while within the European Union labour supply responds mainly through changes in the participation rate. These studies suggest that governments may be able to facilitate the adjustment of regions by modifying those institutions and policies that hinder labour mobility. These may include high transaction costs involved in changing houses, the limited degree of portability of social benefits, wage rigidities and the absence of appropriate information channels about job opportunities outside the region of residence.

These empirical studies, however, have addressed the question of regional labour market adjustment with respect to the labour force as a whole. A closer look at what happens to specific labour force groups would probably provide better guidance for policy makers. For example, Mauro and Spilimbergo (1999) show that, in Spain, workers with different educational levels respond in different ways to regional labour demand shocks: the high-skilled are more likely than the low-skilled to migrate rather than remaining unemployed or dropping out of the labour force. This suggests that policy makers should devote particular attention to policies that can help low-skilled groups. Furthermore, migration is not the only form of mobility that allows regional workforces to secure new jobs. Commuting may be another important spatial labour supply adjustment mechanism (see Section III).

Regional disparities may also arise from other problems that are unlikely to be overcome by market adjustment mechanisms. Preferences of residents may partly reflect the lack of viable alternatives rather than a simple, unfettered choice for a particular location. For example, if the attractiveness of lagging regions for some sections of the population hinges on the presence of social networks and support or on the availability of affordable housing,

this implies that their locational choices are constrained by the lack of access to similar facilities and advantages in more dynamic regions. Furthermore, regional growth may be shaped by processes of cumulative causation that foster stronger growth in those regions that are already advantaged and leave weak regions behind – the so-called "virtuous circle" hypothesis. On the other hand, some disadvantaged regions may have the potential to prosper and governments may increase overall economic efficiency and welfare by providing some of the infrastructure and seed capital needed to stimulate a self-reinforcing development in these regions.

While the role of labour supply as an inter-regional adjustment mechanism continues to receive attention in the literature, greater recognition is also being given to the structure of labour demand as an important influence on regional labour markets. Persistent regional labour market differentials may reflect differences in the demand for products and labour. While standard economic theory has explained spatial differences in production mainly through differences in geography, endowments and technology, "new economic geography" models, such as those developed by Krugman (1991*a*, 1991*b*), provide a novel explanation of the location choices of firms. According to these models, firms tend to cluster together in the presence of externalities of various kinds that generate increasing returns to scale. As a consequence, regions with similar underlying characteristics may develop different sectoral structures and follow different growth paths.

II. Regional labour market disparities: from theory to empirical analysis

A. The selection of the relevant regional unit

The results of a cross-country investigation of regional labour markets depend critically on the choice of an appropriate spatial framework for analysis. Ideally, the unit of observation should reflect the territorial coverage of actual labour markets as described, for example, by the commuting patterns of workers. Box 1 illustrates how some national statistical agencies have defined such functional labour markets. In practice, the possibilities of designing a territorial grid for analysis are limited by the existing statistical frameworks, which generally use political or administrative rather than functional units. These are the units that are analysed in this chapter.[1] Apart from

Box 1. **Defining functional labour markets**

The most appropriate spatial framework depends on the purpose of the analysis that will be conducted with it. In the literature, definitions about what constitutes a spatial or local labour market vary considerably. Two main approaches can be distinguished. In one, the labour market is defined as a homogenous area sharing common labour market characteristics. Cluster analysis is the technique most often used to identify such areas. In the other approach, the local labour market is defined as a nodal area, the boundaries of which are traced with the goal of containing the inter-relations between its constituent entities. A typical application of this approach is the mapping of functional labour markets on the basis of the commuting patterns of workers.

The latter approach has prevailed in the attempts made by national statistical agencies to define functional labour markets. Examples are the Employment Zones for France, the Travel-To-Work Areas (TTWAs) for the United Kingdom, the Local Labour Systems for Italy and, for the United States, the Economic Areas (see Annex 2.A).

The Employment Zones (Zones d'Emploi) break up the whole French territory with no omissions or overlaps. Each zone is defined so that the majority of the resident population has a job within its borders and that the firms located there hire the majority of their workforce from within the same area. The zones are made up of a finite number of counties, but are constrained to regional administrative boundaries only insofar as these do not interfere with the patterns of the observed commuting flows. There are currently 348 such zones.

The UK's TTWAs are constructed using data on employment and travel from home to work collected through the decennial Census of Population. The boundaries for the current 308 TTWAs are based on the 1991 Census. The criteria for their definition are that in areas with a working population of between 3 500 and 20 000 people, the number of people living and working in the area should be 75 per cent of both the total number of resident workers and of the total regional workforce. In areas where the working population exceeds 20 000, a level of self-containment as low as 70 per cent is accepted. TTWAs are constrained to national boundaries (England, Wales, Scotland, Northern Ireland).

Italy's Local Labour Systems (Sistemi Locali del Lavoro) have also been defined as self-contained labour markets with respect to daily commuting trips. The Italian territory is partitioned into 748 local labour systems using the Population Census of 1991. Local labour systems are then defined as Industrial Districts if they meet certain criteria of homogeneity in their production structure (*e.g.* manufacturing vocation, industry specialisation, small firm size). In this case, therefore, they are designed using the homogenous area approach described above.

reasons of data availability, the use of administrative or political units is supported by the fact that labour market and other structural policies are often decided and/or implemented at this level. Furthermore, the boundaries of administrative units are stable over relatively long time periods, whereas the boundaries of functional units need to be redesigned frequently. For example, if the local labour market is designed on the basis of commuting patterns, its boundaries are clearly affected by changes in transport access, commuting time and the distribution of knowledge of alternative employment opportunities, all of which may depend to a large extent on the income and socio-economic characteristics of workers and job-seekers.

As far as possible, this chapter's discussion of regional labour market statistics and indicators of disparity will be accompanied by an analysis of sensitivity to the level of regional aggregation used. Two levels of territorial disaggregation are used, identified mainly on the basis of population size. The first level includes almost 200 regions for all the OECD countries for which data are available. It is based, for European countries, on the EUROSTAT NUTS (Nomenclature of Territorial Units for Statistics) Level 1 regions and, for North America, on states or provinces. These units are probably too big to allow understanding of all the economic forces that are linked to the territory, but they help to detect major divides within a country and can be useful when looking at country groupings. Furthermore, these are sometimes the only units for which data are available. The second level uses administrative units that are small enough to resemble functional units. These are NUTS Level 2 units in the European Union, and units of roughly comparable size in the other countries. For the United States, actual functional units (economic areas) are used. Information at this level of territorial disaggregation is available for over 550 "regions" in 25 OECD countries.

In spite of the effort made to harmonise the concept of territorial units, considerable heterogeneity remains. This is evident not only in terms of population size, but also in terms of area, population density, degree of urbanity or rurality, economic weight and administrative powers. At Level 2, within the European Union, average population levels vary by a factor of 4 across countries, and the ratio between the minimum and the maximum regional population is almost 100. Problems of comparability are even more evident when widening the scope to the remaining OECD countries. Over all the regions for which data are available, the ratio between the minimum and maximum regional population is almost as large as 500. Furthermore, there is considerable variation in the population density of regions. For example, some remote regions in Australia or in Canada cover huge areas, but are very sparsely populated. Obviously, the policy issues that are relevant to the latter regions will be of a different nature than elsewhere, the main problem being one of accessibility, either to jobs, education or transport infrastructure. On the other hand, average population density is very high in Korea and Japan.

Detailed information on the regional units used for analysis, including their population, area and population density is contained in Annex 2.A. For those countries for which data are available only at one level of territorial disaggregation, the units have been classified into Level 1 or Level 2 on the basis of their population size.

B. Patterns of regional unemployment and participation rates across OECD countries

The distribution of unemployment rates across the OECD area

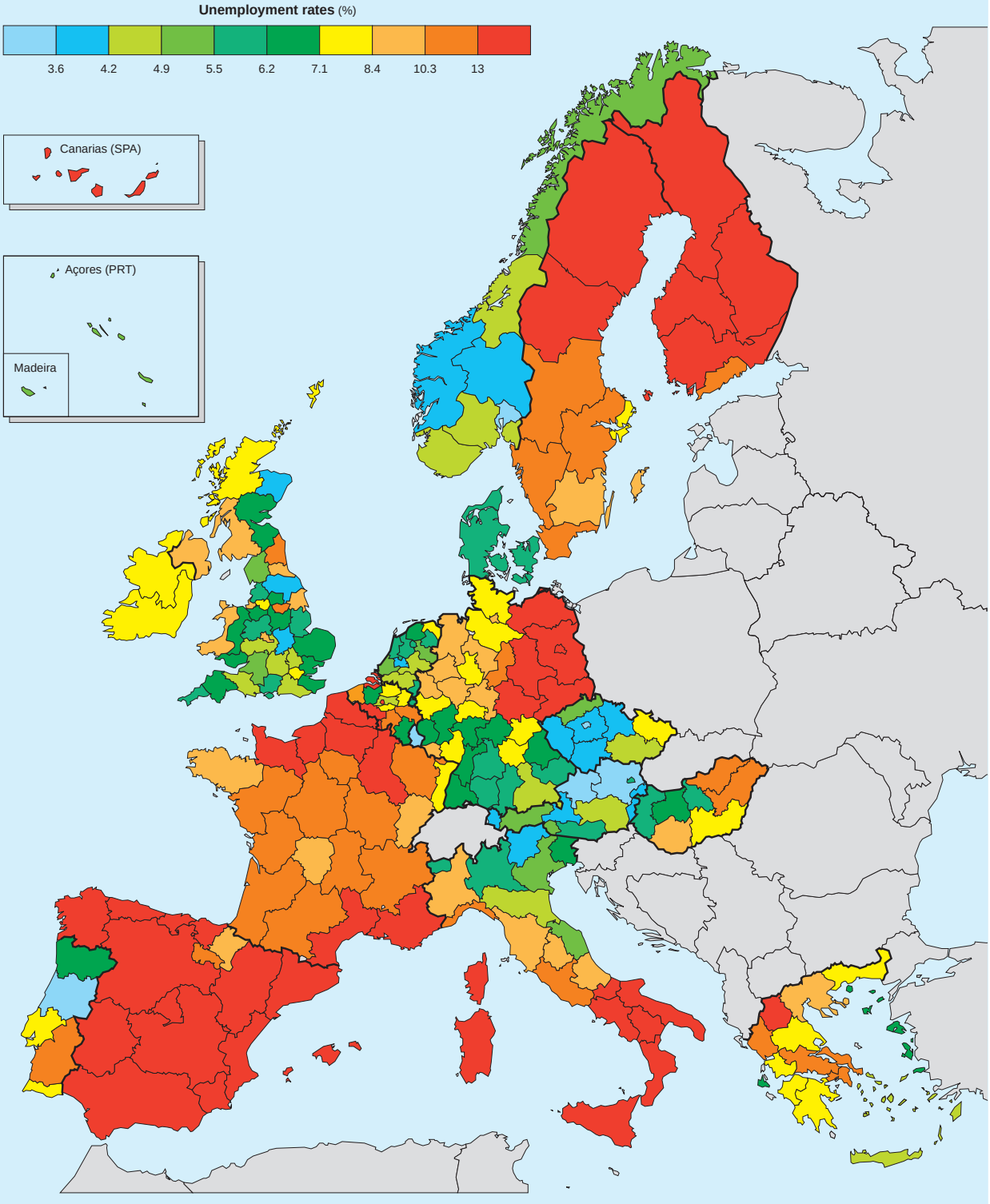
Chart 2.1 shows the patterns of regional unemployment in OECD countries. Level 2 regions are mapped for all countries except Australia and Mexico.

In Europe, the geographical pattern of regional unemployment reveals national specificities, but also shows groups of similar regions spanning national boundaries. The central-eastern part of continental Europe, excluding Hungary, displays relatively low levels of unemployment. Very high regional unemployment rates, of about 8 per cent and above, are almost universal in Sweden, Finland, France and Spain. In Spain, much of the dispersion in unemployment rates is concealed by the fact that unemployment rates range from a minimum of 10 to a maximum of 32 per cent of the labour force, most of this range lying within the top colour category. In Austria, the Czech Republic, the Netherlands and Norway regional unemployment rates are markedly lower. Italy and Germany register major regional divides, with the southern half of Italy and the eastern portion of Germany recording uniformly high (above 13 per cent) unemployment rates. The United Kingdom spans 8 of the 10 ranges of unemployment rates, and high-unemployment areas are scattered across the country.

The United States displays a majority of regions with unemployment rates in the lowest 4 ranges of the colour scale, but still retains some relatively large high-unemployment areas, particularly in Arizona and New Mexico in the south central west and the hinterland along the West Coast. In Canada, serious regional unemployment problems are evident across the eastern half of the country and in a large part of British Columbia.

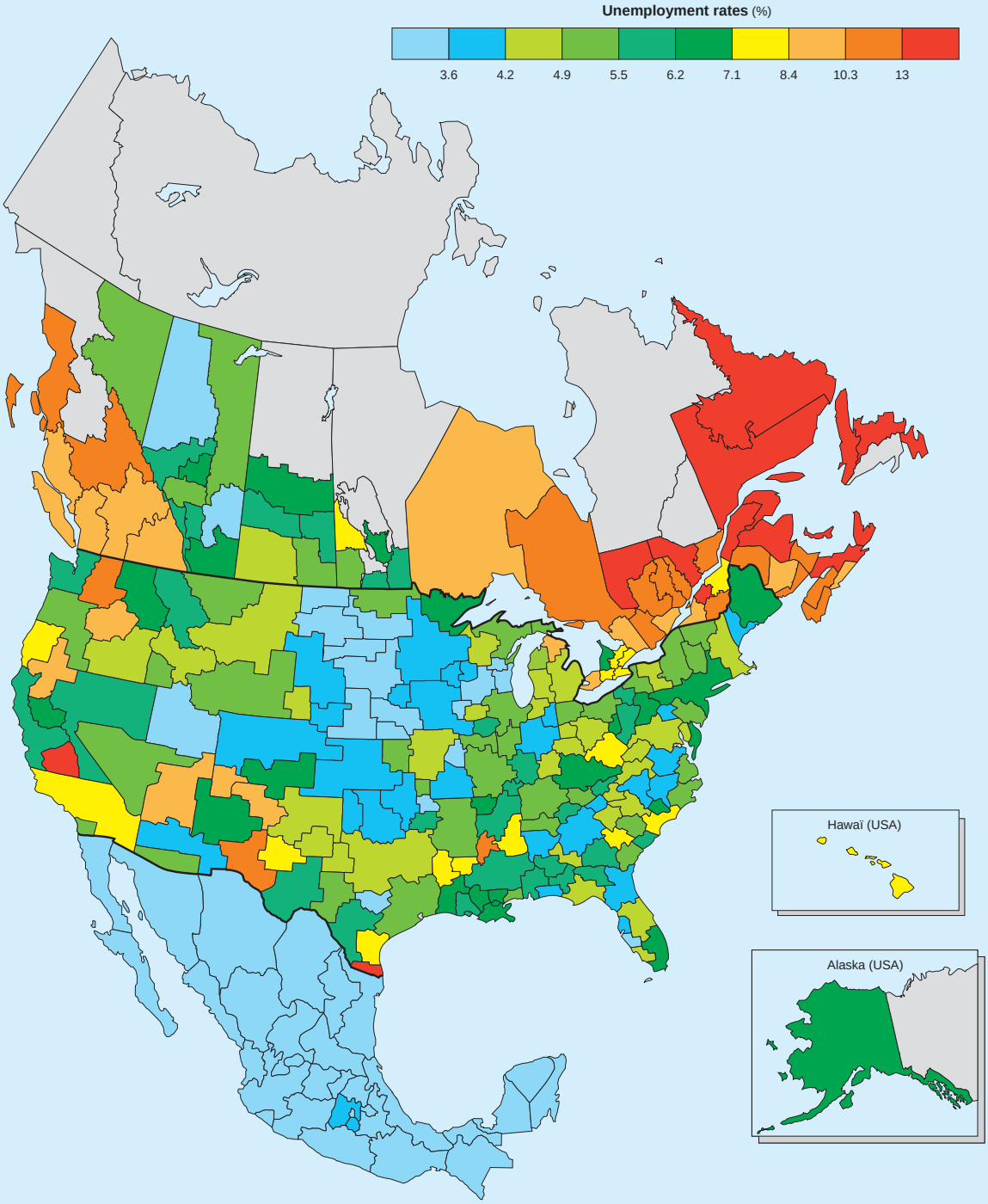
The map for Japan reflects the situation in 1995. In all regions, unemployment did not exceed the lower half of the OECD-wide scale. The situation has deteriorated during the Asian financial crisis and the lingering downturn in Japan, but recent data on unemployment rates by prefecture are not

Chart 2.1. **Unemployment rates in regions of OECD countries,[a] annual averages 1997[b]**



EUROPEAN UNION, THE CZECH REPUBLIC, HUNGARY AND NORWAY

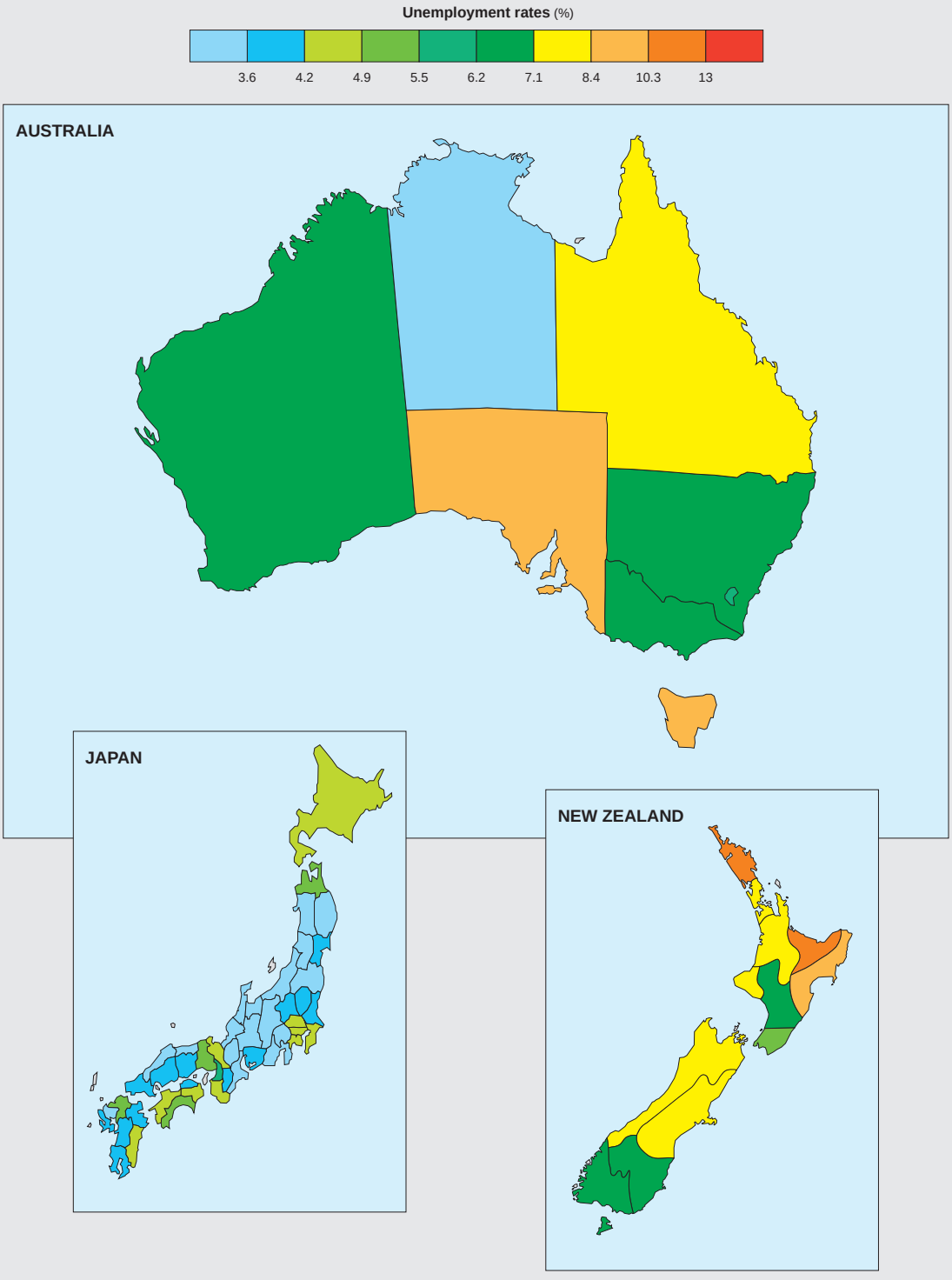
Chart 2.1. **Unemployment rates in regions of OECD countries,[a] annual averages 1997[b]** *(cont.)*



a) Regional Level 2 except for Australia and Mexico: Level 1.
b) See Table 2.1, footnote *a)*.
Sources: See Annex 2.B.

CANADA, MEXICO AND THE UNITED STATES

Chart 2.1. **Unemployment rates in regions of OECD countries,[a] annual averages 1997[b]** *(cont.)*



a) Regional Level 2 except for Australia and Mexico: Level 1.
b) See Table 2.1, footnote *a)*.
Sources: See Annex 2.B.

available to see how the distribution of unemployment across the country has changed. 1998 data at the regional Level 1, shown in Table 2.1, show that dispersion remains subdued.

Regions in Australia, with the major exception of the Northern Territory, and in New Zealand have unemployment rates in the upper half of the colour scale. In Australia, the level of disparity is probably restrained by the use of Level 1 regions.

Inter-regional disparities in unemployment rates across the OECD area

Table 2.1 presents, for each country and for both levels of the territorial grid, two summary indicators of the geographic dispersion of unemployment – the weighted standard deviation and the weighted coefficient of variation – as well as the minimum and maximum regional unemployment rates. In terms of either summary indicators and both levels of territorial breakdown, regional variation in unemployment is strikingly high in Italy and Germany. Belgium also displays large variations. The relative position of the remaining countries depends on the indicator of disparity that is observed.

The standard deviation and coefficient of variation can sometimes reveal different pictures. For instance, in the case of Spain, the standard deviation indicates high unemployment dispersion in absolute terms, whereas the coefficient of variation indicates moderate dispersion relative to the high level of the nation-wide unemployment rate. The opposite is true

Table 2.1. **Indicators of regional unemployment rate disparities, 1997** [a]

	Average unemployment rate	Level 1					Level 2				
		Number of regions	Standard deviation [b]	Coefficient of variation [c]	Minimum	Maximum	**Number of regions**	Standard deviation [b]	Coefficient of variation [c]	Minimum	Maximum
Australia	7.0	**8**	0.8	11.3	3.1	8.6	**59**	2.3	33.8	2.5	12.1
Austria	4.5	**3**	0.5	11.6	3.8	5.1	**9**	1.2	26.1	3.0	6.1
Belgium	8.9	**3**	3.1	34.4	6.4	13.4	**11**	3.6	40.4	4.5	15.4
Canada	9.2	**10**	2.3	24.7	6.0	18.8	**66**	2.7	29.8	3.3	23.4
Czech Republic	4.8	**1**	–	–	–	–	**8**	2.0	41.1	2.4	8.4
Finland	14.3	**1**	–	–	–	–	**5**	2.7	18.7	10.8	18.7
France	12.0	**8**	2.3	19.2	9.6	16.9	**22**	2.5	20.5	7.8	18.1
Germany	9.9	**16**	4.3	43.3	5.9	20.4	**36**	4.3	43.8	4.8	20.4
Germany [d]	8.0	**11**	2.0	24.4	5.9	13.4	**31**	2.1	25.9	4.8	13.4
Greece	9.6	**4**	2.0	20.6	4.7	11.6	**13**	2.4	24.7	4.3	13.8
Hungary	7.8	**1**	–	–	–	–	**7**	2.4	30.5	5.7	12.2
Ireland	7.7	**1**	–	–	–	–	**2**	0.3	4.1	7.5	8.2
Italy	12.3	**11**	7.4	60.5	5.4	25.6	**20**	7.5	61.0	4.1	25.6
Japan	4.1	**10**	0.7	16.9	2.9	4.9	**47**	1.0	24.4	2.4	10.3
Korea	6.8	**1**	–	–	–	–	**15**	1.7	24.7	3.4	8.9
Mexico	2.3	**32**	1.0	43.9	0.7	4.0	**..**	..	..	..	..
Netherlands	5.1	**4**	0.5	9.9	4.6	6.5	**12**	0.8	15.5	4.0	7.8
New Zealand	7.6	**1**	–	–	–	–	**12**	1.5	20.1	5.2	11.8
Norway	4.1	**1**	–	–	–	–	**7**	0.7	16.9	3.0	5.3
Portugal	6.7	**3**	0.3	3.9	5.5	6.8	**7**	1.8	27.4	3.4	10.4
Spain	21.1	**7**	4.7	22.1	16.0	30.0	**17**	5.6	26.5	10.0	31.9
Sweden	10.4	**1**	–	–	–	–	**8**	1.9	18.2	7.7	13.6
United Kingdom	7.1	**12**	1.5	20.7	5.1	9.6	**37**	2.2	31.0	3.7	13.0
United States	5.5	**51**	1.1	19.5	3.0	8.6	**172**	1.6	28.7	2.7	17.3
EU [e]	10.7	**76**	5.7	53.4	2.5	30.0	**201**	5.9	55.0	2.5	31.9
OECD [f]	7.1	**192**	4.6	64.5	0.7	30.0	**594**	4.7	62.5	2.4	31.9

.. Data not available.
– Not applicable.

a) Data refer to 1999 for Australia; to 1998 for Hungary, Ireland, Japan (average unemployment rate and Level 1), Korea, Mexico and New Zealand; to 1996 for the United States; to 1995 for Japan (Level 2).
b) Standard deviation weighted by the level of the labour force in the corresponding year.
c) Standard deviation divided by the average unemployment rate in the country x 100.
d) Data refer to western Germany.
e) The indicators of disparity have been calculated from the values of each region belonging to the European Union. Denmark and Luxembourg, which constitute one region each at both levels of territorial breakdown, are included.
f) The indicators of disparity have been calculated from the values of each region belonging to the countries listed above, plus Denmark and Luxembourg, which constitute one region each at both levels of territorial breakdown.

Sources: See Annex 2.B.

for the Czech Republic and Mexico, where the measured nation-wide unemployment rate is relatively low.

The minimum and maximum unemployment rates provide complementary information to that expressed by the two summary indicators. The ratio between the top and bottom rate at Level 1 is highest in Italy, where the largest regional unemployment rate (in the region of Campania) is almost five times the rate in the lowest-unemployment region (the North East). At Level 2, Canada and the United States record the highest ratio, followed by Italy. The two former countries, however, have low standard deviations and moderate coefficients of variation. This implies that the distribution of their regional unemployment rates is relatively narrow.

It is interesting to compare disparities measured at the two different levels of territorial disaggregation. Dispersion measured at Level 2 is normally higher than at Level 1, which is to be expected given that the number of regions increases. This is particularly the case in Australia, the United Kingdom and the United States. In these countries, labour market disadvantage appears to be concentrated in small regions within broad geographical areas. By contrast, the level of regional breakdown seems to make little difference in Italy and Germany: the north-south divide in Italy and the impact of economic restructuring in the eastern Länder of Germany are evident at the level of broad areas, within which there is relative homogeneity.

Table 2.2 shows the dispersion of regional unemployment rates by gender and age. The pattern of dispersion for

Table 2.2. **Regional unemployment rates by gender, age and duration: coefficient of variation and correlation with overall regional unemployment rates, 1997** [a]

	Regional level	Number of regions	Coefficient of variation [b]			Correlation between unemployment and:		
			Female unemployment rate [c]	Youth unemployment rate [d]	LTU [e]	Female unemployment rate [c]	Youth unemployment rate [d]	LTU [e]
Australia	2	59	36.0	30.2	43.7	0.87	0.73	0.67
Austria	2	9	23.4	25.8	49.7	0.89	0.91	0.22
Belgium	2	11	35.0	45.2	9.0	0.96	0.97	0.86
Canada	2	66	27.6	29.4	..	0.95	0.87	..
Czech Republic	2	8	35.1	37.6	25.5	0.95	0.98	0.92
Finland	2	5	18.8	18.8	3.5	0.95	0.96	–0.69
France	2	22	20.7	22.5	7.0	0.97	0.72	0.48
Germany	2	36	55.1	23.2	13.5	0.99	0.59	0.46
Germany [f]	2	31	26.2	25.6	14.7	0.98	0.94	0.72
Greece	2	13	24.5	20.2	11.1	0.96	0.94	0.57
Hungary	2	7	25.7	30.4	4.5	0.99	0.98	0.60
Italy	2	20	62.4	55.7	23.3	0.99	0.97	0.79
Japan	2	47	27.5	24.0	..	0.99	0.95	..
Korea	2	15	32.0	12.7	..	0.98	0.34	..
Mexico	1	32	44.4	50.5	..	0.89	0.97	..
Netherlands	2	12	14.7	21.4	15.8	0.98	0.91	0.53
New Zealand	2	12	25.1	18.8	15.0	0.90	0.86	0.08
Norway	2	7	19.1	15.5	35.7	0.77	0.93	–0.34
Portugal	2	7	36.4	22.5	8.6	0.87	0.81	–0.41
Spain	2	17	25.3	17.6	13.5	0.97	0.83	0.08
Sweden	2	8	16.1	26.2	..	0.79	0.96	..
United Kingdom	2	37	30.3	28.9	..	0.96	0.96	..
United States	1	51	20.4	19.6	..	0.88	0.91	..
EU [g]		201	66.7	66.5	24.7	0.94	0.82	0.37
OECD [h]		505	73.7	71.8	43.7	0.93	0.86	0.12

.. Data not available.
a) Data refer to 1999 for Australia; to 1998 for Hungary, Ireland, Korea, Mexico and New Zealand; to 1996 for the United States; to 1995 for Japan.
b) Coefficient of variation weighted by the level of the labour force in the corresponding year.
c) Female unemployed persons as a share of female labour force.
d) Unemployed persons aged 15-24 divided by the labour force aged 15-24.
e) Long-term unemployment (12 months or more) as a share of total unemployment.
f) Data refer to western Germany.
g) The coefficients of variation and correlation rates have been calculated from the values of each region belonging to the European Union. Denmark and Luxembourg, which constitute one region each at both levels of territorial breakdown, and the two Level 2 Irish regions are included.
h) The coefficients of variation and correlation rates have been calculated from the values of each region belonging to the countries listed above, plus Denmark and Luxembourg, which constitute one region each at both levels of territorial breakdown, and the two Level 2 Irish regions.
Sources: See Annex 2.B.

youths and women is similar to that displayed by total unemployment rates: Italy always displays the largest variations, followed by Germany (but only for female unemployment), Mexico and Belgium.[2] The correlation between regional unemployment rates by gender and age and the overall rates is very high: regions with high overall unemployment also have high female and youth unemployment.[3] Korea and Germany are major exceptions as far as youth unemployment is concerned. Table 2.2 also shows regional variation in the incidence of long-term unemployment, which may provide some idea of the extent of structural problems underlying regional unemployment patterns. Among the countries for which data are available, Australia and Austria display the largest variations. The positive association between regional unemployment and the incidence of long-term unemployment is quite strong in Belgium, the Czech Republic, Germany and Italy, but weak in most of the remaining countries; the correlation is even negative in Norway and Portugal.

The pattern of regional unemployment rates may reflect the underlying skill composition of regional labour forces and populations. Table 2.3 shows regional variation in the skill composition of the regional populations, measured by the level of educational attainment, and its association with unemployment rates. In almost all countries, variation in the share of population with low skills is moderate and lower than variation in the share of population with high educational attainment. The three exceptions are Canada, New Zealand and the United States, where variation is greater for the low-attainment proportion. In these countries, there are a number of regions where large proportions of the population have not completed upper secondary education. Many of these regions are rural or isolated areas where access to, and demand for, upper secondary and post-secondary education may be limited. In the United States, the strong variation in the size of the low-attainment group may also reflect complex patterns of socio-economic barriers to completion of secondary school. New York and Rhode Island illustrate this complexity well because these states have relatively large proportions of their population in both the low- and high-attainment groups.

Although the association between unemployment rates and educational attainment across regions is often quite weak, the patterns observed confirm those noted at

Table 2.3. **Skill composition of the population by region: coefficient of variation [a] and correlation with unemployment rates, 1997 [b]**

	Regional level	Number of regions	Share of population with low educational attainment [c] (coefficient of variation)	Correlation with unemployment rate	Share of population with high educational attainment [c] (coefficient of variation)	Correlation with unemployment rate
Belgium	2	11	6.8	0.24	20.0	0.02
Canada	2	66	19.7	0.37	9.6	–0.01
Czech Republic	2	8	13.1	0.79	46.6	–0.60
Finland	2	5	9.7	0.53	22.3	–0.79
France	2	22	10.2	0.49	31.5	–0.27
Greece	2	13	16.9	–0.34	28.2	0.40
Hungary	2	7	13.9	0.17	29.4	–0.25
Italy	2	20	5.1	0.56	18.4	–0.05
Korea	2	15	23.5	–0.79	25.2	0.71
Mexico	1	32	19.2	–0.59	24.1	0.57
Netherlands	2	12	7.8	0.44	18.0	–0.47
New Zealand	2	12	13.2	0.33	7.2	–0.26
Norway	2	7	12.8	0.70	26.4	–0.73
Portugal	2	7	7.1	–0.14	26.3	0.08
Spain	2	17	7.6	0.42	24.6	–0.38
United States	1	51	15.7	0.30	14.0	–0.11
EU [d]	2	111	19.9	0.23	37.0	–0.08
OECD [e]		309	17.9	0.40	14.1	–0.12

a) Coefficient of variation weighted by the level of the labour force in the corresponding year.
b) Data refer to 1998 for Korea, Mexico and New Zealand.
c) Low and high educational attainment correspond to less and more than upper secondary education, respectively.
d) The coefficients of variation and correlation rates have been calculated from the values of each region belonging to the European Union. Denmark and Luxembourg, which constitute one region each at both levels of territorial breakdown, and the two Level 2 Irish regions are included.
e) The coefficients of variation and correlation rates have been calculated from the values of each region belonging to the countries listed above, plus Denmark and Luxembourg, which constitute one region each at both levels of territorial breakdown, and the two Level 2 Irish regions.
Sources: See Annex 2.B.

Box 2. Factors accounting for regional variation in unemployment

Average measures of labour market disparities across regions only give a partial picture of differences in labour market outcomes. Regional variation in unemployment rates may simply reflect differences in the composition of regional labour forces in terms of age, gender or skill. This box considers the extent to which variation in unemployment can be attributed to the characteristics of the labour force and other inherent features of regions. It does so through a simple variance decomposition exercise where, for each country, unemployment rates by region, year, age group, gender and level of educational attainment are regressed against a set of dummies related to the corresponding years, age groups, gender and levels of educational attainment.[4] The share of variance explained by each variable corresponds to the reduction in the residual term of the regression due to adding the variable after all other variables have been taken into account.

Table 2.4 shows the results of this exercise. A regional dimension of the unemployment problem clearly exists in some countries. In Canada, Germany (even when only the former western Germany is considered), Italy and the United Kingdom, regional dummies explain individuals' unemployment status to a significant extent (more than 70 per cent of the explained variance), after having controlled for personal characteristics. By contrast, most of the explained variation in unemployment is accounted for by age and gender in France, Greece, the Netherlands, Spain, and Sweden, and by education in the Czech Republic, Hungary, Norway and the United States.

Table 2.4. **Decomposition of the variance of unemployment rates across regions** [a]

Persons aged 25 to 64 years

	Regional level	Number of regions	Period	Share of variance associated with the regional dummies	Share of variance associated with the age and gender dummies	Share of variance associated with the educational attainment dummies	R-squared	Number of observations
Belgium	2	11	1992-1998	0.30	0.15	0.32	0.74	712
Canada	1	10	1980-1998	0.20	0.10	0.36	0.65	2 280
Canada	2	66	1987-1998	0.44	0.15	..	0.61	2 934
Czech Republic	2	8	1998	0.09	0.04	0.58	0.81	93
France	2	22	1983-1997	0.28	0.39	..	0.66	638
Germany	2	36	1991-1997	0.64	0.06	..	0.72	360
Germany [b]	2	31	1983-1997	0.55	0.15	..	0.70	806
Greece	2	13	1992-1998	0.13	0.45	0.06	0.68	807
Hungary	2	7	1997	0.24	0.04	0.50	0.78	68
Italy	2	20	1992-1998	0.53	0.24	0.04	0.75	1 239
Netherlands	2	12	1988-1997	0.07	0.59	..	0.66	240
Norway	2	7	1989-1998	0.01	0.18	0.48	0.60	834
Portugal	2	7	1992-1998	0.26	0.14	0.14	0.51	360
Spain	2	17	1992-1998	0.27	0.41	0.09	0.76	1 173
Sweden [c]	2	8	1990-1994	0.28	0.42	..	0.71	80
United Kingdom	2	31	1996-1998	0.65	0.17	..	0.82	222
United States	1	51	1980-1998	0.07	0.05	0.46	0.54	10 585

.. Data not available.

a) The table reports the results of an analysis of variance exercise where the unemployment rate for each group of the population, region and year, weighted by the corresponding level of the labour force, has been regressed against a set of categorical variables. These refer to the corresponding regions, age groups, gender, educational attainment levels and years. There are two age groups – 25 to 54 and 55 to 64 – and three educational attainment levels – low, medium and high. The share of variance associated with each variable corresponds to the reduction in the residual term of the regression due to adding the variable after all other variables have been taken into account. In this procedure, the results are not sensitive to the order in which the variables are added but the shares of variance do not necessarily sum up to the R-squared.

b) Data refer to western Germany.

c) The unemployment rates for each group and all years are weighted by the labour force of 1995.

Sources: See Annex 2.B.

What might the regional dimension represent? Traditional analytical perspectives would stress the importance of physical and human capital or natural resources. Notably, the regional dimension may reflect differences in the demand for workers and products. It could be expected that one of the most important labour demand factors is the mix of industries in the region. The available evidence suggests, however, that only a weak relationship exists between unemployment and the sectoral composition of regional workforces, at least when defined in terms of the three broad sectors of economic activity. The correlation between regional unemployment rates and the proportions of employment in agriculture, manufacturing and services is generally very low.[5]

Box 2. **Factors accounting for regional variation in unemployment** *(cont.)*

Second, the regional dimension may incorporate characteristics of the labour supply that have not been explicitly taken into account in the model. For example, if labour market experience and ethnicity are distributed unevenly across regions and if they contribute to unemployment, they will be reflected in the regional dimension of the estimates reported in Table 2.4. Finally, the regional dimension may incorporate aspects like the geographic location of regions[6] and the presence of regional amenities like the attractiveness of the cultural, natural and working environments. These are distributed unevenly within countries and may be valued unequally by workers.

Some economists claim that the emphasis on factor endowments and natural resources only takes a partial view of the process of economic growth and the human well-being of countries, regions or cities because it overlooks the way in which the economic actors interact and organise themselves. The missing link would be "social capital", defined as "the norms and social relations embedded in the social structures of societies that enable people to co-ordinate action to achieve desired goals".[7] There is some evidence that social capital is crucial for the sustainable development of societies, through the improved information-sharing, co-ordination of activities and collective decision making that it enables. For example, Putnam *et al.* (1993) argue that the higher density of voluntary associations among people in northern Italy explains the region's economic success relative to southern Italy, where such associations are less frequent.

the national level for OECD countries [OECD (2000)], at least as far as the low-skilled are concerned. The rate of unemployment among those with low educational attainment is higher than average in most of the countries for which data are available, except where agriculture is still an important sector in terms of employment (Greece, Korea, Mexico and Portugal).

Patterns of non-employment rates across regions in the OECD area

The unemployment rate alone may understate regional labour market disadvantage if high-unemployment regions also have high inactivity rates. Table 2.5 shows regional variation in non-employment rates – *i.e.* the proportion of the population who are not in work – and the correlation between non-employment rates and unemployment rates. Non-employment is a broader indicator of under-utilisation of labour resources than the unemployment rate, as it takes account of differences in participation that are only partly voluntary.

At both levels of territorial breakdown and in terms of either the standard deviation or coefficient of variation, the widest disparities in regional non-employment rates occur in Canada and Italy, although the overall non-employment rates in these two countries lie at opposite extremes. As with unemployment rates, dispersion measured at Level 2 is considerably higher than at Level 1 in Australia, Portugal, the United Kingdom and the United States. At Level 2, therefore, these latter countries are among those with the highest disparities, especially the United States.

It is difficult to directly compare regional variation in non-employment rates with the disparities in regional unemployment rates illustrated in Table 2.1. Since the values of the coefficient of variation are greatly influenced by the large differences between the overall non-employment rate and unemployment rate, it is more appropriate to focus on the standard deviation. In general, the same countries show marked variation in regional non-employment and unemployment rates. An interesting exception is Germany, which records wide disparities in regional unemployment rate, but the extent of variation in regional non-employment is more subdued than in many other countries. This is the result of the combination of high unemployment rates and traditionally high participation rates in the former eastern Länder.

The generally high and positive correlation between regional unemployment rates and non-employment rates in Table 2.5 indicates that high unemployment rates and high inactivity rates go together.[8] In principle, the sign of the relationship between unemployment and participation rates is indeterminate. High participation may lead to higher unemployment, because it increases the labour force. On the other hand, high unemployment rates may discourage people who would otherwise seek work. The results in Table 2.5 indicate the much greater importance of the latter mechanism. Regional variation in the composition of the population could be another factor generating an association of low participation and high unemployment across regions: unskilled workers, women and older workers tend to have both low labour force participation and high unemployment rates.

Table 2.5. **Regional non-employment rates:[a] indicators of disparity and correlation with unemployment rates, 1997[b]**

	Average non-employment rate	Level 1						Level 2					
		Number of regions	Standard deviation[c]	Coefficient of variation[d]	Minimum	Maximum	Correlation with unemployment rates	Number of regions	Standard deviation[c]	Coefficient of variation[d]	Minimum	Maximum	Correlation with unemployment rates
Australia	41.8	8	2.6	6.1	29.8	47.5	0.92	59	5.1	12.4	29.8	54.9	0.73
Austria	44.5	3	1.9	4.3	42.4	47.6	0.97	9	2.1	4.7	41.2	48.8	0.47
Belgium	54.3	3	3.1	5.8	51.7	58.4	1.00	11	3.8	6.9	49.2	60.7	0.95
Canada	40.9	10	4.3	10.6	32.5	57.4	0.93	66	5.5	13.6	27.5	63.1	0.89
Czech Republic	41.8	1	–	–	–	–	–	8	1.6	3.9	39.2	44.3	0.64
Finland	48.9	1	–	–	–	–	–	5	5.3	10.9	41.2	57.4	0.94
France	50.9	8	4.2	8.3	45.0	58.6	0.86	22	4.4	8.7	45.0	69.3	0.64
Germany	47.9	16	3.0	6.2	43.3	54.9	0.40	36	3.2	6.6	41.2	54.9	0.53
Germany[e]	47.5	11	3.1	6.4	43.3	54.9	0.59	31	3.3	6.9	41.2	54.9	0.74
Greece	55.8	4	2.3	4.2	51.4	58.5	0.96	13	3.6	6.4	47.2	64.5	0.63
Hungary	52.5	1	–	–	–	–	–	7	4.6	8.8	45.7	59.3	0.95
Ireland	47.9	1	–	–	–	–	–	2	2.2	4.6	46.6	51.7	1.00
Italy	57.8	11	6.2	10.8	50.9	68.4	0.98	20	6.4	11.0	48.6	68.4	0.96
Japan	39.2	10	2.4	6.2	35.5	44.0	0.81	..	..	..	..	..	..
Korea	43.5	1	–	–	–	–	–	15	3.0	6.8	36.6	49.9	0.72
Mexico	40.4	32	2.3	5.8	35.8	46.0	0.09	..	..	..	..	..	..
Netherlands	42.5	4	1.5	3.6	41.8	47.1	0.93	12	2.3	5.3	38.0	48.9	0.78
New Zealand	39.9	1	–	–	–	–	–	12	3.2	8.0	35.1	47.5	0.68
Norway	30.5	1	–	–	–	–	–	7	1.9	6.1	27.1	32.9	0.62
Portugal	46.1	3	0.9	2.0	45.9	52.0	–0.76	7	4.4	9.6	37.9	55.0	0.78
Spain	61.1	7	3.5	5.8	57.6	66.3	0.81	17	4.0	6.6	53.1	67.8	0.84
Sweden	38.1	1	–	–	–	–	–	8	3.4	9.1	31.8	42.7	0.70
United Kingdom	42.5	12	2.8	6.5	38.6	48.1	0.78	37	4.2	10.0	32.3	50.3	0.79
United States	37.6	51	3.8	10.0	28.8	48.6	0.64	172	6.3	25.2	8.1	52.6	0.68
EU[f]	49.6	76	7.4	14.9	38.1	68.4	0.75	201	7.7	15.6	31.8	69.3	0.73
OECD[g]	43.0	192	7.4	17.1	28.8	68.4	0.77	547	13.2	33.6	8.1	69.3	0.70

.. Data not available.
– Not applicable.
a) Sum of the unemployed and the inactive divided by the population aged 15 years and over.
b) Data refer to 1999 for Australia; to 1998 for Hungary, Ireland, Japan (Level 1), Korea, Mexico and New Zealand; to 1996 for Belgium, France and the United States.
c) Standard deviation weighted by the level of the labour force in the corresponding year.
d) Standard deviation divided by the average non-employment rate in the country x 100.
e) Data refer to western Germany.
f) The indicators of disparity have been calculated from the values of each region belonging to the European Union. Denmark and Luxembourg, which constitute one region each at both levels of territorial breakdown, are included.
g) The indicators of disparity have been calculated from the values of each region belonging to the countries listed above, plus Denmark and Luxembourg, which constitute one region each at both levels of territorial breakdown.
Sources: See Annex 2.B.

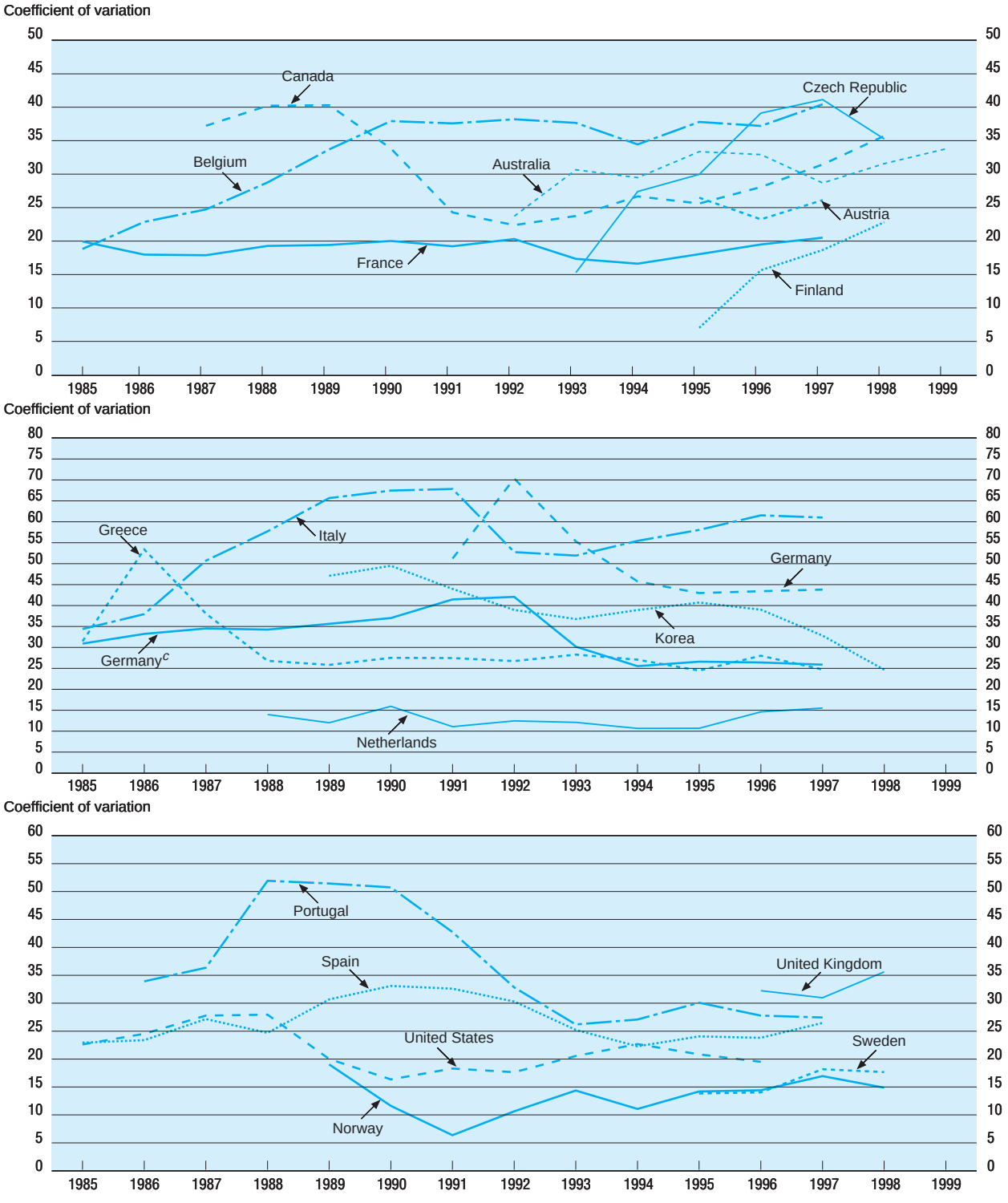
C. Developments in inter-regional unemployment disparities

Changes in regional unemployment disparities over the past decade

Have regional disparities in unemployment rates widened or shrunk over time? OECD (1989) discussed this topic in detail, tracing developments in individual countries over much of the past three decades. That survey, which was mainly based on the observation of Level 1 regions, found that regional differentials rose during the 1980s in the majority of the countries considered. In Finland, France, Italy, the United Kingdom and the United States, the rise followed a slight fall in differentials during the 1970s.

Chart 2.2 shows developments since 1985, using the coefficient of variation for unemployment rates in Level 2 regions.[9] Regional unemployment rates have diverged in Belgium, the Czech Republic, Finland and Italy. The countries that show clear evidence of a narrowing of disparities

Chart 2.2. Developments in regional unemployment disparities,[a] Level 2 regions,[b] 1985-1999



a) Coefficient of variation weighted by the level of the labour force in the corresponding year.
b) Except for the United States where data refer to Level 1 regions.
c) Data refer to western Germany.
Sources: See Annex 2.B.

are Germany, following the peak recorded immediately after reunification, and Korea. Long-term declines are also evident in Canada, Greece, Portugal and the United States, but these are small and partially offset by short-term increases related to the business cycle. The picture conveyed by Chart 2.2 depends to a large extent on the indicator of disparity used and on developments in national unemployment rates. Although not shown here, when measured by the standard deviation, regional unemployment differentials appear to have narrowed or remained stable over the past few years in Australia, the Netherlands and the United Kingdom. By contrast, if measured by the coefficient of variation, differentials appear to have widened as the national unemployment rate (which is the denominator) has decreased. Similarly, the narrowing of disparities for the Czech Republic and Korea that is evident in Chart 2.2 is more the effect of the dramatic increase in the overall unemployment rate in recent years than of the compression of regional unemployment rates.

Persistence or mobility

In addition to looking at changes in the magnitude of regional differences, it is important to see if there has been any significant shuffling in regional rankings, as this may have major policy implications. Regional policy may need to take a long-term structural approach if the relative position of regions is fixed over a long time period. On the other hand, if the position of individual regions fluctuates over time, short-term assistance to deteriorating areas and long-term efforts to reduce the sensitivity of all regions to adverse shocks may be a more appropriate policy [OECD (1989)].

OECD (1989) identified three groups of countries according to the extent of change in regional positions between 1970 and 1987. The most stable group consisted of Finland, Italy, Japan and the United Kingdom. Moderate reshuffling occurred in Canada, France, Germany and Sweden. The greatest rearrangement of regional positions occurred in Australia and the United States.

Table 2.6 shows that the stability exhibited by most of the surveyed countries during the 1980s generally did not abate in the next decade, despite the downturn of the early 1990s and the subsequent recovery. Almost everywhere, rank correlation coefficients for regional unemployment rates between 1997 and 1995 and between 1997 and 1990 are above 0.80. The correlation between 1997 and 1985 is generally lower, but still strong.

Overman and Puga (1999) show that, in Europe, the stability evident over the ten years to 1996 is largely due to the tendency of regions with the highest and lowest unemployment rates to hold their positions. In contrast, the fortunes of regions with intermediate initial unemployment rates were mixed. Some experienced a marked improvement in their relative unemployment rate, others saw it rise, and still others held it steady. The same pattern can be found in the country-specific data from which the correlation coefficients shown in Table 2.6 have been calculated. The case of Italy illustrates the findings of Overman and Puga. The large correlation rates presented in OECD (1989) and in Table 2.6 reflect persistent differences between north and south. Between 1985 and 1997, there was little movement in the position of the lowest-unemployment regions of the north such as Valle d'Aosta and of the highest-unemployment ones in the south (Puglia or Sardegna). The limited change evident for the whole of Italy occurred in regions that were initially in the intermediate quartiles of the distribution of relative unemployment rates (the ratios of the regional to the national rates). Unemployment rates fell in some northern regions like Lombardia and Piedmont, while in some southern regions (*i.e.* Basilicata and Campania) rates increased. This led to the geographical polarisation of regional unemployment rates. Also in France, the relative positions of regions with the highest or lowest unemployment rates did not vary greatly between 1987 and 1995. Here change was also concentrated in the intermediate regions, but did not necessarily lead to greater polarisation.

Regional developments in Australia and the United States have been different. Table 2.6 still shows the mobility in regional unemployment rates that was noted in OECD (1989). The correlation coefficients are considerably lower than in all other countries except Portugal. From 1985 to 1997, unemployment rates increased in Victoria, Tasmania and the Australian Capital Territory. New South Wales, Western Australia and the Northern Territory showed significant improvement, all maintaining or achieving unemployment rates below the national average. Widespread change also continued in the United States. Only 19 of the 50 states and the District of Columbia remained in the same quartile of the distribution of relative unemployment rates. Change acted to break apart some regional blocks identified in OECD (1989) but brought other neighbouring states into closer alignment. For instance, in 1987 the New England states recorded some of the lowest unemployment rates in the country. In 1997, only two of these states (New Hampshire and Massachusetts) retained that position while Connecticut, Maine and Vermont experienced large increases in their unemployment rates. In contrast, the deterioration in relative positions of Idaho, Montana and Wyoming brought these neighbouring states into closer alignment, while other neighbours such as Colorado and Utah held their more favourable positions in the two low-unemployment quartiles.

Table 2.6. **Correlation between recent and historical values of regional unemployment rates**

	Level 1				Level 2			
	Number of regions	Correlation between 1997 and 1995 rates	Correlation between 1997 and 1990 rates	Correlation between 1997 and 1985 rates	Number of regions	Correlation between 1997 and 1995 rates	Correlation between 1997 and 1990 rates	Correlation between 1997 and 1985 rates
Australia [a]	**8**	0.80	0.69	..	**60**	0.70	0.58	..
Austria	**3**	0.99	..	..	**9**	0.97	..	..
Belgium [b]	**3**	1.00	0.94	0.95	**11**	0.99	0.96	0.81
Canada	**10**	0.99	0.96	0.88	**59**	0.96	0.93	..
Czech Republic	**1**	–	–	–	**8**	0.82	..	..
Finland [c]	**1**	–	–	–	**5**	1.00	..	..
France	**8**	0.99	0.92	0.82	**22**	0.94	0.83	0.82
Germany [d]	**16**	1.00	0.96	..	**36**	0.99	0.96	..
Germany [e]	**11**	0.98	0.80	0.72	**31**	0.97	0.87	0.78
Greece	**4**	0.97	0.99	..	**13**	0.89	0.66	.
Hungary [f]	**1**	–	–	–	**7**	0.92	..	..
Italy	**11**	0.99	0.99	0.86	**20**	0.99	0.97	0.81
Japan [g]	**10**	0.92	0.92	0.82	**47**	..	0.94	..
Korea [h]	**1**	..	..	..	**15**	0.82	0.92	..
Mexico [c]	**32**	0.80	..	..	**..**	..	..	..
Netherlands	**4**	0.95	0.91	..	**12**	0.89	0.80	..
New Zealand [h]	**1**	–	–	–	**12**	0.82	0.61	..
Norway	**1**	–	–	–	**7**	0.95	0.92	..
Portugal	**3**	0.29	0.06	..	**7**	0.83	0.79	..
Spain	**7**	0.94	0.79	0.59	**17**	0.96	0.87	0.64
Sweden [c]	**1**	–	–	–	**8**	0.97	..	..
United Kingdom [c]	**12**	0.95	..	..	**37**	0.95	..	..
United States [b]	**51**	0.86	0.51	0.54	**172**	..	..	..
EU [i]	**76**	0.95	0.87	0.76	**201**	0.95	0.86	0.77
OECD [j]	**192**	0.96	0.85	0.84	**588**	0.92	0.79	0.77

.. Data not available.
– Not applicable.
a) Year 1992 instead of 1990.
b) Year 1996 instead of 1997.
c) Year 1996 instead of 1995 and 1998 instead of 1997.
d) Year 1991 instead of 1990.
e) Data refer to western Germany.
f) Year 1993 instead of 1995 and 1998 instead of 1997.
g) Level 1: year 1998 instead of 1997. Level 2: year 1995 instead of 1997.
h) Year 1998 instead of 1997.
i) The correlation rates have been calculated from the values of each region belonging to the European Union. Denmark and Luxembourg, which constitute one region each at both levels of territorial breakdown, as well as Ireland (at Level 1 only) are included.
j) The correlation rates have been calculated from the values of each region belonging to the countries listed above, plus Denmark and Luxembourg, which constitute one region each at both levels of territorial breakdown and Ireland (at Level 1 only).
Sources: See Annex 2.B.

Changes in regional unemployment, participation rates and demographic levels

Changes in the pattern of unemployment rate differentials may be related to differences in labour supply pressures stemming from demographic increases, participation rate changes or to some combination of these factors. The relationship between changes in unemployment and in population shown in Table 2.7 is negative in half of the countries observed and positive in the others. No common patterns, therefore, are discernible across countries. The association between changes in unemployment and participation rates is negative in almost all countries observed, sometimes strongly so. This finding reflects, in terms of changes over time, the negative relationship already reported for the one-point-in-time analysis of Section B.

D. The capacity of regions to generate employment

The different capacity of regions to generate employment could also be an important factor of change in the patterns of unemployment rate differentials. Table 2.8 allows an examination of regional patterns of employment growth across OECD countries and their relationship to changes in unemployment. Information on employment is based on data from the regional accounts or establishment surveys, which cover workers employed in the regions regardless of where they reside. The difference between this type of data

Table 2.7. **Changes in regional unemployment rates, labour force participation rates and population**

	Period	Regional level	Number of regions	Average change [a] (%):			Correlation between changes in unemployment rates and in:	
				Unemployment rate	Participation rate	Population	Participation rates	Population
Australia [b]	1992-97	2	60	–2.18	–1.09	..	–0.12	..
Austria	1993-97	2	9	0.45	..	1.33	..	0.30
Belgium	1993-96	2	11	1.50	1.60	0.74	–0.40	–0.53
Canada [b]	1990-99	2	59	1.28	–2.02	4.87	–0.26	..
Czech Republic	1993-98	2	8	0.46	–0.09	–0.12	0.01	0.58
Finland	1990-96	2	3	11.02	..	3.17	..	–0.64
France	1990-96	2	22	3.26	2.11	2.93	–0.42	0.33
Germany	1991-97	2	36	4.66	–1.26	2.83	–0.78	–0.81
Germany [c]	1991-97	2	31	3.83	–0.10	4.43	–0.31	–0.34
Hungary [b]	1993-98	2	7	–4.21	–4.13	..	0.00	..
Italy	1990-97	2	20	3.69	–2.22	1.35	–0.37	0.09
Japan	1990-95	2	47	1.28	2.91	1.58	–0.60	0.54
Korea [b]	1990-98	2	15	4.33	1.98	..	–0.23	..
Netherlands	1990-97	2	12	–2.13	5.36	4.54	–0.37	–0.03
New Zealand [b]	1990-98	2	12	0.19	1.76	..	–0.33	..
Norway [b]	1990-98	2	7	–1.19	2.17	..	0.51	..
Portugal	1991-97	2	5	3.22	–4.60	0.61	–0.28	0.83
Spain	1990-97	2	17	4.77	2.15	0.94	–0.17	–0.24
United States	1990-96	1	51	–0.09	0.26	6.31	–0.25	0.06

.. Data not available.
a) Weighted by the level of the resident population in the initial year.
b) The average change is weighted by the level of the resident population in the final year.
c) Data refer to western Germany.
Sources: See Annex 2.B.

and data based on place of residence, normally drawn from household surveys, can be significant when there is a lot of commuting so that the count of employed residents in a region does not correspond to the count of jobs in that same region. Regional employment change is calculated over periods of about five years. Depending on the number of years available for each country, one or two such periods have been used in the analysis.

The first two columns of Table 2.8 show the average and the dispersion of percentage changes in employment by region. At the national level, the pace of employment growth varies considerably within the OECD as well as between the two periods of observation. Many European countries have recorded a reduction of employment in the first half of the 1990s which does not seem to be reflected in a widening of disparities of regional employment change compared with the previous period. In France, Germany and Italy, however, there has been some reshuffling in the fortunes of regions (as shown by a low or negative correlation coefficient between the two periods). On the other hand, in Belgium, Spain and Sweden, patterns of regional employment growth are quite stable over the two periods.

The last column of Table 2.8 shows the correlation between changes in employment and in unemployment rates. In principle, the relationship between the two is indeterminate, as the unemployment rate is affected by movements in both the denominator – the level of the labour force – and the numerator – the number unemployed. The correlation rates are almost always negative, although weak in some cases. It appears that, while employment growth is a necessary condition for reductions in regional unemployment, it does not automatically guarantee that such improvements will occur. Other factors such as adjustment in participation or migration-induced population change may come into play as well.

Accounting for the determinants and variation in regional employment growth

The vitality of regional employment is influenced by the industry structure of economic activity, as well as by region-specific factors such as natural resources, geographical location, the quality of infrastructure and of labour forces, etc. The analysis that follows examines the extent to which differences between regional and national employment growth can be attributed to the sectoral mix or

Table 2.8. **Changes in regional employment**

	Period	Regional level	Number of regions	Average change [a] (%)	Standard deviation [a]	Correlation between employment changes in the two periods	Correlation between changes in employment and in unemployment rate
Australia [b]	1992-97	2	60	7.6	10.0	–	–0.44
Austria	1990-95	2	9	1.5	2.3	–	..
Belgium	1985-90	2	11	6.1	3.4	0.87	–0.09
	1990-95	2	11	–1.2	4.2		–0.71
Canada [b]	1990-97	2	59	4.6	7.7	–	–0.49
Czech Republic	1993-97	2	8	1.3	1.7	–	–0.84
Finland	1990-96	2	5	–16.6	2.2	–	..
France	1985-90	2	22	4.8	3.6	0.28	0.01
	1990-95	2	22	–0.7	1.8		–0.10
Germany	1991-96	2	36	–5.8	4.4	–	–0.86
Germany [c]	1985-91	2	31	12.1	13.3	–0.49	0.53
	1991-96	2	31	–4.1	2.4		–0.54
Hungary [b]	1993-98	2	7	–2.6	3.5	–	–0.34
Italy	1985-90	2	20	2.7	4.0	0.32	–0.55
	1990-96	2	20	–3.6	3.6		–0.33
Japan [b]	1985-90	2	47	5.9	4.7	0.78	..
	1990-95	2	47	4.1	2.3		0.43
Korea [b]	1990-98	2	15	12.6	15.5	–	0.64
Netherlands	1990-97	2	12	14.4	3.0	–	–0.21
New Zealand	1990-98	2	12	15.7	9.2	–	0.06
Norway [b]	1990-97	2	7	8.1	7.4	–	–0.05
Portugal	1990-95	2	5	–2.5	2.6	–	0.87
Spain	1985-90	2	17	17.8	6.8	0.64	–0.64
	1990-96	2	17	–1.1	4.7		–0.57
Sweden	1985-90	2	8	5.2	1.4	0.78	..
	1990-96	2	8	–11.0	1.9		..
United States	1985-90	2	172	11.8	6.3	0.34	..
	1990-96	2	172	9.7	7.5		..

.. Data not available.
– Not applicable.
a) Weighted by the level of the resident population in the initial year of each period.
b) The average change and the standard deviation are weighted by the level of the resident population in the final year of each period.
c) Data refer to western Germany.
Sources: See Annex 2.C for data on employment, and Annex 2.B for data on unemployment.

to other unobserved region-specific characteristics. A simple shift-share analysis allows decomposition of such differences into a structural and a regional component.[10] The structural component shows the fraction of regional employment growth rate that is attributable to the overall development of the industries that are located in the region. The regional component indicates whether a region's industries performed better or worse than the national average for each industry.

The analysis uses data on regional employment by industry on a place-of-work basis (except for Australia, Canada, Hungary and Japan). Annex 2.C describes the data sources used as well as their limitations. Table 2.9 synthesises the region-specific results for each country with the following summary indicators: the average of the absolute values of the gap between regional and national employment growth; the average of the absolute values of the sectoral and regional components; and the minimum and maximum values of both components. On average, the regional component accounts for a larger fraction of the gap between regional and national employment change than the industry-mix component.[11] Variation in the importance of the regional share across countries, however, is quite large. In general, the regions that include the administrative capital city of the country are those with the most favourable industry mix for employment growth. However, the competitive advantage of these regions (represented by the regional component) does not stand above the average. In Belgium and Portugal, for example, the regions of Brussels and Lisbon are those where the regional component is lowest.

Thus, the large differences in the employment performance across regions cannot be explained exclusively by differences in the industry mix. Other characteristics, often not identified or well understood, are responsible for generating regional outcomes which more than offset the

Table 2.9. **Summary indicators of components of change in employment by region** [a]

	Regional level	Number of regions	Period	Gap between regional and national employment growth:			Structural component		Regional component	
				Total [b]	*due to*: structural component [b]	*due to*: regional component [b]	Minimum value	Maximum value	Minimum value	Maximum value
Australia	1	8	1985-98	1.43	0.14	1.33	–0.17	0.34	–2.28	2.78
Belgium	2	11	1980-92	0.60	0.16	0.73	–0.49	0.51	–1.11	1.15
Canada	2	58	1987-98	0.60	0.15	0.59	–0.62	0.14	–1.95	2.12
France	2	21	1980-92	0.43	0.17	0.38	–0.39	0.27	–0.63	0.94
Hungary	2	7	1993-98	0.76	0.09	0.77	–0.14	0.15	–0.90	1.64
Italy	2	20	1980-95	0.40	0.21	0.38	–0.28	0.65	–1.28	0.99
Japan	2	47	1980-95	0.58	0.83	0.54	–1.35	2.25	–2.59	1.42
Netherlands	2	12	1986-93	1.02	0.14	1.05	–0.19	0.23	–0.89	6.52
New Zealand	2	12	1989-98	0.77	0.07	0.81	–0.14	0.24	–1.85	1.00
Portugal	2	5	1986-94	1.21	0.19	1.25	–0.38	0.43	–1.35	2.73
Spain	2	16	1980-94	0.49	0.24	0.42	–0.59	0.68	–1.01	1.09
United States	2	172	1980-97	0.95	0.22	0.91	–0.86	1.03	–2.10	5.93

a) All the values are expressed as percentage annual changes.
b) The total gap between regional and national employment growth rates and the two shares are expressed as averages of the *absolute values* for each region. The method of calculation of the three components of change in each region is explained in endnote 10 of the text.
Sources: See Annex 2.C.

disadvantages or advantages stemming from sectoral structures. These may be: the extent of innovative activity; the degree of accessibility to product and factor markets; the quality of labour supply; the efficiency of regional institutions; and the business and other support services available [European Commission (1999)].

E. Regional earnings

Regional earnings differentials are one important factor that may be related to local labour market conditions. Regional earnings dispersion in Table 2.10 is measured by the coefficient of variation of average regional earnings (for a detailed description of the data see Annex 2.D). In 1997, among EU countries (for which the coverage and definitions of the statistics used are the same), the United Kingdom and France show the highest levels of dispersion. Outside the EU, considerable variation is recorded in the Czech Republic and in the United States. These data must be interpreted with caution. First, the coverage by sector is not the same across all countries. Second, the data focus attention on the broad Level 1 regions, which may provide a misleading picture.[12] In the case of the United States, for example, the coefficient of variation in 1997 increases from 14.2 per cent to 17.1 per cent if Economic Areas are the basic regional unit instead of states. This suggests that different local labour markets co-exist within states. Data on trends in regional earnings are only available for Canada, the Czech Republic, Germany, Japan and the United States. Between 1990 and 1997, regional earnings dispersion increased in all of these countries except in Germany – the latter result reflecting the catching up of average earnings in the eastern Länder with respect to average earnings in western Germany following reunification.

The last column of Table 2.10 shows the correlation between the level of unemployment and the level of earnings across regions. In more than one half, there appears to be a negative relationship. In Germany, the correlation is very high and reflects the huge gap in economic conditions between the former eastern and western Germany.

Factors accounting for dispersion in regional earnings

The same technique of variance decomposition that was reported in Box 2 is now applied to examine the extent to which earnings are affected by the work location. Earnings disparities for prime-age workers have been decomposed into different components. A set of components attributes a portion of the variation in earnings to differences in the personal characteristics of workers, *i.e.* their age, gender and educational attainment. Another component accounts for regional differences in the industry mix in each region. The remaining component incorporates differences that are not accounted for by the worker or industry-mix variables and is considered a measure of the regional dimension.

The results of this decomposition are shown in Table 2.11. They must be taken as indicative only, as their precision may be reduced by the small size of the survey sample and the high level of regional aggregation (the data

Table 2.10. Average regional earnings:[a] coefficient of variation[b] and correlation with unemployment rates

	Regional level	Number of regions	Coefficient of variation			Correlation with unemployment rates[f]
			1997[c]	1995[d]	1990[e]	
Australia	1	8	4.5	5.6	4.7	–0.63
Austria	1	3	..	4.3	..	–0.52
Belgium	1	3	..	8.0	..	0.57
Canada	1	10	7.1	6.7	4.7	–0.53
Czech Republic	2	8	14.9	12.2	..	..
France	1	8	..	18.4	..	–0.25
Germany	1	17	12.0	13.7	25.6	–0.84
Western Germany	*1*	*11*	*3.6*	*3.9*	*3.6*	*0.49*
Eastern Germany	*1*	*6*	*5.1*	*5.0*	*4.1*	*–0.66*
Greece	1	4	..	4.7	..	0.59
Italy	1	11	..	9.4	..	0.14
Japan	2	47	13.4	13.0	..	0.02
Netherlands	1	4	..	4.9	..	–0.57
New Zealand	2	12	7.1	6.6	5.7	–0.40
Portugal	1	5	18.5	19.5	..	0.35
Spain	1	7	..	11.7	..	–0.39
United Kingdom	1	12	..	19.3	..	0.40
United States	1	50	14.2	14.2	13.7	–0.11
United States	2	172	17.1	16.7	15.5	–0.35

.. Data not available.
a) Average hourly earnings, except for Canada: average weekly earnings, and the United States: average annual earnings per job.
b) Coefficient of variation weighted by the level of employment in the corresponding year.
c) Australia: 1999; Czech Republic and New Zealand: 1998.
d) Germany: 1994.
e) Germany: 1991; Australia: 1992.
f) Correlation between unemployment rates and levels of earnings in 1994 for Austria, France and the United Kingdom; in 1995 for Belgium, Greece, Italy, Japan, the Netherlands and Spain; in 1996 for the United States; in 1997 for Germany and Portugal; in 1998 for Canada and New Zealand and in 1999 for Australia.
Sources: See Annex 2.D for data on wages and salaries and Annex 2.B for data on unemployment.

Table 2.11. Decomposition of the variance of average hourly earnings across regions[a]

Persons aged 25 years and above[b]

	Regional level	Number of regions	Period	Share of variance associated with the regional dummies	Share of variance associated with the age and gender dummies	Share of variance associated with the educational attainment dummies	Share of variance associated with the industry dummies	R-squared	Number of observations
Austria	1	3	1994	0.03	0.20	0.36	0.11	0.91	160
Belgium	1	3	1995	0.03	0.15	0.45	0.15	0.93	156
Canada	1	10	1997-1998	0.05	0.27	0.12	0.28	0.93	1 563
France	1	8	1994	0.12	0.13	0.25	0.03	0.72	440
Greece	1	4	1995	0.03	0.27	0.21	0.27	0.90	165
Italy	1	11	1995	0.04	0.10	0.31	0.24	0.89	512
Japan[c]	2	47	1995	0.12	0.47	..	0.04	0.69	4 245
Netherlands	1	4	1995	0.06	..	0.71	0.05	0.95	71
Portugal	2	5	1997	0.06	0.10	0.29	0.23	0.95	270
Spain	1	7	1995	0.08	0.17	0.34	0.15	0.91	374
United Kingdom	1	11	1995	0.12	0.14	0.17	0.10	0.72	573
United States[c]	1	51	Average 1994-1998	0.06	0.12	0.31	0.22	0.84	4 735

.. Data not available.
a) The table reports the results of an analysis of variance exercise where the hourly earnings for each region, each worker's characteristic and each industry, weighted by the corresponding level of employment, have been regressed against a set of categorical dummies. These refer to the corresponding regions, workers characteristics – gender, educational attainment level and, where available, age – and industries. There are three educational attainment levels – low medium and high. The share of variance associated with each variable corresponds to the reduction in the residual term of the regression due to adding the variable after all other variables have been taken into account. In this procedure, the results are not sensitive to the order in which the variables are added but the shares of variance do not necessarily sum up to the R-squared.
b) Except for Canada: 25 to 64 years.
c) Age dummies have been included. The dummies distinguish between the 25-54 age group and the 55 and over age group.
Sources: See Annex 2.D.

are only available at Level 1 regions). In general, the regional dimension is less important in accounting for variation in earnings than in unemployment rates (although the regional level examined in the two decomposition exercises is not the same). This can be explained by the existence of wage bargaining structures and institutions that are not differentiated across regions. The regional dimension is relatively important in France,[13] Japan and the United Kingdom, accounting for just over 10 per cent of the variance. This suggests that, in these countries, workers with similar characteristics earn different "returns" depending on the region in which they are working. In Austria, Belgium, Greece and Italy,[14] on the other hand, the regional dummies explain 3 per cent or less of the cross-section variation in earnings. For Italy, this result has to be considered in relation to the apparent importance of the regional dimension in explaining variation in unemployment rates. In this country, wages do not appear to be affected by local unemployment conditions.

Again, it is important to ask what the regional dimension might actually mean in this context. Unlike for unemployment, the model takes account of the industry mix of the regions, but there are other aspects of labour demand that have not been considered, for example the size of establishment and the spill-over effects of the industry mix. These, and other characteristics of workers like occupation and tenure, may be important in accounting for the level of earnings and may be distributed unevenly across regions. They would therefore be incorporated in the regional dimension. The regional dimension could also reflect productivity differentials across regions.

F. Is there a regional dimension to national labour markets?

The analysis in the sub-sections above has investigated the extent to which the regional location of people and of economic activity affects their fortunes. This has been done through simple decomposition exercises for the regional variation in unemployment and earnings, and through a shift-share analysis of employment growth. Drawing together the results of this investigation is not easy, since the regional dimension is ultimately the combination of unmeasured differences in regional characteristics and takes on a different meaning in the three exercises.

With this caveat in mind, the results from the three exercises suggest that a regional dimension of the unemployment problem exists in some countries, notably in Canada, Germany, Italy and the United Kingdom. This means that the age, gender and skill compositions of the regional populations account for only a fraction of the regional variation of unemployment. Other factors matter. Obviously, the capacity of regions to generate employment is an important factor, and the industry mix of the regions is only one, but not the major, of its determinants.

The regional dimension is important in explaining regional variation in earnings, once account is taken of some personal characteristics of workers and the industry mix in each region, although considerably less than in the case of unemployment. Furthermore, the countries for which the regional dimension explains some of the variation in earnings do not always correspond to those where the regional dimension explains the variation in unemployment. For example, in Italy, the regional component is important in explaining variation in unemployment rates, but not in earnings.

III. Regional labour markets and adjustment mechanisms

A. The mobility of labour supply

Labour mobility can play a significant role as a regional balancing mechanism for the labour market. This section examines patterns and developments of labour mobility across regions in OECD countries and the extent to which it works as an adjustment mechanism, both in theory and in practice.

Table 2.12 shows developments in internal migration flows in selected OECD countries. Two aggregate measures of internal migration are shown. The first – internal *gross* migration flows, calculated as the proportion of the resident population that changed region of residence over the year within each national economy – measures the extent of mobility of the national population. This is merely a sum of all migration flows; it will have no impact on the size of a regional population as long as departures from and arrivals to a specific region cancel out. The second measure – the ratio of *net* migration flows to gross flows – averages out flows in different directions by showing the percentage of total internal migration that results in an actual change of regional populations in each country.

One of the difficulties in comparing developments in internal migration between countries is that regional classifications differ. In Table 2.12, data refer to Level 2 units in all countries except for Australia, Japan, the United Kingdom and United States, where they refer to Level 1 regions. Migration flows in these latter countries are likely to be bigger for smaller territorial units. Furthermore, the data are subject to some inaccuracy. For Australia, France,

Table 2.12. **Internal migration in selected OECD countries: gross flows and net flows** [a]

Percentages

	Regional level	Number of regions	Ratio of gross flows to population					Ratio of net flows to gross flows
			1980	1985	1990	1995	1998	[b]
Australia	1	8	1.85	1.86	1.93	1.93	1.96	6.6
Belgium	2	11	0.86	0.84	0.60	1.27	..	7.4
Canada [c]	2	66	..	..	2.50	2.15	..	18.9
Czech Republic	2	8	..	..	..	0.55	0.56	14.0
Finland	2	5	1.28	1.30	1.29	0.92	..	10.3
France [d]	2	22	1.52	1.31	1.40	1.49	1.58	..
Germany [e]	1	16	1.29	1.05	1.34 |	1.24	..	7.8
Hungary	2	7	2.91	3.43	2.07	1.47	1.50	4.6
Italy [f]	2	20	0.68	0.59	..	0.50	0.53	19.3
Japan	1	10	2.89	2.59	2.59	2.45	..	..
Netherlands	2	12	1.56	1.56	1.64	1.61	..	4.3
New Zealand [g]	2	12	..	..	..	1.99	..	7.6
Portugal	2	7	..	0.19	0.54	..	..	21.8
Spain [h]	2	17	0.19	0.42	0.65	0.60	..	11.7
Sweden	2	8	1.30	1.44	1.54	1.61	..	9.8
United Kingdom	1	12	..	..	..	..	2.30	5.5
United States [i]	1	51	2.79	3.00	3.32	2.22	2.40	15.4

.. Data not available.
| Break in series.

a) Gross flows are expressed as the total number of persons who changed region of residence over one year. Total net flows by country are calculated as the sum of the absolute values of regional net flows, divided by two. Net flows by region correspond to inflows minus outflows. Data for the Czech Republic include external migration. Data for Canada, France, Hungary, Japan, New Zealand and the United Kingdom refer to the population aged 15 and over.
b) Data for the latest year available: Australia, the Czech Republic, Hungary and the United Kingdom: 1998; Belgium, Italy: 1997; Canada, Finland, the Netherlands, New Zealand, Sweden: 1996; Spain: 1994; Germany: 1993; Portugal: 1992; the United States: 1990.
c) 1991 instead of 1990 and 1996 instead of 1995.
d) 1982 instead of 1980.
e) 1993 instead of 1995. Before this date, data refer to western Germany.
f) 1997 instead of 1998.
g) 1996 instead of 1995.
h) 1994 instead of 1995.
i) 1981 instead of 1980.

Sources: Belgium, Finland, Germany, Netherlands, Portugal, Spain, Sweden: EUROSTAT Regio Database, demographic statistics domain.
Australia, Canada, New Zealand: Estimates based on the population census.
Czech Republic: Demographic statistics.
France: Labour Force Survey.
Hungary: Microcensus.
Italy: EUROSTAT Regio Database, demographic statistics domain and migration survey by ISTAT.
Japan: Internal Migration Survey.
United Kingdom: Data based on the movement of National Health Service doctors' patients.
United States: Geographic Mobility Reports, Census Bureau, various issues, based on data from the Current Population Census.

Hungary, New Zealand and the United States, information is based on individual replies to labour force and household surveys or population censuses. These statistics are subject to sampling and non-sampling errors. For the other countries, the data are based on administrative files. Their value will depend on the accuracy and completeness of the registers, as well as on the stringency of administrative regulations governing changes in residence [OECD (1990)]. With these caveats in mind, a number of general remarks can be made. The level of internal migration is relatively high in the United States, Japan, Canada and the United Kingdom. Moreover, in Canada and the United States, a relatively large share of inter-regional migration flows result in actual population change (more than 15 per cent). Australia and New Zealand also record above-average levels of internal migration. Within European countries, with the exception of the United Kingdom, migration rates are considerably lower. The scale of movement, however, varies significantly across countries: at one extreme, in the Czech Republic, Italy and Spain, just over 0.5 per cent of the population moved region of residence in the latest year for which data are available. At the other extreme, over 1.5 per cent of the population moved in the Netherlands and Sweden in 1995. In the Netherlands, however, only

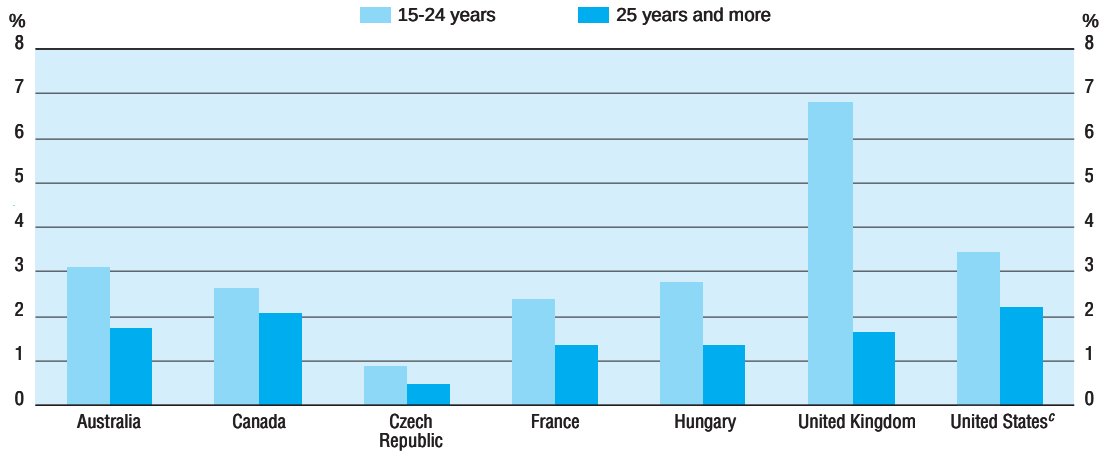
4 per cent of total migration flows result in actual population change. This result seems to confirm the pattern observed by Rees and Kupiszewski (1999) that this country is simultaneously experiencing pronounced urban concentration among its young adult population at the same time as its families and older groups are moving to lower density settlements.

Data in Table 2.12 refer to the whole population (or, in some cases, to the population aged 15 years and over), active and inactive, and thus combine migration for labour market reasons and other reasons, such as family or retirement. However, migrants' behaviour is far from homogeneous. It depends greatly on factors such as age, education and employment status. For example, young adults have a higher propensity to move than older age groups, as shown in Chart 2.3. There are also good reasons to expect that workers with different educational levels respond in different ways to regional labour shocks, as the opportunity cost of not working is typically higher for the highly skilled. Mauro and Spilimbergo (1999) note that, in Spain, the high-skilled are more likely than the low-skilled to migrate rather than remain unemployed or drop out of the labour force. This has important policy implications, as encouraging outward migration from lagging regions may have the negative effects of de-skilling regional populations and further weaken regional growth potential.

Migration is not, however, the only form of mobility that allows regional workforces to secure new jobs. Commuting, at least to contiguous regions, represents an alternative that allows workers to overcome certain problems connected with the decision to migrate, such as moving house, loosening family ties, changing social environment, etc. Chart 2.4 shows commuting flows across regions in selected OECD countries, measured by the ratio of employed residents working outside their region of residence (the out-commuters) to the total of employed residents living in that region. As with migration, the size of commuting flows greatly depends upon the size of the regions considered. The commuting flows for the United States and the United Kingdom (in 1992) refer to Level 1 regions, and are, therefore, of a smaller scale than the flows shown for the other countries, based on the smaller Level 2 regions. Moreover, the average size of Level 2 regions in France, Italy, Portugal and Spain is larger than in countries like Austria, Belgium, the Netherlands and Germany. As a consequence, their commuting flows appear smaller. Still, it appears reasonable to conclude that commuting flows in Italy and Spain are particularly small. It should be noted that the extent to which commuting can serve as an equilibrating mechanism in the labour market depends on the distribution of employment opportunities across regions, as measured by unemployment. In Italy, given the north-

Chart 2.3. **Incidence of internal migration by age in selected OECD countries,[a] latest available year[b]**

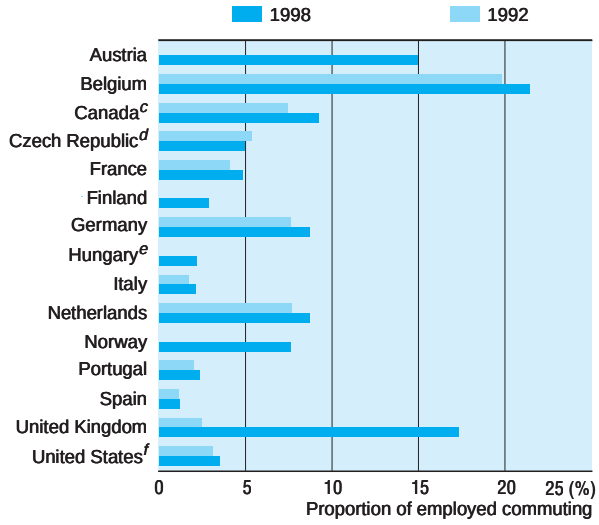
Percentages



a) Gross migration flows by age as a percentage of population by age.
b) 1998 for all countries except Canada: 1996.
c) Age group 16-24 years instead of 15-24 years.
Sources: See Table 2.12.

Chart 2.4. **Proportion of employed commuting,[a] Level 2 regions,[b] 1992 and 1998**

Percentages



a) Workers who cross regional borders to get from their place of residence to their place of work.
b) Except for the United Kingdom in 1992 and the United States, where data refer to Level 1 regions.
c) 1991 instead of 1992.
d) 1993 instead of 1992.
e) 1996 instead of 1998.
f) 1980 instead of 1992 and 1990 instead of 1996.
Sources: Labour force survey for the Czech Republic, EU countries and Hungary; administrative registers for Norway; population censuses for Canada and the United States.

south divide in labour market conditions, long-distance commuting is unlikely to prove a viable option.

In general, movement both between and within many countries has declined significantly over the past three to four decades. OECD (1990) analysed developments in inter-regional migration in selected countries in the 1970s and 1980s. Although the level of territorial breakdown varied from country to country and differed from that observed in Table 2.12, comparisons over time are still valid. OECD (1990) noted a significant and steady reduction in gross migration rates for Germany and Italy. Finland, Canada and Japan also recorded a reduction, although less dramatic and interrupted at the end of the observation period. A different pattern was observed in Australia, France, Norway, Sweden and the United Kingdom, which recorded either stability throughout the period or a reversal of a declining trend towards the end of the 1980s. Table 2.12 shows developments in inter-regional migration for only a few countries. In Italy, the proportion moving to another region has continued to decrease, but it has increased in Belgium, Spain and Sweden. Hungary recorded quite high levels of mobility during the 1980s, but recorded a large fall in the 1990s. In Japan and the United States, the proportion moving across states has decreased whereas in Australia it has risen.

The secular decline in migration in the majority of countries can be attributed to a variety of developments, including the marked improvement in basic living standards and income per capita in poor regions and the growth in the number of dual wage-earner families. The long-run rise in unemployment in many countries since the early 1970s may also have contributed to the fall of migration rates. The increase in commuting fields due to the development of transport infrastructure is certainly another important factor. Chart 2.4 shows that, in all countries except the Czech Republic, the proportion of employed people commuting increased between 1992 and 1998. Data on commuting over a much longer time period are not available, nor are data on average travel-to-work distance. It is reasonable to expect, however, that commuting has become an increasingly valid alternative to migration over the years, in line with falling transport costs, and analysis of trends in migration flows should take this factor into account. Furthermore, advances in telecommunications and information technology are likely to contribute further to the breakdown of the relationship between place of work and place of living, but no statistical traces of this process are visible yet.

Table 2.13 examines the relationship between net in-migration flows and unemployment rates. The expected sign of the relationship is negative – low-unemployment regions will experience a net inflow of people from regions with higher unemployment. In eight of the 14 countries for which data are available, the correlation is of the expected sign and significant. In Finland, Germany, Hungary, Italy and Sweden, the correlation rate is above 0.6. The wide disparities between the north and south of Italy in unemployment levels generate migration flows in the expected direction, but, as shown in Table 2.12, these movements are of limited size. This result, therefore, is not at odds with the findings of the empirical studies that analyse the dynamics of labour adjustment, recalled in Section I above. According to these studies, labour mobility in this and other EU countries plays a considerably smaller role in the adjustment of labour markets to region-specific shocks than in the United States.

Table 2.13. **Correlation between net migration flows and unemployment by region** [a]

	Regional level	Number of regions	Period	Net migration [a]
Belgium	2	11	1993-1995	–0.36**
Canada	2	59	1996	–0.38***
Czech Republic [b]	2	8	1998	0.04
Finland	2	5	1996	–0.89**
Germany	1	16	1992-1993	–0.62***
Hungary	2	7	1998	–0.82**
Italy	2	20	1985-1995	–0.61***
Japan	1	14	1992, 1997	–0.13
Netherlands	2	12	1989-1996	–0.09
New Zealand	2	12	1996	–0.28
Portugal	2	7	1987-1992	0.41
Spain	2	17	1984-1994	–0.09
Sweden	2	8	1996	–0.61*
United States	1	51	1990	–0.23*

*, ** and *** mean statistically significant at the 10%, 5% and 1% levels respectively.

a) Net migration flows for each region are calculated as inflows minus outflows per 1 000 population. Data for Canada, Hungary, Japan and New Zealand refer to the population aged 15 and over. Regional net migration flows for each year are correlated with the corresponding unemployment rate for the previous year.

b) External migration is included.

Sources: See Table 2.12 for migration data and Annex 2.B for unemployment data.

As noted in Box 3, relative employment and earnings opportunities should influence commuting in the same direction as migration rates. Although not shown here, the association between net commuting flows and unemployment rates by region is of the expected negative sign in most countries for which data are available (9 out of 14) but rarely statistically significant.

B. Is the sectoral composition of regional employment becoming more specialised?

The extent to which the condition of regional labour markets is influenced by sectoral or industry developments is an issue which has gained some prominence in the debate about the effects of globalisation and greater economic integration. Krugman (1993) and Duranton and Puga (1999) argue that regions with narrow or specialised industrial bases may be at greater risk of weak growth and high unemployment. If integration makes regions more specialised, sector-specific shocks could have a stronger impact on regional employment and unemployment, leading to wider disparities, or at least a shuffling of regional rankings. McCormick (1997) has observed that, in the UK, the recession of the early 1990s seriously weakened the relative position of regional labour markets in the South, as these were more dependent on the financial industry that was hit hard by the downturn.

The European Monetary Union (EMU) is a key topic in the current debate about integration and specialisation. However, a number of more general long-term developments are acting to reduce the costs of transport or exchange across distance and/or to enhance labour or capital mobility. In standard theory at least, this should lead to stronger integration across regions. It is reasonable, therefore, to expect that if integration exerts a strong force pushing regions towards greater specialisation, this effect should be observable in many regions throughout the OECD. This section examines the sectoral structure of regional labour markets in a number of OECD countries to try and determine whether these have become more specialised or not.

Are regions becoming more specialised?

Whether or not integration encourages specialisation is a matter of theoretical and empirical contention. Box 4 summarises the competing theories underlying these differences. The potential impact of closer integration on the sectoral composition of regional employment must be considered alongside other factors of structural change. These include the decline in the relative importance of agricultural and manufacturing employment, as well as broad technological and social changes that have led to the emergence and growth of new markets and provided new industry niches for regions to exploit. For instance, computing technology and Silicon Valley and other centres of information products and services developed together, probably through some kind of symbiotic relationship. Another example is the emergence of leisure-oriented regions, a phenomenon that has grown hand-in-hand with rising living standards, the maturation of new social attitudes and expectations, and demographic changes.

Box 3. Theoretical views and empirical evidence on the determinants of internal migration, with a focus on the housing market

In neo-classical theory, labour mobility plays an important role in equalising spatial demand and supply of labour in the long run. Starting from a set of restrictive assumptions, such as perfect information, homogeneity of factors of production, perfect competition and price flexibility, workers are assumed to move between regions in response to wage and employment differentials.

Most studies dealing with labour migration still adopt this perspective and characterise migration as an economic push-pull process, where regional wages and job opportunities are considered as key determinants. However, it is clear that these are only two factors among many in determining mobility flows. Human capital and gravity models allow the incorporation of a variety of other potential determinants of migration, including non-pecuniary ones.[15] These include relocation costs, limited information about job offers in other local labour markets, skill constraints and family, social and cultural ties. Some research has also stressed the role of labour market policies and institutions like social protection benefits, minimum wages and other centralised wage bargaining institutions, employment protection legislation and the public employment service. A body of econometric evidence has also developed recently which highlights the potentially important role of the housing market.

Bover *et al.* (1989) have suggested two major channels through which the housing market can affect labour mobility patterns. One is via relative house prices, which partly reflect cost-of-living differentials between regions. The other relates to the structure of housing tenure. A high rate of owner-occupation may impede labour mobility because of higher transaction costs than in private renting. For example, Hughes and McCormick (1987) and McCormick (1997) have argued that the small size of the private rented sector is an important source of inefficiency in British labour markets. The high degree of persistence in regional unemployment rates is a major symptom of this inefficiency. In this view, policy intervention in this area is important and should be directed at removing punitive housing taxation and widespread rent control and public allocation of rental housing. Interestingly, social capital theorists arrive at very different policy conclusions. They view labour mobility as a cause of erosion of social capital and social support structures and, therefore, recommend policies to encourage home ownership and long length of residence in the same area.

Oswald has drawn a direct link between the increase in home ownership and unemployment. In his analysis of a number of OECD countries [Oswald (1997)], he finds a correlation between home-ownership and unemployment, and concludes that the increase in home ownership since the 1960s in many countries has contributed to the rise in unemployment. This relationship, however, is not evident at the regional level. Although not shown here, data on unemployment and housing tenure by region for 16 OECD countries were analysed and no evidence was found of a positive and statistically significant association between the two variables. This result is confirmed in a more sophisticated model of regional unemployment for Great Britain reported in Cameron and Muellbauer (2000). They find a plausible explanation for this result: while at the national level, higher proportions of market-rented housing should be associated with higher mobility and lower average unemployment, this is far from obvious at the regional level. A larger rental sector in one region will, in fact, remove some of the in-migration barriers and so bring down unemployment rates in the other regions. It is far from clear, therefore, that *within* a region there will be a negative association between the size of the rental sector and the unemployment rate. Furthermore, changes in tenure structure tend to be shaped by national developments and policies, *e.g.* the removal of rent controls, the sale of public housing, the rise of owner occupation, etc.

The housing market could also have significant effects on commuting patterns. Regional commuting can help overcome the blockages that the housing market can put in the way of an efficient regional allocation of labour and jobs. More generally, housing market variables such as relative house prices should have the opposite effect on net regional commuting compared with net regional migration. Cameron and Muellbauer (1998) develop an econometric model for net regional commuting and migration in Great Britain using a common framework, and find strong housing market effects on both mobility variables. The commuting/migration trade-off implies stronger responses of migration to relative housing market costs in contiguous regions compared with more distant regions.

Although the theoretical arguments concerning the possible relationship between integration and specialisation are relatively clear, the ability of existing data and research techniques to illustrate this issue and other aspects of regional specialisation is somewhat problematic. Existing industry classification systems are generally too broad, even at the two or three-digit level, to allow the identification of narrowly specialised but fundamental aspects of economic activity which may greatly affect regional well-being.[16]

While agriculture and manufacturing exert considerable influence over regional activity, it is also important to examine the entire spectrum of regional activity when investigating broad processes of structural change. Some service industries, including tourist and business-oriented services, may generate considerable regional income in their own right. Other industries such as retail, transport and non-market services are significant sources of local employment and may be affected by shocks which may have relatively little to do with changing demand for

Box 4. Theoretical views and empirical evidence relating to specialisation and diversity

In explaining differences between countries or regions in economic growth, neo-classical theory emphasises the importance of comparative advantage and the level and characteristics of labour and capital. When the exchange of goods across regions is expensive or the mobility of labour and/or capital is constrained, regions remain relatively heterogeneous. Reductions in price and regulatory impediments to trade and factor mobility allow capital and labour to move more easily from region to region in response to price signals. Depending on the nature of other locational forces, this may lead to greater diversity in the industry structure of individual regions.

Kim (1997, 1999) has argued that neo-classical theory can help to explain many regional developments in the United States during and after the evolution of an integrated economy from disparate states and territories, a process which took place mainly in the second half of the 19th Century and the first half of the 20th Century. He reports three major developments. Agriculture became more specialised and localised as improvements in transport and food handling technology weakened the benefits of proximity to markets and allowed fuller exploitation of the better soil, climate and terrain of more distant regions. In contrast, the manufacturing sector began to unwind previous increases in regional specialisation over roughly the past 50 years because improved transportation, product design, production processes and more general availability of electric power and other utilities reduced the costs of operating at a distance from traditional sources of comparative advantage. Finally, locational factors have exerted relatively little influence over activity in the services sector, so its stronger growth compared with agriculture and manufacturing has tended to make regional activity more diverse.

The "new" theories of growth and trade give greater emphasis to endogenous technological progress as a key source of regional growth, reinforced by various externalities, *e.g.* of size, scope, human capital and knowledge. Krugman (1993) argues that in the presence of such externalities, reduction in transaction costs will reinforce the cost advantages already associated with the higher output volumes of certain industries in particular regions. This will lead to localisation of activity and greater regional specialisation. If integration also facilitates greater factor mobility, the declines in prices resulting from the changing geographical distribution of activity (or other shocks) will cause an outflow of capital and/or labour until supply matches lower demand, thus entrenching regional differences. According to Krugman, this is a characteristic response of US regions to industry-specific shocks.

Some researchers claim to have found evidence of externalities that influence the location preferences of firms and the industry structure of regions, once other factors such as natural advantage and unevenness in firm size are taken into account. Ellison and Glaeser (1997) claim that many of the manufacturing sectors in the United States show a mild degree of geographical concentration, attributed in part to "upstream-downstream spillovers" which act to reduce transport and other costs for co-located industries with linked outputs and inputs. Henderson *et al.* (1992, 1995) report evidence of persistence in the location of manufacturing industries in the United States and assert that this tends to forestall regional convergence. In explaining this tendency, the authors downplay the importance of upstream-downstream spillovers at a point in time in favour of "dynamic" externalities, such as the long-term benefits derived from information networks and communication channels which develop only slowly.

Henderson *et al.* (1992, 1995) and Henderson (1997) identify two kinds of externalities, which differ according to the scope of regional activity. "Locational" externalities encourage regional specialisation by favouring the co-location of like firms if access to information and resources of particular kinds is important. This is a characteristic of smaller cities which is preferred by firms in more traditional or established industries. In contrast, "urbanisation" externalities are derived from the diversity and breadth of activity, which tends to be a feature of larger cities. These attract research, innovative and emerging industries.

regional "exports", including demographic shifts in regional populations and the rationalisation of corporate or government activity.

Because the key focus of this chapter is on regional labour market disparities within Member countries, the analysis has been undertaken with a relative measure of specialisation that compares the industry structure of each region with that of the respective country. The measure is based on the Hirshman-Herfindhl Index[17] [see Duranton and Puga (1999); Krugman (1993); Henderson (1997); Kim (1997)]. It takes a value of zero if the industry employment profile of each region is identical to the national profile. On the other hand, if the two profiles diverge by specialising in different industries, the index moves close to a value of two.[18]

The relative specialisation measure has been calculated from employment data for single-digit industries for Level 2 regions in a number of OECD countries.[19] In view of the data limitations described in Annex 2.C, the analysis has been conducted in a fairly simple way, by measuring the level of specialisation in the industry composition of regional employment at two points in time. An important qualification should be noted at this point. As the relative specialisation measure reflects the difference between the sectoral composition of regional workforces compared with

that of the nation, it is not greatly affected by the cross-country differences in industry classification described in Annex 2.C.[20] Nevertheless, the results are not completely immune to such differences and are probably sensitive also to the timing of the observation periods, which varies from country to country.

Table 2.14 shows the average level of regional specialisation for each of the 12 countries studied. While the results provide some support for the view that European regions are less specialised than those in the United States [see Krugman (1993); Puga (1999)], they also show that this generalisation needs to be applied carefully. The regions in Canada, Italy, Spain, Portugal and the United States appear to have similar and relatively high levels of specialisation.

Correlation analysis reveals that the factors which bring these three southern European and two North American countries together in the high-specialisation group relate to particularly marked variation in the shares of regional employment in certain industries. For these five countries, a close and positive association is evident between the size of the agricultural and mining share and the degree of regional specialisation. As this share increases, the structure of regional employment becomes narrower and/or more dissimilar to that of other regions and the nation as a whole. The reverse applies to the manufacturing share which shows a lower but not insignificant negative correlation in all of the five countries except the United States. In North America, certain service industries also display a negative association with regional specialisation. These industries are finance, insurance, real estate and business services and transport, storage and public utilities in Canada, and the broad "other services" category and the retail trade industry in the United States.[21]

Table 2.14 also shows the rate of annual change in regional specialisation. The results provide little evidence of a general tendency for regions to have become more specialised, at least in comparison with the structure of the respective national workforces. Of the 12 countries surveyed, only Belgium, Hungary and New Zealand show increased specialisation. The employment structure within regions in the remaining countries appears to have slowly

Table 2.14. **Summary statistics for relative specialisation in the industry composition of regional employment**

	Statistic	Regional level	Number of regions	Period	Relative specialisation index[a]		
					Value in first year	Value in second year	Annual rate of change[b] (%)
Australia	Mean	1	8	1985-99	0.21	0.18	–0.73
	Standard deviation				0.19	0.15	1.78
Belgium	Mean	2	11	1980-92	0.22	0.21	0.84
	Standard deviation				0.12	0.08	2.52
Canada	Mean	2	58	1987-98	1.16	0.89	–6.81
	Standard deviation				5.82	6.27	2.16
France	Mean	2	21	1970-92	0.19	0.13	–1.08
	Standard deviation				0.08	0.05	1.46
Hungary	Mean	2	6	1993-98	0.13	0.16	4.51
	Standard deviation				0.03	0.05	5.72
Italy	Mean	2	20	1980-95	0.31	0.28	–0.57
	Standard deviation				0.13	0.13	1.21
Netherlands	Mean	2	12	1986-93	0.17	0.16	–1.00
	Standard deviation				0.07	0.05	1.78
New Zealand	Mean	2	12	1989-98	0.16	0.18	1.64
	Standard deviation				0.04	0.06	2.41
Japan	Mean	2	47	1980-95	0.20	0.17	–0.89
	Standard deviation				0.08	0.06	1.40
Portugal	Mean	2	5	1986-94	0.32	0.29	–1.62
	Standard deviation				0.11	0.13	2.42
Spain	Mean	2	16	1980-94	0.26	0.24	–0.38
	Standard deviation				0.11	0.09	1.52
United States	Mean	2	172	1970-97	0.29	0.25	–0.34
	Standard deviation				0.13	0.18	2.32

a) See Section III.B of the text for a description of the index.
b) The statistics reported under the annual change heading are calculated directly from the values of annual change in each region. They cannot be derived from the average levels of the regional specialisation index in years 1 and 2, shown for each country.
Sources: See Annex 2.C.

grown more diverse and similar to the industry profile of the national workforce. The rate of diversification seems to have been fastest in France, Portugal and the Netherlands.

A number of separate factors have influenced these regional developments. The significant increase in regional specialisation in Hungary appears to be due to rapid declines, of up to 7 per cent annually, in the employment shares of agriculture and mining in some regions, uneven performance in manufacturing which has seen the relevant share of employment decline in some regions and grow in others, and exceptionally strong expansion of the share held by finance, insurance, real estate and business services in the Northern Great Plains, at an annual rate of almost 11 per cent. These changes have acted to narrow the industry composition of employment in an absolute sense for four of the seven Hungarian regions and render five of them more unlike the national as a whole. In New Zealand, the growth in specialisation reflects marked regional variation in the change in the agriculture and mining share, and to a lesser extent, in the finance, insurance, real estate and business services and in accommodation, food and beverage services.

It is possible to describe some general patterns of industry change which underlie the gradual decline in regional specialisation observed in nine of the surveyed countries. At the national level, the shares of employment in service industries have often increased significantly while those of "traditional" industries like agriculture, mining, manufacturing and construction have declined or grown only slowly. In the service sector, the relevant regional shares of employment have tended to follow national developments fairly closely. There are some exceptions to this, such as the transport and communication industry in France, Italy and the Netherlands. Furthermore, the more detailed analysis of service industries reported below reveals a somewhat different picture for Australia, Canada and New Zealand. At this broad level of analysis, however, the results suggest that common growth in services employment in many regions has widened the composition of many regional workforces and made them more alike.

On the other hand, performance of the "traditional industries" shows strong regional variation, which encompasses both rapid growth and declines compared with the national developments. Examples include agriculture in Italy, building and construction in the Netherlands and manufacturing in the United States. Where traditional industries are undergoing expansion of previously small workforce shares, this will tend to broaden the structure of regional employment in an absolute sense and may also act to bring regions into closer alignment with the national profile. For instance, in the regions of Bismark, Fargo-Moorehead, Aberdeen, Rapid City and Sioux Falls, located in the northern plains of the United States, the manufacturing share of the workforce has risen from low levels towards the declining national average.

More detailed industry data (described in Annex 2.C) have allowed the examination of developments within the broad manufacturing and services sectors in certain countries. In the European Union, regions show somewhat stronger (but still declining) specialisation within the manufacturing sector than across all industries. Specialisation in European manufacturing is positively correlated with shares of regional employment held by the non-metallic products sub-sector and the ferrous and non-ferrous ores and metals sub-sector, and show a stronger but negative association with the metal products, machinery, equipment and electrical goods sub-sector.

In the service sector in Australia, Canada and New Zealand, specialisation levels are generally lower than those found in the all-industry analysis. However, the direction of change is reversed in Australia and Canada. All three countries appear to have become more specialised in service activities at a regional level. In Australia, this mainly reflects strong regional variation in the change in the shares of local employment held by retail trade, culture and recreational services and personal and other services. Strong regional variation is evident across a wider range of service industries in New Zealand and Canada.[22]

The pace of change in regional specialisation seems slow, however, given evidence of the high turnover of both firms and labour in the United States and some other countries [Henderson (1997) and Henderson *et al*. (1995)]. For all regions in the analysis, the coefficient of correlation between the first and second-year observations has a value of 0.64. For the United States and France, which cover long time periods, the correlation coefficients are 0.53 and 0.43, respectively. All other countries show values in excess of 0.8. These results are compatible with the findings of Henderson *et al*. (1995) that, once other features of regions are taken into account, the composition of regional activity tends to persist over time.

Interpreted broadly, the results suggest that the three conclusions drawn by Kim (1997) about industry developments in the United States may apply to other countries. Agriculture and mining appear to be strongly localised in a number of countries, manufacturing is characterised by high but declining levels of regional specialisation in the European Union, and the growth of the more diffuse service sector is also acting to make the composition of regional employment more diverse. On the other hand, Australia,

Canada and New Zealand provide some tentative evidence of increasing specialisation in service activities.

With the data available it has not been possible to conduct a rigorous analysis of the relationship between regional workforce specialisation and changes in regional labour market disparities. On the basis of simple correlation analysis, it appears that changes in the degree of specialisation or diversity are not closely associated with regional variations in employment growth: there is a zero correlation between changes in relative specialisation and relative employment growth. This does not necessarily mean that individual industries do not matter. In the United States, for instance, a particularly strong correlation is evident between growth in manufacturing employment and growth in finance, insurance and real estate services employment and overall regional jobs growth (0.78 and 0.84, respectively). Depending on the state of the actual industries which are present, however, the breadth of industry composition in itself does not seem to greatly affect the job creation potential of regions compared with national employment growth. This result seems generally consistent with the finding of the shift-share analysis in Section II that other regional factors are more important than industry-mix in accounting for differences between regional and national employment growth rates.[23]

Conclusions

Previous OECD analyses found evidence that differences in regional unemployment rates increased in many countries during the 1970s and early 1980s. The analysis reported in this chapter shows that these differences generally did not decline greatly between 1985 and 1997, in some cases they even increased. Regional disparities remain important in many countries, notably in Italy and Germany. Moreover, with the exceptions of Australia and the United States, the relative position of individual regions has changed little. This is especially true of regions with the highest or lowest unemployment rates. High unemployment regions also suffer from related forms of labour market disadvantage such as low labour force participation and, in many cases, long-term unemployment.

Dispersion is also evident in the pace of employment growth, but the position of individual regions seems to be slightly more volatile than in the case of unemployment. Variation in the rate of regional employment growth is related to changes in unemployment rates, but in some cases, the simple link between the two characteristics is weak, and occasionally takes the wrong sign. It appears that, while employment growth is usually a necessary condition for reductions in unemployment, it does not automatically guarantee that such improvements will occur. Other factors, such as adjustment in participation or migration-induced population change also come into play.

The presence of persistent regional labour market disparities means that the need for effective regional policies is as great as ever, notwithstanding the general labour market improvements in many OECD countries in recent years.

The relatively loose relationship between regional employment growth and unemployment in some countries suggests that a two-pronged approach will be needed. On the one hand, policy makers need to foster employment growth in lagging regions. If regional disparities are closely related to the characteristics of regional labour forces, improving labour productivity of the regional populations through appropriate training and other labour market policies is essential. Diversification of economic activity is also often seen as a way of shock-proofing regions and equipping them to tap new growth opportunities. This chapter's analysis suggests that the industry structure of many regions may already be diversifying in response to structural change in the labour market. The pace of change appears, however, to be very slow, and it may be difficult to speed it up. Furthermore, the breadth of regional activity in itself may not be a major cause of differences in regional employment performance. Consequently, a change in the mode of specialisation may be a more viable goal than diversification.

Fostering employment growth alone, however, will not be sufficient to achieve sustainable reductions in labour market disadvantage in many regions. A key policy issue is how to strengthen the adjustment mechanisms that act to minimise the extent of regional disparities or mis-match. Information gaps, imperfect competition in product and labour markets and other factors can represent impediments to adjustment, which can act on both the capital and labour side. For example, the analysis has shown that in some countries, regional wages do not reflect local unemployment conditions. Also, the examination of migration and commuting flows across OECD countries has shown that the scale of labour mobility is limited in many countries, and therefore is probably not sufficient to act as an adjustment mechanism.

Encouraging greater migration or commuting to growth centres may be, therefore, an appropriate solution. This would require some rethinking of policies regarding relocation incentives. However, adopting such a policy stance could involve important welfare and economic costs. Outward migration from lagging regions may permanently weaken their growth potential and increase the risk of low income and/or joblessness for the remaining residents. This is all the more true if, as the evidence

shows, the highly skilled have a greater likelihood of leaving weak regions than the low skilled. Particularly in small centres and rural regions, concerns about de-population and skill losses are compounded by hostility to reductions in government and private sector services and more general processes of structural change. The progressive breakdown of the relationship between place of work and place of living that is being enabled by the considerable advances in transport infrastructure and in communication and information technology, should help reduce the need for labour migration. This, in turn, should help to alleviate concerns about depopulation and skill loss.

Another key question concerns how regional policy should be implemented. The evidence presented in the chapter suggests that labour market problems are either highly localised in nature or they reflect major territorial divides within a country. In many countries, labour market disparities are wider when small territorial units are examined, especially in Australia, the United Kingdom and the United States, whereas, in Germany and Italy, disparities are evident at the level of broad areas, within which there is relative homogeneity. These different patterns of disparities may have different policy implications. Strong emphasis needs to be placed on structural and macro-economic policies co-ordinated at the national level where there are major regional divides within a country, whereas the existence of "pockets of unemployment" within regions may require more specific attention on area-based, integrated programmes that combine local initiatives with external assistance.

In any case, the decomposition of regional variation in unemployment and employment growth indicates that differences in regional labour market performance arise mainly from location-specific factors that seem to underpin the competitive advantage of regions. The analysis conducted here, however, does not allow the identification of these factors. They may encompass a number of tangible and intangible characteristics of regions, such as accessibility to product and factor markets, unmeasured characteristics of labour supply, the extent of innovative activity and the efficiency of institutions and support services available. Social capital theory also stresses the importance of the norms and interactions embedded in the social structures existing in specific regions that enable people to co-ordinate action in order to improve their welfare and foster growth.

If regional labour market disparities reflect local conditions, a "bottom-up" approach that harnesses local knowledge, initiative and commitment may be the best way of developing and implementing strategies to foster growth, encourage labour market participation and reduce unemployment and other forms of social exclusion. In many regions across the OECD area, local networks and partnerships have been formed to encourage local entrepreneurship, attract and integrate new investment and harness the potential benefits arising from decentralisation of government programmes including the public employment service and active labour market programmes. Not all regions, though, possess the critical mass of social capital necessary to initiate and sustain effective local partnerships or networks. In such cases, some form of external stimulus and direction may be appropriate. Furthermore, while "bottom-up" approaches have now largely replaced the more centrally directed and interventionist regional assistance measures that prevailed in the past, national and other supra-regional governments still play a critical role in tackling regional disparities. This role ranges from the establishment of broad policy settings and frameworks for distribution of regional assistance to the development of major hard and soft infrastructure enabling sustainable growth.

NOTES

1. The "regions" that are used in the context of the present analysis do not necessarily correspond to the administrative regions as defined in the countries. For example, in the United Kingdom, only Level 1 territorial units are proper regions as defined in the national context, while here both Level 1 and Level 2 units are referred to as "regions".

2. If regional dispersion is measured by the standard deviation rather than the coefficient of variation, the picture would be a bit different. Geographical dispersion of unemployment rates for young people would always be higher than for overall unemployment, given that youth unemployment is significantly higher than the average across almost all countries and regions. The same is true for women in almost all countries.

3. This does not imply, however, that unemployment is concentrated among youth and women in high-unemployment regions. That is, the incidence of youth and female joblessness is not positively associated with overall unemployment across regions.

4. This same technique has been used by Pench *et al.* (1999).

5. For the OECD as a whole, they are 0.06, –0.15 and 0.10, respectively. Only in a very small number of cases are the correlations large and significant. These are agriculture in Italy (0.78), manufacturing in Italy (–0.61), manufacturing in Japan (–0.60), services in Japan (0.72), agriculture in western Germany (–0.57) and services in western Germany (0.52).

6. OECD (1989) observed that regions on the periphery of Europe all suffered from high unemployment relative to neighbouring core areas.

7. This definition has been formulated by the World Bank. The term social capital has found its way into economic analysis only recently, although various elements of the concept have been present under different names for a long time in institutional economics as well as in the political, sociological and anthropological literature. Economists have added the focus on the contribution of social capital to economic growth. There is still no consensus, however, on which aspects of interaction and organisation merit the label of social capital, nor on how best to measure it and how to determine empirically its contribution to economic growth and development [Grootaert (1998)].

8. The only negative coefficient, applying to Level 1 regions in Portugal, is likely to be spurious given the very small number of regions.

9. For most countries, the degree of unemployment disparity follows a similar course, regardless of whether Level 1 or Level 2 regions are examined.

10. The two components of the gap between the regional and national employment growth rates are defined as follows:

$(r - n) =$	(Gap between regional and national employment growth rates)
$\Sigma_i \, R_i/R \, (n_i - n) +$	(Industry mix)
$\Sigma_i \, R_i/R \, (r_i - n_i)$	(Regional share)

where:

R = total regional employment
R_i = regional employment in industry i
r = regional employment change rate
r_i = regional employment change rate in sector i
n = national employment change rate
n_i = national employment change rate in sector i

In Table 2.9, the gap between regional and national employment growth rates and the two components are expressed as averages of the absolute values for each region.

11. Rones (1986) notes, however, that although the industry-mix and regional components of regional change are treated in the shift-share analysis as if they were unrelated factors, they are in reality quite inter-related. For example, an area with an unfavourable industry mix is likely to experience below-average employment growth not only in its disadvantaged industries, but also in its stronger ones. These are the spill-over effects of the industry mix that are captured by the regional share.

12. Another comparability problem is that the statistics are expressed in nominal terms. Differences in real earnings (after deflating by region-specific price indices) would probably be smaller than the differences in nominal earnings discussed above, as prices tend to be higher in high-earning regions, if only because earnings for some people are the price of services for others. In particular, variations in housing costs are a major ingredient of regional variations in the cost of living. Housing is the largest non-tradable good in the household's consumption basket and, hence, is likely to be the largest source of differences in the real consumption wage across locations. Lack of data makes it difficult to say how important this factor is in practice.

13. For France, the importance of incorporating a spatial dimension into the analysis of wage differentials is confirmed in INSEE (1997). In this article, average annual earnings for 22 regions and 96 departments are decomposed into a structural component and a residual component reflecting the importance of the regional dimension. The latter component is important, especially in the metropolitan area of Ile de France.

14. Casavola *et al.* (1995) examine data on earnings paid in Italian firms employing less than 10 employees, where there are less institutional constraints on wage flexibility, and obtain a slightly different picture. Earnings differentials across provinces are higher than in bigger firms, even when taking account of the effect of industry mix, and the relationship between the level of wages and unemployment by province is negative. However, in the southern provinces, only male unemployment appears to play a moderating effect on wages.

15. Human capital theory incorporates individual aspects of decision making and claims that migration decisions depend on the individual (or family) assessment of current and future expected costs and benefits of migrating, with a view to maximising lifetime expected utility. Gravity models have been developed by geographers for the statistical modelling of broad aggregate inter-regional population flows. A common explanatory variable in these models is distance between regions, which can capture the higher costs of looking for work in a more distant location as well as other costs, such as breaking links with family and friends and actual moving costs.

16. As Krugman (1993) has acknowledged, research has been unable to detect major clusters of related industry activities such as found in Silicon Valley.

17. The formula for the Relative Specialisation Index is $RS_i = \Sigma_i |D_{ij} - D_j|$ where *i* is the region, D*ij* is the share of regional employment in industry *j* and D*j* is the share of national employment in industry *j*.

18. In the case of this analysis, a region's industry structure necessarily influences the respective national structure. Consequently, the two profiles can never diverge completely, thus preventing the Index from reaching a value of two.

19. The index was also calculated for Level 1 Regions. This yields different values but does not greatly affect the differences revealed between countries and over time with the Level 2 Analysis.

20. The sensitivity of the relative measure to an imbalance in the number of industry categories across each of the three very broad sectors was tested by conducting a separate analysis for Level 2 regions in the European Union countries, using both the full 17 categories in the original classification and the condensed framework employed in the main analysis (see Annex 2.C). While the regional values change according to the framework used, the general picture is not greatly affected. At the regional level, the two sets of results are quite closely related, yielding correlation coefficients of between 0.85 and 0.89 whether levels or changes are compared. On the other hand, simple diversity measures which focus only on the region under examination are greatly affected by differences in the number of categories.

21. The correlation coefficients were calculated between the share of regional employment and the value of the relative specialisation measure in the second year of observation. The key results are as follows: For *Canada*: agriculture and related industries and mining, 0.77; finance, insurance, real estate and business services -0.67; transport, storage and public utilities –0.51; manufacturing –0.47; For the *United States*: agriculture and related industries and mining 0.89, other services –0.79; retail trade –0.60; finance, insurance and real estate services –0.42; For *Italy, Portugal and Spain*: agriculture and related industries 0.64; manufacturing –0.51; building and construction 0.43. The results for agriculture and mining in the United States may be susceptible to distortion resulting from the derivation of employment levels for this sector as a residual (see Annex 2.C). When correlation coefficients are calculated across all regions surveyed, the results are typically twenty to forty percentage points lower than the values stated above.

22. The first-year value, second-year value and rate of annual change in the relative specialisation measure for the services sector are as follows: *Australia*; 0.18; 0.17; 0.33; *Canada* 0.23; 0.23; 0.51; *New Zealand*; 0.18; 0.25; 4.2.

23. Similar conclusions are drawn by Dathe and Schmid (2000) who also find that individual industries are important for employment growth in German regions.

Annex 2.A

The Territorial Units of Observation

1. Definition of regional units

Table 2.A.1 provides information on the type, population, area and population density of the territorial units used in the analysis. Table 2.A.2 lists the names of all the territorial units in each country.

2. Detailed country notes

Australia

States and territories are used for presentation of Level 1 data. Territorial units at Level 2 are represented by Statistical Regions, which are components of the Australian Standard Geographical Classification. Statistical Regions were designed for the production of labour force survey data and are constrained to state/territory boundaries. Minor changes in the regional classification occurred in 1998, affecting the total number of statistical regions (which is reduced from 60 to 59).

Canada

Data are presented by Provinces at Level 1 and by LFS Economic Regions at Level 2.

LFS Economic Regions generally correspond to regions used for administrative and statistical purposes. They are established on the basis of each decennial sample redesign of the Labour Force Survey. Their boundaries are constrained to province boundaries.

Yukon and the Northwest Territories are not included in the analysis because data are not sufficiently robust. Similarly, the Economic Regions belonging to these provinces, as well as six others in which the population is too small (less than 50 000 people) have also been removed from the analysis.

Czech Republic, Hungary and Norway

Data for Level 2 are presented according to a classification established by EUROSTAT on the basis of similar principles as the NUTS classification (see below) [EUROSTAT (1999*b*)]. There is no territorial breakdown at Level 1.

European Union countries

Data are presented by NUTS 1 and NUTS 2 territorial units according to the Nomenclature of Territorial Units for Statistics used by Eurostat. Eurostat (1999*a*) also calls NUTS 2 regions "Basic Regions" and describes them as "the appropriate level for analysing regional-national problems", whereas "NUTS 1 regions (major socio-economic regions grouping together basic regions) should be used for analysing regional Community issues such as the effect of economic integration on areas at the next level down from national areas".

For France, the Départements d'Outre Mer (DOM) are not included in the analyses. In Spain, Ceuta and Melilla are excluded.

In the United Kingdom, the reorganisation of local government during 1995-98 is reflected in a completely new NUTS classification as from 1995. The main change is that the county and district levels are replaced by "unitary areas" in some parts of the country. This has resulted in some modifications at NUTS 1 and 2 levels. It has not been possible to link the time series relating to the old classification to the new one and, therefore, data are available only starting from 1995. Minor administrative changes have also occurred in Finland, Ireland, eastern Germany and Sweden, but in these cases it has been possible to link the time-series information.

Denmark and Luxembourg have no territorial breakdown at both Level 1 and 2; Ireland has no breakdown at Level 1.

New Zealand

No territorial breakdown at Level 1 is examined. Level 2 territorial units are represented by 12 Regional Council Areas. The Areas are defined according to a range of criteria relating to the location of regional communities, water catchment, natural resource management, land use planning and environmental matters. For the purposes of this chapter, some Regional Council Areas have been amalgamated because of small sample size.

United States

Data are presented by states for Level 1 and by Economic Areas as defined by the Bureau of Economic Analysis (BEA) for Level 2.

BEA Economic Areas consist of one or more economic nodes – metropolitan areas or similar areas that serve as centres of economic activity – as well as the surrounding counties that are economically related to them. The main factor used in determining the economic relationships among counties is commuting patterns, so each economic area includes, as far as possible, the place of work and the place of residence of its labour force [Johnson (1995)].

Economic Areas are generally smaller than states. Unlike territorial classifications for the other countries, however, the two-level regional classification used for the United States is not hierarchical because the boundaries of Economic Areas are not always constrained to state boundaries. In addition, the Washington-Baltimore area aggregates the District of Columbia with the surrounding counties of Maryland.

Table 2.A.1. Characteristics of the territorial units used for analysis[a]

LEVEL 1

	Type	Number of regions	Average pop. (1 000)	Min. pop. (1 000)	Max. pop. (1 000)	Average area (km^2)	Min. area (km^2)	Max. area (km^2)	Average density	Min. density	Max. density
Australia	States and territories	8	2 315	187	6 273	961 495	2 360	2 529,880	21.2	0.1	130.5
Austria	Gruppen von Bundesländern	3	2 689	1 771	3 404	27 953	23 554	34 384	99.0	68.3	144.5
Belgium	Régions	3	3 381	948	5 880	10 173	161	16 844	2 168.7	196.8	5 874.2
Canada	Provinces	10	2 991	137	11 264	606 084	5 660	1 540,680	8.0	1.37	24.2
Czech Republic	–	1	10 290	–	–	78 866	–	–	130.5	–	–
Finland	–	1	5 107	–	–	303 003	–	–	16.9	–	–
France	Zones économiques d'aménagement du territoire	8	7 282	4 002	11 027	67 996	12 012	145 645	221.3	58.9	918.0
Germany	Länder	16	5 126	678	17 948	22 295	404	70 554	672.7	78.4	3 890.2
Greece	Groups of development regions	4	2 622	1 013	3 448	32 906	3 808	56 457	268.1	48.9	905.3
Hungary	–	1	10 174	–	–	93 030	–	–	109.4	–	–
Ireland	–	1	3 626	–	–	70 273	–	–	51.6	–	–
Italy	Gruppi di regioni	11	5 224	1 604	8 959	27 392	13 595	44 430	208.2	69.0	425.5
Japan	Regions	10	12 649	4 174	33 003	37 758	13 548	83 408	521.0	68.3	2 435.9
Korea	–	1	44 609	–	–	99 408	–	–	448.7	–	–
Mexico	States	32	2 990	412	12 754	61 227	1 525	245 962	262.2	5.6	5 621.3
Netherlands	Landsdelen	4	3 892	1 634	7 267	10 382	7 291	11 871	380.4	143.5	612.2
New Zealand	–	1	3 618	–	–	41 144	–	–	88.0	–	–
Norway	–	1	4 418	–	–	323 759	–	–	13.6	–	–
Portugal	Continente + Regiões autónomas	3	3 311	243	9 433	30 635	779	88 797	180.5	104.1	331.2
Spain	Agrupación de comunidades autónomas	7	5 614	1 570	10 714	72 113	7 242	215 025	183.5	24.6	627.8
Sweden	–	1	8 845	–	–	410 934	–	–	21.5	–	–
United Kingdom	Government Office Regions + Wales, Scotland, Northern Ireland	12	4 900	1 663	7 895	20 318	1 584	78 132	622.4	65.6	4 466.9
United States	States	51	5 200	480	31 762	179 591	159	1 477 268	70.1	0.4	1 695.9
EU[b]	NUTS-1	76	4 914	243	17 948	45 564	161	410 934	412.8	16.9	5 874.2
OECD[b]		192	5 130	137	44 609	160 006	159	2 529 880	248.0	0.1	5 874.2

Table 2.A.1. **Characteristics of the territorial units used for analysis**[a] *(cont.)*

LEVEL 2

	Type	Number of regions	Average pop. (1 000)	Min. pop. (1 000)	Max. pop. (1 000)	Average area (km^2)	Min. area (km^2)	Max. area (km^2)	Average density	Min. density	Max. density
Australia	Labour force regions	60	309	110	664	126 656	58	2 414 000	a 607.3	0.1	4 200.3
Austria	Bundesländer	9	896	276	1 601	9 318	415	19 173	501.0	52.3	3 856.6
Belgium	Provinces	11	922	241	1 631	2 774	161	4 440	830.5	54.3	5 874.2
Canada	Economic regions	66	452	50	4 858	56 665	245	523 252	125.1	0.4	3 575.6
Czech Republic	Groups of Kraje	8	1 286	1 108	1 660	9 858	496	17 617	413.8	66.9	2 405.8
Finland	Suuralueet (excl. Aaland)	5	1 021	559	1 798	61 981	10 405	128 294	38.2	4.4	129.1
France	Régions	22	2 648	261	11 027	24 726	8 280	45 348	134.9	30.0	918.0
Germany	Regierungsbezirke	36	2 278	508	5 291	9 909	404	29 480	453.6	78.4	3 890.2
Greece	Development regions	13	807	184	3 448	10 125	2 307	18 811	120.6	32.0	905.3
Hungary	Tervezesi-Statistikai Regio	7	1 442	980	2 857	13 290	6 918	18 314	132.0	69.2	413.0
Ireland	Regions	2	1 813	965	2 661	35 137	33 276	36 997	65.0	29.0	71.9
Italy	Regioni	20	2 873	119	8 959	15 066	3 264	25 707	176.2	36.5	425.5
Japan	Prefectures	47	2 672	615	11 774	8 034	1 875	83 408	631.7	68.2	5 392.7
Korea	Cities and provinces	15	2 976	505	10 231	6 627	501	19 023	2 292.3	88.5	16 882.8
Mexico	..	..	..	..	..	..	..	..	..	..	..
Netherlands	Provincies	12	1 297	282	3 345	3 461	1 434	5 741	390.5	107.1	970.7
New Zealand	Regional council areas	12	301	97	1 069	3 410	1 263	6 951	130.8	18.0	659.0
Norway	Landsdeler	7	631	368	953	46 251	5 371	112 948	37.3	4.1	177.5
Portugal	Commissões de coordenaçéão regional + regiões autónomas	7	1 419	243	3 545	13 129	779	26 931	148.7	19.3	331.2
Spain	Comunidades autónomas	17	2 304	260	7 144	29 692	5 014	94 193	135.6	21.4	627.8
Sweden	Riksområden	8	1 106	391	1 772	51 367	6 490	154 312	63.0	3.4	268.8
United Kingdom	Counties, inner and outer London; unitary authorities or Local Enterprise Company areas	37	1 589	372	4366	6 590	320	39 777	768.2	9.4	8 448.7
United States	BEA Economic areas	172	1 542	61	24 294	53 251	6 616	1 477 268	46.3	0.4	337.2
EU[b]	NUTS-2	201	1 917	119	11 027	17 823	161	154 312	287.5	3.4	5 874.2
OECD[b]		595	1 481	50	24 294	43 790	58	2 414 000	304.5	0.1	16 882.8

.. Data not available.
– Not applicable.
a) Data on population are 1997 averages, except for Canada (1999), the Czech Republic, Hungary, Ireland, Japan (Level 1), Mexico and Norway (1998); Belgium, France, New Zealand, the United Kingdom and the United States (1996); Japan (Level 2) and Korea (1995).
b) Also includes Denmark and Luxembourg, which constitute one Level 1 and Level 2 region each.
Sources: National submissions.

Table 2.A.2. **List of regions**

	LEVEL 1	LEVEL 2
AUSTRALIA	Australian Capital Territory	Australian Capital Territory
	New South Wales	Eastern Suburbs; St. George-Sutherland; Canterbury-Bankstown; Central Western Sydney; Outer Western Sydney; Blacktown-Baulkham Hills; Lower Northern Sydney; Hornsby-Ku-ring-gai; Northern Beaches; Gosford-Wyong; Inner Sydney and Inner Western Sydney; Fairfield-Liverpool and Outer South Western Sydney; Richmond-Tweed and Mid-North Coast; Murray-Murrumbidgee; Hunter; Illawarra and South Eastern; Northern, Far West-North Western and Central West
	Northern Territory	Northern Territory
	Victoria	Inner Melbourne; Southern Melbourne; Inner Eastern Melbourne; North Eastern Melbourne; North Western Melbourne; Outer Western Melbourne; Mornington Peninsula; Outer Eastern Melbourne; South Eastern Melbourne; Barwon-Western District; Central Highlands-Wimmera; Loddon-Campaspe-Mallee; Goulburn-Ovens-Murray; All Gippsland
	Queensland	Brisbane City Inner Ring; Brisbane City Outer Ring; South and East Brisbane Balance; North and West Brisbane Balance; South and East Moreton; North and West Moreton; Wide Bay-Burnett; Mackay-Fitzroy-Central West; Darling Downs-South West; Northern-North West; Far North
	South Australia	Northern Adelaide; Western Adelaide; Eastern Adelaide; Southern Adelaide; Southern and Eastern South Australia; Northern and Western South Australia
	Western Australia	Central Metropolitan; East Metropolitan; North Metropolitan; South West Metropolitan; South East Metropolitan; Lower Western Western Australia; Remainder-Balance Western Australia
	Tasmania	Northern Sector; Mersey-Lyell Sector; Greater Hobart-Southern Sector
AUSTRIA	Ostösterreich	Burgenland; Niederösterreich; Wien
	Südösterreich	Kärnten; Steiermark
	Westösterreich	Oberösterreich; Salzburg; Tirol; Vorarlberg
BELGIUM	Région Bruxelles-capitale/Brussels hoofdstad gewest	Région Bruxelles-capitale/Brussels hoofdstad gewest
	Vlaams Gewest	Antwerpen; Limburg; Oost-Vlaanderen; Vlaams Brabant; West-Vlaanderen
	Région wallonne	Brabant Wallon; Hainaut; Liège; Luxembourg; Namur
CANADA	Newfoundland	Avalon Peninsula; South Coast; West Coast; Notre-Dame-Central Bonavista Bay
	Prince Edward Island	Prince Edward Island
	Nova Scotia	Cape Breton; North Shore; Annapolis Valley; Southern; Halifax
	New Brunswick/Nouveau-Brunswick	Campbellton-Miramichi; Moncton-Richibucto; Saint John-St.Stephen; Fredericton-Oromoncto; Edmundston-Woodstock
	Québec	Gaspésie – Ile-de-la-Madeleine; Bas-Saint-Laurent; Québec; Chaudière-Appalaches; Estrie; Centre-du-Québec; Montérégie; Montréal; Laval; Lanaudière; Laurentides; Outaouais; Abitibi-Témiscamingue; Mauricie; Saguenay-Lac; Saint-Jean; Côte-Nord; Nord du Québec
	Ontario	Ottawa; Kingston-Pembroke; Muskoka-Kawarthas; Toronto Kitchener-Waterloo; Hamilton-Niagara; Peninsula; London; Windsor-Sarnia; Startford-Bruce; Peninsula; Northeast Northwest
	Manitoba	Southeast; South Central; Southwest; North Central; Winnipeg Interlake; Parkland; North
	Saskatchewan	Regina; Swift Current-Moose; Jaw; Saskatoon-Biggar; Yorkton-Melville; Prince Albert; Northern
	Alberta	Lethbridge-Medicine Hat; Drumheller; Calgary; Athabasca-Jasper-Banf; Red Deer-Rocky Mountain House; Edmonton Grande Prairie – Peace River; For McMurray-Camrose
	British Columbia	Vancouver Island and Coast; Lower Mainland-Southwest; Thompson-Okanagan; Kootenay; Cariboo; North Coast; Nechako; Northeast

Table 2.A.2. **List of regions** *(cont.)*

	LEVEL 1	LEVEL 2
CZECH REPUBLIC	Czech Republic	Praha; Střední Cechy; Jihozápad; Severozápad; Severovýchod; Jihovýchod; Střední Morava; Ostravsko
DENMARK	Denmark	Denmark
FINLAND	Manner-Suomi	Itä-Suomi; Väli-Suomi; Pohjois-Suomi; Uusimaa (suuralue); Etelä-Suomi
FRANCE	Île de France	Île de France
	Bassin parisien	Champagne-Ardenne; Picardie; Haute-Normandie; Centre Basse-Normandie; Bourgogne
	Nord – Pas-de-Calais	Nord – Pas-de-Calais
	Est	Lorraine; Alsace; Franche-Comté
	Ouest	Pays de la Loire; Bretagne; Poitou-Charentes
	Sud-Ouest	Aquitaine; Midi-Pyrénées; Limousin
	Centre-Est	Rhône-Alpes; Auvergne
	Méditerranée	Languedoc-Roussillon; Provence-Alpes-Côte d'Azur; Corse
GERMANY (whole Germany from 1991 onwards)	Baden-Württemberg	Stuttgart; Karlsruhe; Freiburg; Tübingen
	Bayern	Oberbayern; Niederbayern; Oberplfalz; Oberfranken; Mittelfranken; Unterfranken; Schwaben
	Berlin	Berlin
	Brandenburg	Brandenburg
	Bremen	Bremen
	Hamburg	Hamburg
	Hessen	Darmstadt; Gieen; Kassel
	Mecklenburg-Vorpommern	Mecklenburg-Vorpommern
	Niedersachsen	Braunschweig; Hannover; Lüneburg; Weser-Ems
	Nordrhein-Westfalen	Düsseldorf; Köln; Münster; Detmold; Arnsberg
	Rheinland-Pfalz	Koblenz; Trier; Rheinhessen-Pfalz
	Saarland	Saarland
	Sachsen	Sachsen
	Sachsen-Anhalt	Sachsen-Anhalt
	Schleswig-Holstein	Schleswig-Holstein
	Thüringen	Thüringen
GREECE	Voreia Ellada	Anatoliki Makedonia, Thraki; Kentriki Makedonia; Dytiki Makedonia; Thessalia
	Kentriki Ellada	Ipeiros; Ionia Nisia; Dytiki Ellada; Sterea Ellada; Peloponnisos
	Attiki	Attiki
	Nisia Aigaiou, Kriti	Voreio Aigaio; Notio Aigaio; Kriti
HUNGARY	Hungary	Közép-Magyarország; Közep-Dunántúl; Nyugat-Dunántúl; Dél-Dunántúl; Észak-Magyarország; Észak-Alföld; Dél-Alföld
IRELAND	Ireland	Border, Midland and West; South and East
ITALY	Nord Ovest	Piemonte; Valle d'Aosta; Liguria
	Lombardia	Lombardia
	Nord Est	Trentino-Alto Adige; Veneto; Friuli-Venezia Giulia

Table 2.A.2. **List of regions** *(cont.)*

	LEVEL 1	LEVEL 2
ITALY *(cont.)*	Emilia-Romagna	Emilia-Romagna
	Centro	Toscana; Umbria; Marche
	Lazio	Lazio
	Abruzzo-Molise	Abruzzo; Molise
	Campania	Campania
	Sud	Puglia; Basilicata; Calabria
	Sicilia	Sicilia
	Sardegna	Sardegna
JAPAN	Hokkaido	Hokkaido
	Tohoku	Aomori; Iwate; Miyagi; Akita; Yamagata; Fukushima
	Southern-Kanto	Saitama; Chiba; Tokyo; Kanagawa
	Northern-Kanto Koshin	Ibaragi; Tochigi; Gumma; Nagano; Yamanashi
	Hokuriku	Niigata; Toyama; Ishikawa; Fukui
	Tokai	Gifu; Shizuoka; Aichi; Mie
	Kinki	Kyoto; Osaka; Hyogo; Shiga; Nara; Wakayama
	Chugoku	Tottori; Shimane; Okayama; Hiroshima; Yamaguchi
	Shikoku	Tokushima; Kagawa; Ehime; Kochi
	Kyushu	Fukuoka; Saga; Nagasaki; Oita; Kumamoto; Miyazaki; Kagoshima; Okinawa
KOREA	Korea	Seoul; Pusan; Taegu; Inchon; Kwangju; Taejon; Kyonggi; Kang-won; Chungchongbuk; Chungchongnam; Chollabuk; Chollanam; Kyongsangbuk; Kyongsangnam; Cheju
LUXEMBOURG	Luxembourg	Luxembourg
MEXICO	Aguascalientes; Baja California; Baja California Sur; Campeche; Coahuila; Colima; Chiapas; Chihuahua; Distrito Federal; Durango; Guanajuato; Guerrero; Hidalgo; Jalisco; Edo. De Mex.; Michoacán; Morelos; Nayarit; Nvo. León; Oaxaca; Puebla; Querétaro; Quintana Roo; San Luis Potosí; Sinaloa; Sonora; Tabasco; Tamaulipas; Tlaxcala; Veracruz; Yucatán; Zacatecas;	–
NETHERLANDS	Noord-Nederland	Groningen; Friesland; Drenthe
	Oost-Nederland	Overijssel; Gelderland; Flevoland
	West-Nederland	Utrecht; Noord-Holland; Zuid-Holland; Zeeland
	Zuid-Nederland	Noord-Brabant; Limburg
NEW ZEALAND	New Zealand	Auckland Region; Bay Of Plenty Region; Canterbury Region; Gisborne & Hawke's Bay Regions; Manawatu-Wanganui Region; Nelson-Marlborough & West Coast regions; Northland Region; Otago Region; Southland Region; Taranaki Region; Waikato Region; Wellington Region

Table 2.A.2. **List of regions** *(cont.)*

	LEVEL 1	LEVEL 2
NORWAY	Norway	Agder Rogaland; Hedmark Oppland; Northern Norway; Oslo and Akershus; South East; Trondelag; Western Norway
PORTUGAL	Portugal (Continent)	Norte; Centro; Lisboa e Vale do Tejo; Alentejo; Algarve
	Açores	Açores
	Madeira	Madeira
SPAIN	Noroeste	Galicia; Principado de Asturias; Cantabria
	Noreste	País Vasco; Comunidad Foral de Navarra; La Rioja; Aragón
	Comunidad de Madrid	Comunidad de Madrid
	Centro	Castilla y León; Castilla la Mancha; Extremadura
	Este	Cataluña; Comunidad Valenciana; Baleares
	Sur	Andalucía; Murcia
	Canarias	Canarias
SWEDEN	Sweden	Stockholm; Östra Mellansverige; Sydsverige; Norra Mellansverige; Mellersta Norrland; Övre Norrland; Småland med öarna; Västsverige
UNITED KINGDOM	North East	Tees Valley and Durham; Northumberland; Tyne and Wear
	North West (including Merseyside)	Cumbria; Cheshire; Greater Manchester; Lancashire; Merseyside
	Yorkshire and The Humber	East Riding and North Lincolnshire; North Yorkshire; South Yorkshire; West Yorkshire
	East Midlands	Derbyshire and Nottinghamshire; Leicestershire; Rutland and Northants; Lincolnshire
	West Midlands	Herefordshire, Worcestershire and Warks; Shropshire and Staffordshire; West Midlands
	Eastern	East Anglia; Bedfordshire; Hertfordshire; Essex
	London	Inner London; Outer London
	South East	Berkshire, Bucks and Oxfordshire; Surrey; East and West Sussex Hampshire and Isle of Wight; Kent
	South West	Gloucestershire; Wiltshire and North Somerset; Dorset and Somerset; Cornwall and Isles of Scilly; Devon
	Wales	West Wales and The Valleys; East Wales
	Scotland	North Eastern Scotland; Eastern Scotland; South Western Scotland Highlands and Islands
	Northern Ireland	Northern Ireland
UNITED STATES	Alabama; Alaska; Arizona; Arkansas; California; Colorado; Connecticut; Delaware; District of Columbia; Florida; Georgia; Hawaii; Idaho; Illinois; Indiana; Iowa; Kansas; Kentucky; Louisiana; Maine; Maryland; Massachusetts; Michigan; Minnesota; Mississippi; Missouri; Montana; Nebraska; Nevada; New Hampshire; New Jersey; New Mexico; New York; North Carolina; North Dakota; Ohio; Oklahoma; Oregon; Pennsylvania; Rhode Island; South Carolina; South Dakota; Tennessee; Texas;	Bangor; Portland; Boston-Worcester-Lawrence-Lowell-Brockton; Burlington; Albany-Schenectady-Troy; Syracuse; Rochester; Buffalo-Niagara Falls; State College; New York-Northern New Jersey-Long Island; Harrisburg-Lebanon-Carlisle; Philadelphia-Wilmington-Atlantic City; Washington-Baltimore; Salisbury; Richmond-Petersburg; Staunton; Roanoke; Greensboro-Winston-Salem-High Point; Raleigh-Durham-Chapel Hill; Norfolk-Virginia Beach-Newport News; Greenville; Fayetteville; Charlotte-Gastonia-Rock Hill; Columbia; Wilmington; Charleston-North Charleston; Augusta-Aiken; Savannah; Jacksonville; Orlando; Miami-Fort Lauderdale; Fort Myers-Cape Coral; Sarasota-Bradenton; Tampa-St. Petersburg-Clearwater; Tallahassee; Dothan; Albany; Macon; Columbus; Atlanta; Greenville-Spartanburg-Anderson; Asheville; Chattanooga; Knoxville; Johnson City-Kingsport-Bristol; Hickory-Morganton; Lexington; Charleston; Cincinnati-Hamilton; Dayton-Springfield; Columbus; Wheeling; Pittsburgh; Erie; Cleveland-Akron; Toledo; Detroit-Ann Arbor-Flint; Northern Michigan; Green Bay; Appleton-Oshkosh-Neenah; Traverse City; Grand Rapids-Muskegon-Holland; Milwaukee-Racine; Chicago-Gary-Kenosha; Elkhart-Goshen; Fort Wayne; Indianapolis; Champaign-Urbana; Evansville-Henderson; Louisville; Nashville; Paducah; Memphis; Huntsville; Tupelo; Greenville; Jackson; Birmingham; Montgomery; Mobile; Pensacola; Biloxi-Gulfport-Pascagoula; New Orleans; Baton Rouge; Lafayette; Lake Charles; Beaumont-Port Arthur; Shreveport-Bossier City; Monroe; Little Rock-North Little Rock; Fort Smith; Fayetteville-Springdale-Rogers; Joplin;

Table 2.A.2. **List of regions** *(cont.)*

	LEVEL 1	LEVEL 2
UNITED STATES *(cont.)*	Utah; Vermont; Virginia; Washington; West Virginia; Wisconsin; Wyoming	Springfield; Jonesboro; St. Louis; Springfield; Columbia; Kansas City; Des Moines; Peoria-Pekin; Davenport-Moline-Rock Island; Cedar Rapids; Madison; La Crosse; Rochester; Minneapolis-St. Paul; Wausau; Duluth-Superior; Grand Forks; Minot; Bismarck; Fargo-Moorhead; Aberdeen; Rapid City; Sioux Falls; Sioux City; Omaha; Lincoln; Grand Island; North Platte; Wichita; Topeka; Tulsa; Oklahoma City; Western Oklahoma; Dallas-Fort Worth; Abilene; San Angelo; Austin-San Marcos; Houston-Galveston-Brazoria; Corpus Christi; McAllen-Edinburg-Mission; San Antonio; Odessa-Midland; Hobbs; Lubbock; Amarillo; Santa Fe Pueblo; Denver-Boulder-Greeley; Scottsbluff; Casper; Billings; Great Falls; Missoula; Spokane; Idaho Falls; Twin Falls; Boise City; Reno; Salt Lake City-Ogden; Las Vegas; Flagstaff; Farmington; Albuquerque; El Paso; Phoenix-Mesa; Tucson; Los Angeles-Riverside-Orange County; San Diego; Fresno; San Francisco-Oakland-San Jose; Sacramento-Yolo; Redding; Eugene-Springfield; Portland-Salem; Pendleton; Richland-Kennewick-Pasco; Seattle-Tacoma-Bremerton; Anchorage; Honolulu

Annex 2.B

Data Sources Relating to Regional Populations and Labour Forces

Data on unemployment, labour force and population in Tables 2.1 to 2.7 and Charts 2.1 and 2.2 relate to the characteristics of the regional populations and are, therefore, based on place of residence. The country notes below explain in detail the data sources used.

Australia, Canada, Czech Republic, Hungary, Mexico, New Zealand and Norway

Data are based on each country's respective labour force survey or population census. National submissions.

European Union countries

Data on the labour force characteristics of the regional populations were extracted from the REGIO databank of EUROSTAT.

EUROSTAT estimates regional unemployment rates on the basis of the results of the Community Labour Force Surveys at national level. Unemployment figures are then regionalised either directly on the basis of the results of the Community/national Labour Force Surveys or from information on registered unemployed. In Belgium, Germany, France, Austria, Finland and Sweden, the regional distribution of unemployment is based on the regional structure of registered unemployment in April of the year in question. In Greece, Spain, Ireland, Italy, the Netherlands and Portugal, the base data come from the Community Labour Force Survey alone. In the United Kingdom, the regional distribution of unemployment is based on the regional structure of an adjusted LFS down to NUTS level 3. Data on the labour force, employment and long-term unemployment down to NUTS level 2 are estimated directly from the EU Labour Force survey.

Japan

Unemployment rates by region (Level 1) are based on the labour force survey, whereas unemployment rates by prefecture (Level 2) are based on the Population Census, which is conducted every five years. The source of these latter data was the Territorial Development Databank of the OECD.

Korea

The source was the National Statistics Office, *Annual Report on the Economically Active Population Survey.* The data are based on the Monthly economically active population survey.

United States

Data by State (Level 1) were calculated from the Current Population Survey. Data on unemployment rates by BEA Economic Areas (Level 2) in 1996 were estimated by the BEA. The estimates are based on unemployment information by county as calculated by the Bureau of Labor Statistics.

Annex 2.C

Data Sources for the Analyses of Developments in Regional Employment

Data on employment growth in Table 2.8, as well as for the shift-share and sectoral specialisation analyses in Tables 2.9 and 2.14, relate to the economic characteristics of regions and are based on place-of-work data. They are issued from regional economic accounts or establishment surveys. In the cases of Australia, Canada, Hungary, Korea and Norway, however, data are based on the labour force survey on a place-of-residence basis. Japanese population census data also refer to place of residence. The country notes below explain in detail the data sources used.

The shift-share and sectoral specialisation analyses in Tables 2.9 and 2.14 are based on employment data disaggregated to at least single-digit industry categories. A number of limitations of these data should be noted. The time period covered by the observations varies greatly from country to country. In the seven European countries for which data are available, these time periods are short and/or the most recent observations are several years old. Furthermore, major cross-country differences exist in the industry classifications. These relate not only to the delineation and definition of particular sectors, but also to the degree of disaggregation. In order to improve comparability across countries, a set of industry categories has been formulated to retain some sectoral detail while at the same time establishing greater commonality across countries. Some of the more finely defined agricultural, manufacturing or service sectors have been aggregated. It has not been possible to eliminate completely the need for separate classificatory frameworks for various countries, or to show as much detail for manufacturing as for the service sector.

Australia

The Labour Force Survey reports employment according to the Australia and New Zealand Standard Industry Classification. The 18 industry categories have been amalgamated to form the following nine groups: agriculture, fishing, forestry and mining; manufacturing; construction; wholesale and retail trade; transport, storage, communication, electricity, gas and water supply; finance, insurance, property and business services; accommodation, food, beverage, personal and other market services; government administration and defence; and non-market services.

For the analysis of regional specialisation within the services sector, referred to in Section III.B, the following categories were used: transport, storage, communication and public utilities; wholesale trade; retail trade; accommodation, food and beverage services; finance and insurance services; property and business services; government, administration and defence; education services; health and community services; culture and recreation services; and personal and other services.

Canada

Data are derived from the Labour Force Survey and present industry of employment according to the Canadian Standard Industry Classification System, which consists of 18 categories.

Some agricultural and service activities have been regrouped and the resulting classification retained for analysis is the following: agriculture, fishing, forestry and mining; manufacturing; construction; wholesale and retail trade; transport, storage, communication and other public utilities; finance, insurance, real estate and business services; other market services; government; and non-market services.

The analysis of regional specialisation within the services sector, referred to in Section III.B, is based on the following categories: transport, storage, communication and public utilities; wholesale trade; retail trade; accommodation, food and beverage services; finance and insurance services; real estate operator and insurance agent services; business services; government services; education services; health and social services; and other services.

Data for Economic Regions in British Columbia are not available until 1995, so these regions are omitted from the Level 2 analysis.

European Union countries

For Belgium, France, Italy, the Netherlands, Portugal and Spain, employment data were extracted from the REGIO databank of EUROSTAT. They are derived from national accounts and report regional employment according to place of work. Sectoral employment levels are available with a 17-category classification. For the reasons noted above, the eight manufacturing categories have been amalgamated into a single group.

The final classification retained for analysis is the following: agriculture, forestry and fishery products; fuel and power products; manufacturing; building and construction; recovery, repair, trade, lodging and catering services; transport and communication services; services of credits and insurance; market services; and non-market services.

For the analysis of regional specialisation within the manufacturing sector, referred to in Section III.B, the following cat-

egories were used: ferrous and non ferrous ores and metal; non-metallic products; chemical products, metal products, machinery, equipment and electrical goods; transport equipment; food, beverages and tobacco; textiles; paper and printing; and products of various industries.

In addition to the omitted regions identified in Annex 2.A, the French Level 2 region of Corsica is not included in the analysis due to the absence of data for 1970, the beginning of the observation period for this country.

Hungary

Data are from the Labour Force Survey. The following industry classification is used: agriculture, hunting, forestry, fishing, mining and quarrying; electricity, gas and water; manufacturing; construction; trade, hotels and restaurants; transport, storage and communication; financing, insurance, real estate and business services; community, social and personal services; and other.

Japan

Data are derived from the Population Census and are based on place of residence. The 13 major groups of the Standard Industrial Classification for Japan were combined to form the following nine groups: agriculture, fishing, forestry and mining; manufacturing; construction; wholesale and retail trade, and eating and drinking places; transport and communication; electricity, gas, heat and water supply; finance, insurance and real estate; service; market services; and government not elsewhere classified.

Korea

Employment data are on a place-of-residence basis from the Monthly economically active population survey.

New Zealand

Employment data are on a place-of-work basis from the Quarterly Employment Survey, using 15 categories derived from the Australia and New Zealand Standard Industry Classification. Analysis is based on the following groups: agriculture, fishing, forestry and mining; manufacturing; construction; wholesale and retail trade; transport, storage, communication, electricity, gas and water supply; finance, insurance, property and business services; accommodation, food, beverage, personal and other market services; government administration and defence; and non-market services.

For the analysis of regional specialisation within the services sector, referred to in Section III.B, the following categories were used: transport, storage, communication and public utilities; wholesale trade; retail trade; accommodation, food and beverage services; finance and insurance services; property and business services; government, administration and defence; education services; health and community services; culture and recreation services; and personal and other services.

Norway

Data are based on the labour force survey.

United States

Employment data from the Bureau of Economic Analysis (BEA) have been classified according to the following groups of industries: agriculture, agricultural services, forestry, fishing, and mining; construction; manufacturing; wholesale trade; retail trade; transportation and public utilities; finance, insurance, and real estate; other services; and government and government enterprises.

In the case of Level 2 regions, data on employment in agriculture are often missing. Therefore, the level of employment for this industry was calculated as the difference between total regional employment and the sum of employment in all other sectors.

Annex 2.D

Sources and Definitions of Regional Earnings Data

Australia

Data in Table 2.10 refer to average total weekly earnings, as derived from the Average Weekly Earnings survey of employers. The survey includes all wage and salary earners who received pay in the survey reference period, with the major exceptions of agricultural employees and members of the armed services.

Canada

Data for Table 2.10 represent average weekly earnings (including overtime) for employees. They are derived from the Survey of Employment, Payrolls and Hours (SEPH), which is a monthly sample survey of firms, institutions and organisations of all sizes for all provinces and territories and covers 18 industries, with the exception of agriculture, fishing, trapping, private households, religious organisations and the military.

Data for Table 2.11 represent average weekly wages for all employees, from the Labour Force Survey of Statistics Canada.

Czech Republic

Data for Table 2.10 represent average monthly wages of employees, based on the National Accounts.

European Union countries

Data for Tables 2.10 and 2.11 for Austria, Belgium, France, Greece, Italy, Spain and the United Kingdom represent average hourly earnings and come from the Statistics on the Structure of Earnings (SSE) of EUROSTAT. The data are based on establishment surveys and relate to the year 1995 (except for France and Austria for which it is 1994). Nine sectors are covered. Persons who are self-employed or who work in local units employing less than 10 people are not covered. Also not covered are employees in agriculture and fishing, public administration and defence, education, health and social work, other community, social and personal service activities, private households or extra-territorial organisations (together with certain other exceptions on a national basis).

Data for Table 2.10 for Germany represent average hourly earnings for workers in industry and were taken from the *Statistisches Jahrbuch*, various issues.

Data for Tables 2.10 and 2.11 for Portugal represent average hourly earnings in October 1997 and come from the "Quadros de Pessoal" of the Labour Ministry. This is an administrative source that covers all entities with 1 or more employees except those in agriculture, forestry and fishing, as well as the public administration and private domestic services.

Japan

Data for Table 2.10 refer to average monthly cash earnings in establishments with five employees and over. Cash earnings are defined as money earned before deductions for income tax, for social insurance contributions, for union dues, etc. The data were taken from the 1995 and 1997 issues of the *Yearbook of Labour Statistics*.

Data for Table 2.11 refer to average monthly contractual cash earnings (including overtime earnings) in 1995. Contractual cash earnings are earnings paid according to methods and conditions previously determined by labour contracts, collective agreements or wage regulations. They were extracted from the 1995 *Basic Survey on Wage Structure*. This survey collects information on the wage structure for regular employees in 6 major industries, excluding agriculture and public administration. It is establishment-based, and covers establishments with at least five employees. The statistics do not cover employees in agriculture and fishing.

New Zealand

Table 2.10 refers to data on average total hourly earnings. These data are derived from the Quarterly Employment Survey which covers employers of more than 2.5 equivalent full time workers, except in the case of the agriculture and fishing industries which are excluded from the survey.

United States

Data for Table 2.10 are BEA estimates. They refer to average annual wage and salary disbursements, as measured before deductions and on a place-of-work basis. All economic sectors are covered, including public administration and agriculture. BEA estimates are based on BLS data on employment and wages for workers covered by state Unemployment Insurance (UI) and Unemployment Compensation for Federal Employees (UCFE). In order to provide complete coverage for all wages and salaries earned, UI and UCFE data are adjusted for workers not covered by UI and UCFE programs and for under-reporting or mis-reporting under these programs.

Data for Table 2.11 refer to average hourly wages and salaries in 10 sectors and were extracted from the Current Population Survey. They are on a place-of-residence basis.

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Chapter 3

EMPLOYMENT IN THE SERVICE ECONOMY: A REASSESSMENT

Summary

The long-term rise in the share of the workforce directly engaged in the production of services has attracted much attention, but no consensus has emerged concerning the implications for job availability, job quality or labour market policy. The recent dynamic performance of certain business services – which are innovators in the application of computer technologies and large employers of skilled workers – calls into question past assessments of the predominant character of service employment, including concerns that a worsening of employment opportunities will result. Accordingly, this chapter revisits the topic of jobs in the service economy, tracing the evolution of the sectoral composition of employment through the late 1990s and assessing some of its implications. A sequel chapter is planned for publication in the 2001 issue of the *Employment Outlook* that will analyse the *quality* of service jobs in greater detail, as well as the possible trade-off between the quality and quantity of service employment.

Service employment has continued to grow in OECD countries, approaching three-quarters of all jobs in several countries by the end of the 1990s. Among the four main service subsectors, employment growth was more rapid in producer and social services than in distributive and personal services. The overall service-sector share of employment has become more similar across countries. However, significant differences remain and convergence in the mix of service employment at the level of sixteen disaggregated service activities is weaker. National differences in the composition of service employment appear to persist, even at similar levels of income, and to reflect factors such as differences in female participation, the size of the welfare state, regulatory policy and trade specialisation. Multivariate regression analysis confirms that the overall share of service employment, as well as the distribution of employment across disaggregated service activities, respond to a wide array of economic and demographic factors, in addition to the overall level of economic development.

Workforce characteristics differ between the service and goods-producing sectors, as well as between service subsectors. For example, women occupy a large and disproportionate share of service employment (especially in social and personal services), and educational levels are significantly higher in the service than in the goods sector (especially in producer and social services). However, workforce characteristics in the four main service subsectors differ considerably among OECD countries, as does the mix of service jobs. The relationship between the share of service employment and the overall level of employment also resists easy generalisations. International differences in the proportion of the working-age population that is employed are disproportionately due to employment differences in certain services, but the identity of the "critical" sectors varies depending on which countries are being compared. Despite services having accounted for virtually all recent net gains in employment, it does not appear that the countries most specialised in the fastest growing services have benefited from a large boost to overall employment growth.

Introduction

A third of a century has passed since the publication in 1968 of Fuchs' path-breaking study of the emerging "service economy" and its implications for economic life. The long-term decline in the share of the workforce directly engaged in the production of goods is now widely grasped, but no consensus has emerged concerning the implications of the service economy for job availability, job quality or labour market policy. Recurrent concerns have been voiced that a worsening of employment opportunities will result. However, the recent dynamic performance of certain business services – which are innovators in the application of computer technologies and large

employers of skilled workers – calls into question past assessments of the predominant character of service employment. Accordingly, this chapter revisits the topic of jobs in the service economy, tracing the evolution of the sectoral composition of employment through the late 1990s and assessing some of its implications.

Section I discusses the knotty issue of how to measure service employment. Attention then turns to documenting recent trends in the growth of the service sector share in employment (Section II). Differences among OECD countries receive particular attention, including an assessment of whether employment shares are becoming more similar. Differences in workforce characteristics between the service- and goods-producing sectors – as well as among service activities – are analysed in Section III. Sections IV and V build upon this descriptive material by analysing two related issues: *i)* the causes of international differences in the service-sector share of total employment; and *ii)* whether international differences in the expansion of service employment are an important contributor to differences in overall employment rates. The concluding section assesses lessons for policy and research.

Main findings

The chapter's main findings are:

- Service employment has continued to grow in OECD countries over the second half of the 1980s and the 1990s, approaching three-quarters of all jobs in several countries. The service-sector share of employment also became more similar among OECD countries. There appears to be a close link between convergence in income and in the broad sectoral mix of employment, since per capita income is strongly and positively correlated with service employment shares.
- Among the four service subsectors, employment growth was most rapid for producer and social services over the past fifteen years. The employment share for personal services also tended to increase a little, while that for distributive services remained approximately unchanged. The evidence for convergence across OECD countries in the *mix* of the sixteen activities that make up total service employment is weaker than for convergence in the overall service share. National differences in the mix appear to be persistent, even at similar levels of income, and to reflect factors such as differences in female participation, the size of the welfare state, regulatory policy and trade specialisation patterns.
- Despite considerable international differences in the composition of service employment, some qualitative patterns emerge. Among the four major service subsectors, distributive and social services represent the largest shares of total employment in all countries (although producer services has nearly achieved parity with distributive services in the United States). Within distributive services, the largest share of jobs is in retail trade, while health activities are the largest component of social services in most countries. Business and professional services account for the largest share of jobs in producer services, while hotels and restaurants are the largest component of personal services.
- Workforce characteristics differ between the service- and goods-producing sectors and also between service subsectors. Women occupy a large and disproportionate share of employment in social and personal services. Educational levels are considerably higher in the service than in the goods sector, but there is also great variation among the subsectors within each of these two broad sectors. Among service subsectors, educational attainment is highest in producer and social services and lowest in personal services.
- Multivariate regressions using panel-data methods identify a number of explanatory factors that appear to affect the share of total employment in the service sector and its four subsectors. GDP per capita has a positive impact on the overall service share, an effect that is particularly strong for producer and social services. Higher female participation and a larger welfare state are associated with higher employment shares for social and producer services, while stricter employment protection legislation (EPL) is associated with lower employment shares for these same subsectors. Earnings compression and the tax wedge on labour income have opposing effects from one subsector to another, suggesting that these variables capture both labour costs effects, which depress the share of employment for some services (*e.g.* hotels and restaurants), and positive demand effects for other subsectors.
- Producer and social services account for a disproportionate share of OECD-wide differences in the fraction of the working-age population that is employed, but producer services and hotels and restaurants (within personal services) "account" for the EU employment gap relative to the United States. Despite services accounting for virtually all recent net employment growth, the sectoral mix of employment does not appear to have been a major factor determining overall employment growth during 1986-1998. Rather, coun-

tries with rapid employment growth tended to have above-average growth rates across *all* sectors.

I. Measuring service-sector employment

A. Total service-sector employment

This chapter follows the common practice of classifying workers according to the industrial *sector* of their employer (or business, should they be self-employed). Service sector workers are defined to be individuals working for pay in a local establishment whose major activity is classified as service production under revision 3 of the International Standard Industrial Classification (ISIC) of all Economic Activity [United Nations (1990)].[1] This definition facilitates comparative analysis since most OECD Member governments collect employment data according to the ISIC or a similar classification scheme.

A sectoral definition of service employment has two potentially important limitations for use in analysing the labour market implications of the continuing evolution of the service economy:

- Defining service sector employment with reference to the employer's main product is somewhat arbitrary because the economic distinction between a good and a service is sometimes unclear. Three characteristics are most frequently cited as differentiating a service from a good: a service has an intangible nature; is difficult to store; and requires direct (often, face-to-face) interaction between the producer and the consumer [Inman (1985)]. By these criteria, a doctor's examination is a service, while an alarm clock is a good. However, other cases are less straightforward (*e.g.* the Windows operating system) and recent changes in technology and business organisation appear to be further blurring this distinction [Economic Council of Canada (1991); Miles and Boden (1998)]. For example, manufacturing firms increasingly emphasise "just-in-time" production of products that are customised to individual customers' requirements, as well as post-sales support (*e.g.* producers of personal computers). Similarly, some service firms have adopted production practices intended to exploit scale economies in the production of standardised products (*e.g.* fast-food restaurant chains) and many information-intensive services are easily stored and transported to distant customers (*e.g.* computer software). Hence, there is an element of convention in the ISIC (and any other) classification of activities as either goods or service production.
- A significant share of service-type work occurs *within* firms whose main product is clearly a good. For example, accounting and legal work performed for an airplane manufacturer will be classified either as service- or goods-producing employment depending on whether the activity is performed in-house or purchased from a specialised service firm.[2] The extent to which goods-producing firms outsource these types of services appears to have increased over time and to vary across countries [Díaz Fuentes (1999); Dighe *et al.* (1995); OECD (1999*a*)]. This means that comparisons of the scope of service sector employment may overstate differences in the types of work actually performed.[3]

Two strategies are adopted in this chapter for mitigating these limitations. First, the sectoral analysis of employment is complemented by some analysis of the occupational mix of employment. This provides an estimate of the extent to which changes in the sectoral composition of employment reflect changes in the mix of work activities. This analysis also provides a rough check on differences in the extent to which service activities in support of goods production are "contracted out" to specialised service firms. Second, the analysis of employment shares in the goods and service sectors is complemented by more disaggregated analysis of industrial groupings *within* these two sectors. Since these narrower industrial groupings are more homogeneous, they escape some of the difficulty in differentiating between goods and services in the aggregate.

B. The components of service-sector employment

Analysis of the labour market implications of the service economy is greatly complicated by the heterogeneity of service sector employment. In effect, the ISIC defines the service sector residually, as everything except agriculture and industry. This residual category has grown to encompass nearly three-quarters of total employment in some OECD countries, raising the possibility that it is simply too heterogeneous to have much explanatory power as a determinant of employment conditions. Despite the great diversity of the service sector, past research suggests that there are enough similarities for the distinction between the goods and service sectors to be meaningful for labour market analysis, especially when complemented by an analysis of the mix of employment across different service activities within total services.

Dividing the service sector into a moderate number of subsectors involves difficult trade-offs since detailed service industries can be grouped according to many different criteria. The empirical analysis in Sections II to V uses a classificatory scheme developed by Elfring (1988)

to disaggregate total service sector employment into its major components.[4] This scheme regroups detailed service activities from the ISIC in a manner that follows conventional statistical practice in most instances, while being better suited to the chapter's analytical purposes. Aside from its conceptual appeal, using Elfring's classification provides maximum opportunity for comparing results with those reported by other studies, since his scheme (or close variations of it) has been adopted by a number of subsequent researchers [*e.g.* Castells (1996); Esping-Andersen (1999); Storrie (2000)].

Elfring's groupings of service activities reflect three characteristics: the economic function performed by the service; whether business or households are the primary users; and whether market or non-market provision predominates. Total service sector employment is divided into four major *subsectors*: producer services; distributive services; personal services; and social services. Producer and distributive services primarily support production and marketing activities of goods-producing firms, whereas personal and social services tend to be directly consumed by households. Government financing and production predominate for social services in most OECD countries, although market provision of education and health care is important in some countries. Each of the four subsectors is further divided into four service *activities*, yielding a total of sixteen (Table 3.1). Prior research suggests that the distribution of service employment across these disaggregated activities has important implications for employment conditions, but little is known concerning international differences in this relationship.[5]

II. Trends in the share of service employment, 1984-98

A. Total service-sector share

The historical reference point for the analysis in this section is provided by Elfring's (1988, 1989 and 1992) study of the share of the service-sector in total employment from 1960 to 1987 in France, Germany, Japan, the Netherlands, Sweden, the United Kingdom and the United States (Table 3.1). He found that the share of services in total employment – averaged over these countries – increased from 46 to 65 per cent. Producer services, the smallest subsector in the 1960s, more than doubled its share. By contrast, distributive services, the largest subsector in the early 1960s, remained stable (except in Japan, where its share grew strongly). For personal services, the pattern varied significantly across countries, but the overall trend was from stability to modest growth after the mid-1970s. Finally, social services were the most expansive, becoming the largest subsector in the 1970s. This section analyses whether Elfring's results generalise to a wider selection of OECD countries and the past fifteen years.

Chart 3.1 compares the broad sectoral evolution of employment over the past 15 years, by presenting the share of employment in a given sector in total employment in 1984, 1989, 1994 and 1998. The broad upward trend in the service employment share has continued, with the service sector now employing twice as many workers as industry and agriculture combined for the OECD area as a whole.[6] Small declines in the service share were observed in a few countries during 1994-1998, but this probably reflected the greater cyclicality of industrial employment rather than an end to the secular rise in the service share.

In the mid-1980s, the share of service jobs in total employment was far larger in Australia, Canada, Denmark and the United States than in most other OECD countries. However, these differences have narrowed over the past fifteen years. Within Europe, the share of service jobs has increased by 8 percentage points and, at the end of the period, countries like Luxembourg, the United Kingdom, Sweden, Belgium, the Netherlands and Denmark have converged with the United States. The increasing trend over the past 15 years was especially accentuated in countries with lower initial shares (*i.e.* Greece, Spain, France and Portugal). This suggests that differences may continue to narrow in the future.

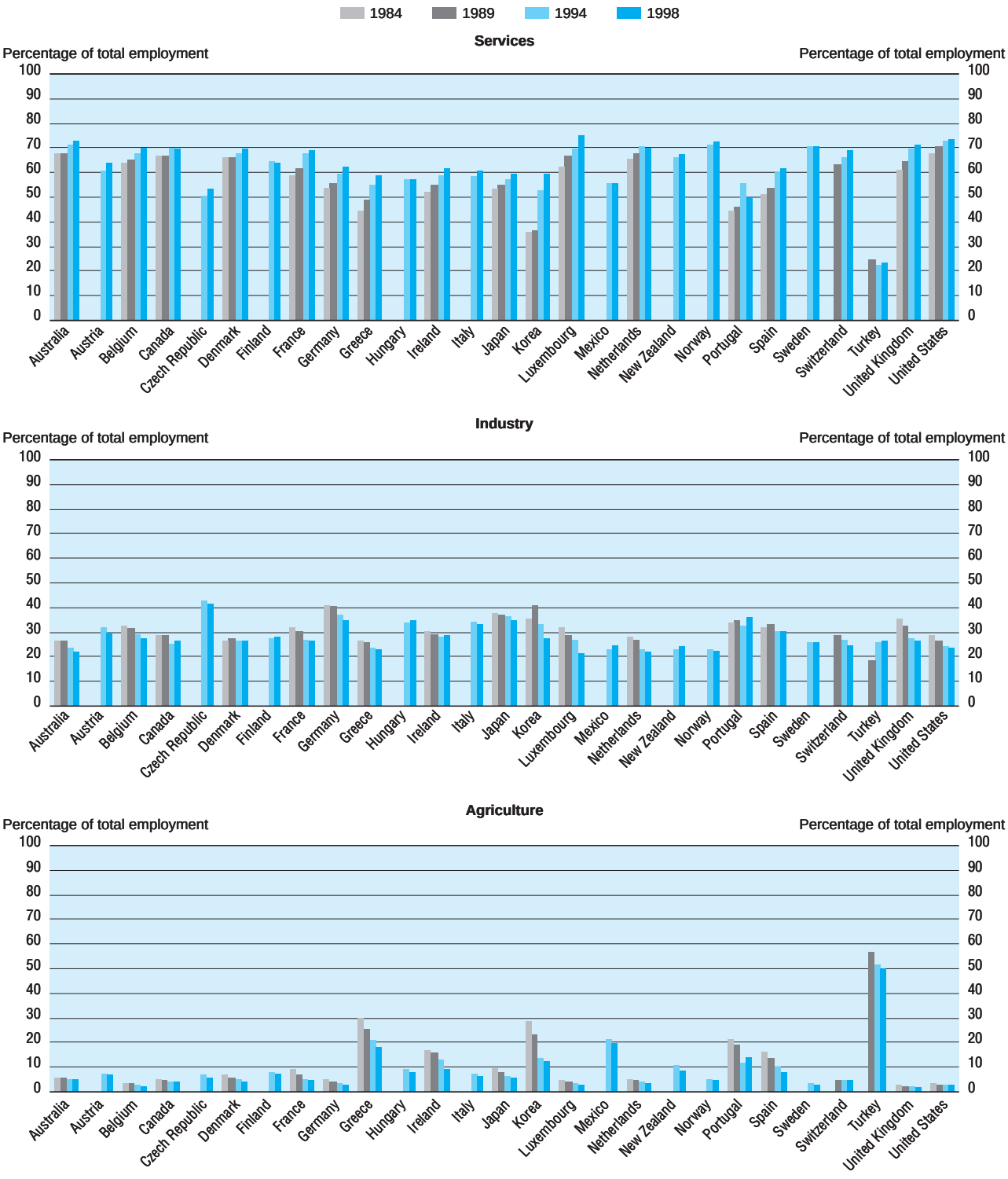
Data on the occupational mix of employment confirm that the secular increase in the service-sector share of total employment represents a real reduction in the number of jobs involving the direct production of goods relative to the number of jobs involving service-type activities. As shown in Table 3.2, the share of "blue-collar" occupations (used here as a proxy for jobs involving the direct production of goods) is strongly negatively correlated with the service-sector share of employment. This suggests that differences in the service share cannot be attributed primarily to differences in the extent to which goods-producing firms outsource service-type work (proxied here by "white-collar" occupations) to firms in the service sector. Rather, a higher service-sector share is associated with an economy-wide increase in the white-collar share of employment, with this share increasing even *within* the goods sector. If higher service-sector shares primarily reflected greater outsourcing of service-type work by goods-producing firms, the overall white-collar share would be unaffected while the white-collar share in the goods sector would be expected to be lower where the service-sector share is higher.

Table 3.1. **Taxonomy of service subsectors and activities: definitions and main characteristics**

	Producer services	Distributive services	Personal services	Social services
Definition	*Producer services* are intermediate inputs to further production activities that are sold to other firms, although households are also important consumers in some cases. They typically have a high information content and often reflect a "contracting out" of support services that could be provided in-house.	*Distributive services* move commodities, information and people. Some of these services are final consumption in their own right (*e.g.* vacation travel), but most are ancillary to final consumption (*e.g.* retailing) or production (*e.g.* materials transport).	*Personal services* provide final consumption for households and are characterised by direct contact between the consumer and the service provider. Self-servicing is often a viable alternative to market purchases and market provision predominates.	*Social (and collective) services* provide final consumption for households and are distinctive for their non-market character in most OECD countries. Collective consumption decisions and public financing are common, as is production by governments, non-profit organisations and subsidised private organisations.
Sub-groups: (16 service activities)	• Business and professional services. • Financial services. • Insurance services. • Real estate services.	• Retail trade. • Wholesale trade. • Transport services. • Communications.	• Hotels, bars, and restaurants. • Recreation, amusements and cultural services. • Domestic services. • Other personal services.	• Government proper (civil or military). • Health services. • Educational services. • Miscellaneous social services.
Evolution of employment during 1960-1987 in seven countries[a]	The smallest subsector in the early 1960s but grew at about twice the rate for total services. Growth in business and professional services was especially strong in the United States. **1987 share:** 7-14% of total employment.	The largest subsector in the early 1960s, but share remained stable in most countries. Japan had strong growth, surpassing United States as having highest share. **1987 share:** 18-25% of total employment.	Pattern varies across countries, but tendency for approximate stability in the first half of the period to be replaced by expansion, especially in hotel and restaurant services. **1987 share:** 6-13% of total employment.	Strong, albeit gradually decelerating growth resulted in social services overtaking distributive as the largest subsector (except in Japan). **1987 share:** 13-35% of total employment.
Potential implications for labour markets	At the forefront of knowledge economy, making extensive use of ICT and high-skilled workers. International trade in "strategic" business services is increasing and countries developing a comparative advantage will be able to expand high-wage employment.	Communications and transportation are characterised by large, capital intensive employers who offer relatively good employment conditions. By contrast, retail is a large generator of low-paid and unstable jobs, especially for women. Regulatory policy may have major impact on employment share.	A prime generator of "bad" jobs, but also a crucial source of employment opportunities for low-skilled workers and women. Substitutability between market purchases and self-service by households mean that labour demand is very sensitive to labour costs.	Many jobs require university degrees (education and health services), but others externalise low-skilled, dependent care from the household. Major employer of women, both high and low skilled. Employment share strongly influenced by scale of the welfare state.

a) France, Germany, Japan, the Netherlands, Sweden, the United Kingdom and the United States [Elfring (1992)].
Source: Elfring (1988, 1989 and 1992).

Chart 3.1. Evolution of employment shares of the three main sectors[a]



a) Where data are not available for the selected years, the closest year was chosen instead. This affects the following cases: 1985: Korea and the Netherlands; 1986: Portugal and Spain; 1987: Australia and Canada; 1988: Turkey; 1991: Switzerland; 1992: New Zealand and Turkey; 1995: Austria, Finland and Sweden; 1996: Mexico and Norway.

Source: See Annex 3.A.

Table 3.2. The service-sector employment share and the occupational mix of employment [a] in 1998

Shares of employment (percentages)

	Total economy				Goods-producing sector			Service sector		
	Service sector	White-collar	Blue-collar	Elementary occupations	White-collar	Blue-collar	Elementary occupations	White-collar	Blue-collar	Elementary occupations
Australia	69.0	56.6	36.1	7.3	32.9	58.5	8.6	67.9	25.4	6.7
Austria	63.9	59.3	31.8	8.9	24.5	70.3	5.2	79.0	9.9	11.0
Belgium	71.9	67.2	23.8	8.7	34.9	56.8	8.2	81.2	9.8	8.9
Canada	73.8	66.0	23.1	10.9	32.9	55.7	11.5	77.6	11.8	10.7
Czech Republic	52.3	55.2	36.2	8.6	29.1	61.4	9.5	78.2	13.9	7.9
Denmark	70.8	65.2	21.9	12.7	29.5	55.7	14.8	80.9	7.2	11.9
Finland	64.0	63.1	28.5	7.7	30.5	62.8	6.3	81.1	9.6	8.5
France	70.7	61.7	28.9	7.8	29.2	67.0	3.5	76.2	11.9	9.7
Germany	62.1	63.0	28.0	7.5	34.7	56.2	7.6	79.9	11.1	7.5
Greece	56.4	52.6	41.5	6.0	12.5	83.9	3.6	80.7	11.7	7.6
Hungary	58.5	53.6	37.9	8.5	23.5	69.0	7.5	75.8	15.0	9.2
Ireland	61.5	60.6	30.2	8.9	24.0	62.2	13.7	84.6	9.5	5.8
Italy	64.1	55.5	32.3	12.2	25.0	64.3	10.7	75.2	11.6	13.2
Korea	60.0	54.5	35.0	10.5	20.4	70.5	9.1	63.0	26.1	10.9
Luxembourg	72.7	64.4	24.8	10.5	25.4	69.0	5.7	77.4	10.6	12.1
Netherlands	71.6	70.6	19.0	7.1	42.6	48.1	7.8	83.9	9.2	6.9
New Zealand	67.3	65.5	26.8	7.6	26.5	65.0	8.6	84.4	8.5	7.1
Portugal	55.3	42.9	44.2	12.9	14.7	76.4	9.0	70.9	12.3	16.8
Spain	63.2	52.0	33.2	14.3	18.6	67.1	14.3	72.8	12.1	14.3
Sweden	72.9	68.9	25.6	5.3	33.3	63.4	3.2	83.5	10.2	6.1
Switzerland	63.2	69.0	24.5	6.0	38.1	56.3	5.3	81.9	11.2	6.2
Turkey [b]	23.5	29.6	69.9	..	6.0	93.7	..	73.5	25.7	..
United Kingdom	71.0	69.9	21.3	8.1	39.2	52.3	8.6	82.4	9.1	7.9
United States	73.8	63.3	22.8	13.9	34.3	56.2	9.5	73.6	11.0	15.4
OECD average	**63.5**	**59.6**	**31.1**	**9.2**	**27.6**	**64.2**	**8.3**	**77.7**	**12.7**	**9.7**
Cross-country correlation with service-sector share [c]		**0.74*** **	**–0.81*** **	**0.03**	**0.62*** **	**–0.57*** **	**–0.02**	**0.22**	**–0.25**	**–0.01**

.. Data not available.

*, ** and *** mean statistically significant at the 10%, 5% and 1% levels respectively.

a) Three broad occupational groupings were defined in terms of the nine 1-digit occupations of the ISCO-88: white-collar occupations correspond to occupations 1-5 (*i.e.* legislators, senior officials and managers; professionals; technicians and associate professionals; clerks; and service workers and shop and market sales workers); blue-collar occupations correspond to occupations 6-8 (*i.e.* skilled agricultural and fishery workers; craft and related trades workers; and plant and machine operators and assemblers); and elementary occupations correspond to occupation 9. For national data sources not using the ISCO-88, the most detailed occupational groupings available were used to approximate these three groupings.

b) Elementary occupations divided among the white-collar and blue-collar groupings.

c) Turkey is excluded from the calculation.

Source: See Annex 3.A.

B. Shares of the four service subsectors and the sixteen service activities

As in previous decades, this evolution has not been homogeneous across service subsectors. Chart 3.2 shows the evolution from 1984 to 1998 of the share of total employment for each of the four main subsectors (see Table 3.C.1 in Annex 3.C for the exact figures). Producer services have been the most dynamic, exhibiting a sharp increase in employment share in most OECD countries in the late 1990s. Employment shares of social and personal services also rose in the majority of countries, but the distributive services share was generally stagnant (and fell sharply in Korea). Employment in social services grew quite strongly in a number of European countries and the United States over the entire fifteen-year period, but increased efforts to restrain public spending are evident during 1994-1998, when the employment share declined in a number of countries. To sum up, the broad evolutionary pattern described by Elfring for the 1960s-1980s has generally continued.

On average, one-third of service employment is now concentrated in distributive services and another third in social services. The rest is equally distributed between producer and personal services. While there is substantial variation around these averages, trends in several of the subsectors suggest that national employment structures may be becoming more similar. Australia, Canada and the United States had a larger share of producer services than other OECD countries in the mid-1980s, but these differences have diminished over time. A similar pattern occurred for personal services. However, distributive services display a different pattern: over the whole period, Australia, Japan and Korea exhibit a higher share than any other OECD country, while the United States and Canada exhibit similar patterns to those observed in the rest of the OECD area and, in particular, France. Concerning social services, in the Anglo-Saxon and German-speaking countries, there has been a significant increase and its share in total service employment has risen to nearly 25 per cent. The Scandinavian countries, Belgium and France have above-average shares, while the Southern European countries and the new OECD Member countries, have below-average shares.

Chart 3.3 shows how total employment in 1998 in each of the four service subsectors is distributed across the constituent service activities:

- In *producer services*, one-half or more of the jobs are in business and professional services (except in Luxembourg). Canada, the United States and the Netherlands exhibit the highest proportion of jobs in business and professional services. By contrast, financial service jobs represent a smaller proportion of producer services in all countries except Luxembourg, where one-half of the producer services are in finance.
- One-half or more of the jobs in *distributive services* are concentrated in retail trade (except in the Czech Republic, Finland, Norway and Sweden). Among the remaining activities, wholesale trade and transportation typically account for a larger proportion of employment than does communication services.
- About one-half of *personal services* jobs are concentrated in hotels and restaurants (except in Australia, France, Mexico and Switzerland where the share is lower). Jobs in recreation and amusement represent a smaller share (one-fourth on average). Domestic services represent more than 20 per cent of all personal services jobs in Mexico, Portugal, France, Spain, Switzerland and Luxembourg, closely followed by Greece, while for the rest of the countries the share is close to zero.
- The Scandinavian countries, Belgium, France and Luxembourg show the highest share of *social services* jobs. The proportions within social services vary significantly across countries. Concerning government proper, there is Mexico and the United States at one extreme, with a proportion close to 4.5 per cent, and Luxembourg at the other extreme with 15 per cent, followed by France, Belgium and Germany with more than 8 per cent. As for health services, there is Mexico, Portugal, Greece, the Czech Republic and New Zealand with less than 5 per cent and Sweden, Denmark, Finland and the Netherlands with more than 13 per cent. Finally, education is the social service activity where shares are most uniform across countries.

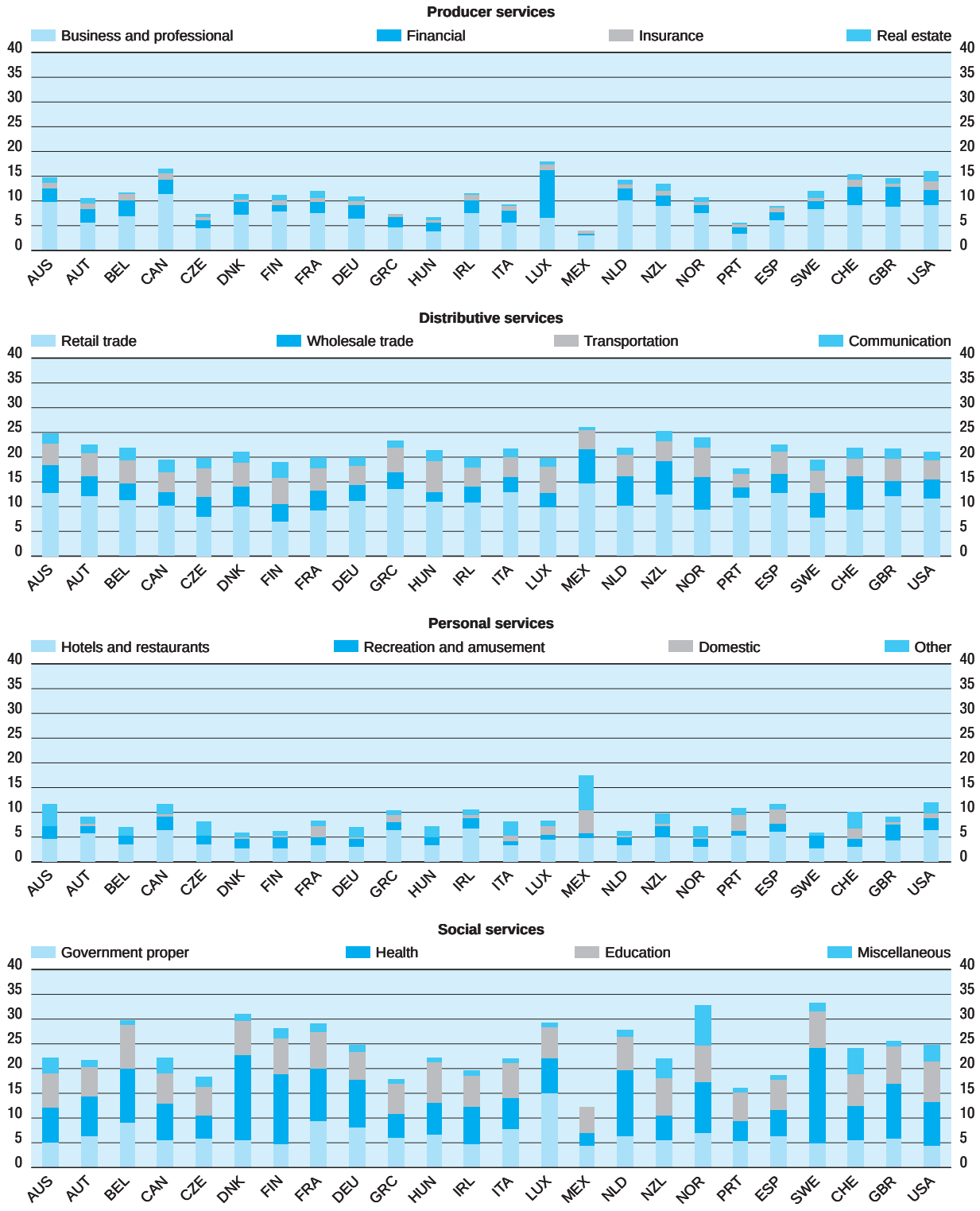
C. Convergence versus divergence

Are OECD countries following a common trajectory, as reflected in the growth and changing composition of service employment? Most discussions of the service economy suggest that changes in technology and the secular rise in living standards will cause the sectoral mix of employment to evolve in a similar manner in all countries [Fuchs (1968)]. However, some considerations suggest that national differences in the size and composition of the service sector could persist, even at the same level of income and technological development [Castells (1996); Esping-Andersen (1999)]. For example, the high social services employment noted above for several northern European countries appears to reflect political orientations supportive of a more expansive welfare state than exists in other countries. The recent increase of international trade

Chart 3.2. Evolution of the employment shares of the four service subsectors, 1984-1998[a]

a) See note *a)* to Chart 3.1.
Source: See Annex 3.A.

Chart 3.3. **Employment shares of the sixteen service activities in 1998**[a]
As a percentage of total employment



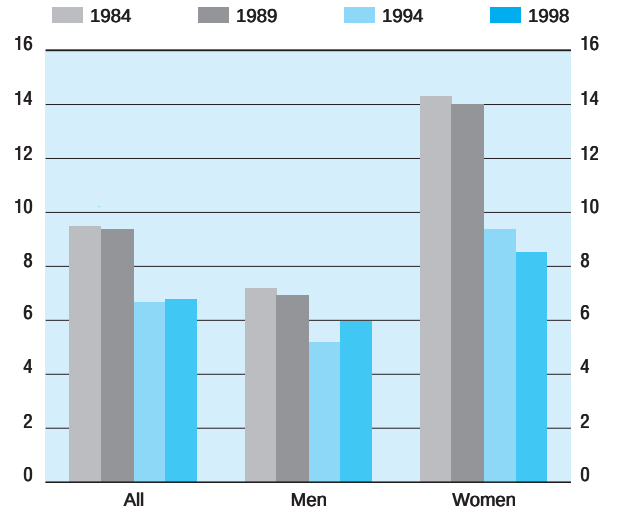
a) See note *a)* to Chart 3.1.
Source: See Annex 3.A.

in services also raises the possibility that employment in services could differ among countries with similar consumption patterns, due to trade specialisation.

The overall share of the service sector in total employment has become more uniform since the mid-1980s: the standard deviation fell from 9.5 to 6.8 percentage points between 1984 and 1998 (Chart 3.4). This (partial) convergence was largely due to the changing mix of employment for women, for whom the cross-country standard deviation fell by forty per cent. This suggests that a close relationship may exist between the development of the service sector and employment patterns for women, a theme that is developed further in Sections III and IV. When standard deviations are calculated for the four service subsectors (not shown here), three out of the four increase slightly, suggesting that convergence is stronger for the overall service share than for its subcomponents. The standard deviation for social services is approximately twice as large as those for producer, distributive and personal services, suggesting that the overall tendency toward convergence may be weakest in the social services sector, which is heavily influenced by the size of the welfare state.

International differences in service employment are examined in greater detail in Table 3.3, which makes use of a dissimilarity index. This index provides a summary measure of the extent to which the sectoral distribution of employment differs between two countries, indicating the (minimum) percentage of the workforce that would have to be shifted to another sector in the first country, in order to achieve the same sectoral distribution as in the second country.[7] As can be verified in Table 3.3, this percentage increases when the index is calculated for a more detailed set of sectors. Thus, the absolute level is less interesting than relative measures for a given index, such as country comparisons or changes over time. Panel A of Table 3.3 reports index values for comparisons between the United States and each of the other countries in the sample.[8] Panel B reports cross-country statistics, such as the mean dissimilarity value and its change over time. Panel B also reports correlation coefficients of the dissimilarity indices with several factors that may influence the level and composition of service employment.

Chart 3.4. **Cross-country standard deviations[a] of the service-sector share of total employment, 1984-1998[b]**



a) Standard deviations calculated for the sixteen countries with data for 1984, 1989, 1994 and 1998 in Chart 3.1.
b) See note *a)* to Chart 3.1.
Source: See Annex 3.A.

The dissimilarity indices confirm that the sectoral distribution of employment became more similar in these countries between the mid-1980s and the late 1990s. This tendency is present both for the entire economy and within the service sector. However, convergence has been stronger for the broad shift of employment from goods to service production, than for the distribution of employment across disaggregated service activities. The indices for individual countries indicate that Australia, Canada and the United Kingdom have employment structures the most like that in the United States, while Mexico and several southern and central European countries differ the most. The relative score for several countries differs considerably depending on whether the structure of employment is measured at a higher or lower level of detail. Luxembourg is a dramatic example, being among the countries most similar to the United States when the employment shares of the total service sector or the four subsectors are considered, but among the most dissimilar when the 16 service activities are differentiated. This pattern reflects Luxembourg's position as a large net exporter of financial and government services.

Correlation coefficients between the dissimilarity indices and four economic measures provide some clues about the causes of these international differences and the dynamics of convergence:

- The dissimilarity index is strongly negatively correlated with per capita GDP. Since the United States is a high-income country, the underlying pattern is that countries with an income level more similar to that in the United States also tend to have a more similar sectoral distribution of employment. However, the allocation of total service employment among the sixteen service activities is a partial exception to this

Table 3.3. **Differences in the sectoral composition of employment**

Dissimilarity indices for comparison with the United States[a]

	Total economy				Service sector			
	3 sectors		21 sectors		4 subsectors		16 activities	
A. 1998 index values by country[b]								
Australia	2.3	(3)	10.1	(4)	3.7	(4)	6.8	(4)
Austria	10.0	(14)	13.5	(8)	6.3	(10)	8.3	(6)
Belgium	4.0	(8)	13.6	(9)	7.5	(14)	11.2	(9)
Canada	3.9	(7)	9.5	(1)	2.6	(2)	6.3	(2)
Czech Republic	20.7	(24)	24.5	(21)	10.4	(21)	14.1	(19)
Denmark	4.1	(10)	15.7	(13)	8.6	(17)	13.1	(17)
Finland	9.4	(13)	18.3	(16)	8.0	(15)	13.0	(16)
France	4.6	(11)	14.6	(10)	6.7	(11)	11.8	(13)
Germany	11.2	(15)	15.6	(12)	5.6	(7)	10.0	(8)
Greece	15.3	(21)	21.4	(18)	9.6	(19)	12.9	(15)
Hungary	16.3	(22)	21.5	(19)	8.3	(16)	13.2	(18)
Ireland	11.8	(16)	12.8	(6)	6.1	(9)	6.7	(3)
Italy	13.0	(18)	18.3	(17)	6.9	(12)	11.7	(12)
Japan	14.4	(20)	..	..	..	..	..	..
Korea	14.1	(19)	..	..	..	..	..	..
Luxembourg	1.8	(1)	21.7	(20)	5.8	(8)	18.6	(22)
Mexico	18.2	(23)	31.3	(23)	15.4	(23)	20.8	(23)
Netherlands	3.1	(5)	12.9	(7)	5.6	(6)	11.6	(10)
New Zealand	6.3	(12)	9.5	(2)	4.2	(5)	5.9	(1)
Norway	2.1	(2)	14.8	(11)	9.6	(18)	12.3	(14)
Portugal	23.7	(25)	27.4	(22)	11.8	(22)	15.3	(21)
Spain	12.1	(17)	18.1	(15)	7.3	(13)	11.7	(11)
Sweden	2.9	(4)	17.5	(14)	10.1	(20)	14.6	(20)
Switzerland	4.0	(9)	11.3	(5)	2.3	(1)	9.0	(7)
Turkey	50.3	(26)	..	..	..	..	..	..
United Kingdom	3.2	(6)	10.1	(3)	2.8	(3)	7.7	(5)
B. Cross-country measures								
1998 average	11.2		17.0		7.2		11.6	
1984-1998 change in average[c]	–3.5		–2.5		–1.0		–0.5	
Correlations of 1998 index with:								
Per capita GDP (PPPs)	–0.74***		–0.55***		–0.57***		–0.25	
Value-added share of services	–0.42**		–0.06		–0.27		0.10	
Employment share of services	–0.96***		–0.68***		–0.51**		–0.30	
Female labour force participation rate	0.19		–0.15		0.07		–0.21	

.. Data not available.
*, ** and *** mean statistically significant at the 10%, 5% and 1% levels respectively.
a) Percentage of workforce that would have to change sectors in order to equalise the sectoral mix of employment to that in the United States.
b) Values in parenthesis are country ranks.
c) Calculated only for countries with data in both years.
Sources: See Annex 3.A.

pattern, since there is only a weak negative correlation between this measure of dissimilarity and income.

- The dissimilarity indices for the value-added and employment shares of the service sector also suggest that the structure of employment in OECD countries is following a trajectory that is broadly similar, but leaves considerable scope for international variation – particularly in the detailed composition of service employment.
- Surprisingly, the correlations between higher female participation rates and the dissimilarity indices are never statistically significant. However, these correlations are negative for indices that differentiate among the disaggregated service activities, suggesting that countries with female participation rates similarly high as those in the United States are also more similar in the composition of service employment across the sixteen service activities, but not in terms of the overall service-sector share of employment.

III. Workforce characteristics

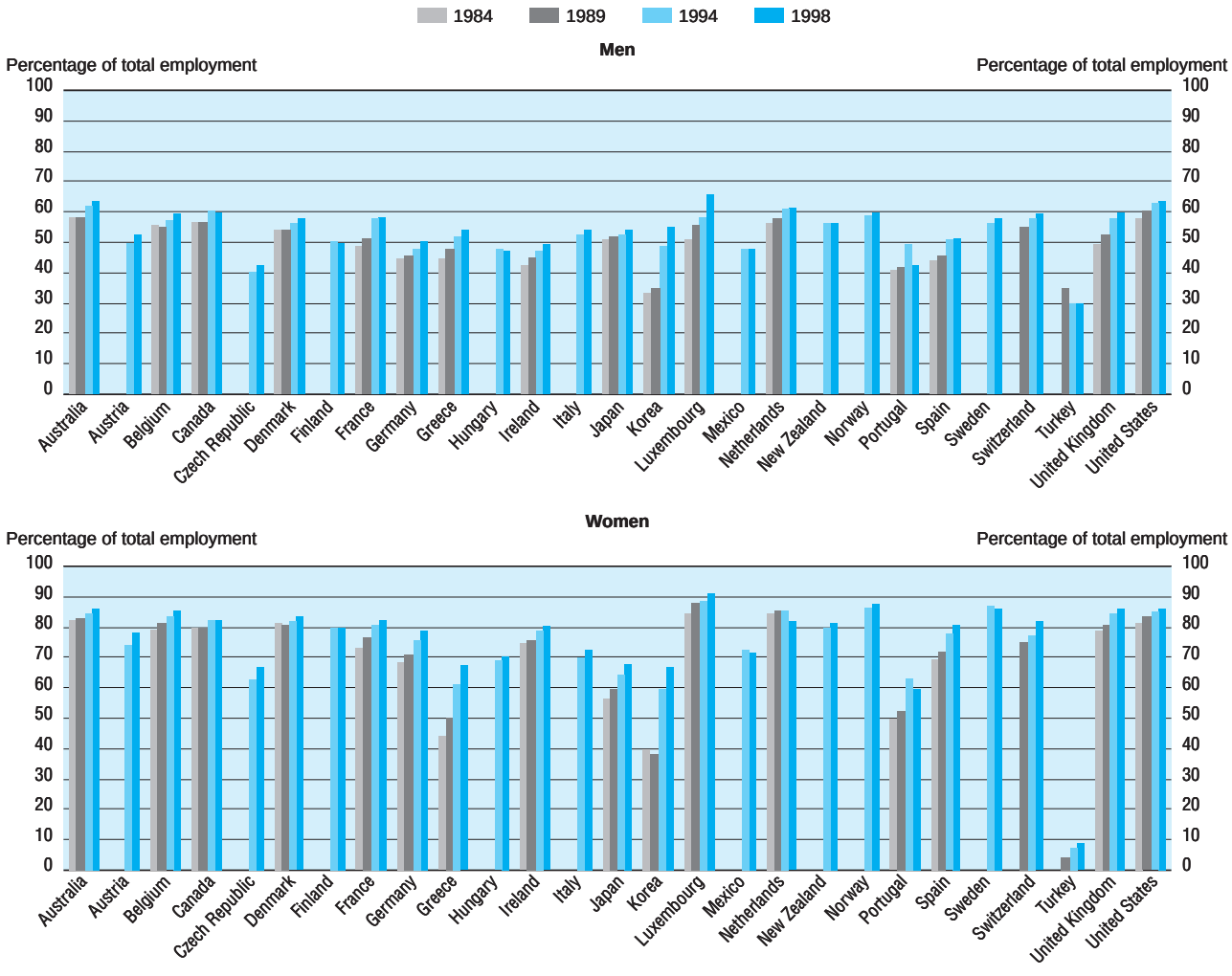
A. Gender

Charts 3.5 and 3.6 give the shares of service employment in total employment by gender. Concerning the overall evolution, Chart 3.5 shows that in the mid-1980s, the share of services in total male employment was 49 per cent on average, while the corresponding female share was 70 per cent. With only a few exceptions, the shares of services in total employment of both genders increased significantly over the past 15 years.

The gender mix of service employment varies sharply between the four service subsectors. The shares for producer and distributive services are similar for women and men, but gender differences are notable in personal and social services. Roughly speaking, the proportion of women in personal services is twice as large as that of men. In social services, the proportion of women is more than double that of men.

Growth in the service employment share for women has been particularly rapid in countries with initially very low levels. This is especially the case in Southern European countries like Greece and Portugal and in Japan and Korea. The pattern for most countries in recent years is that about three-quarters of all working women have jobs in the service sector. Without exception, the largest share of these

Chart 3.5. **Evolution of service employment share by gender**[a]



a) See note *a)* to Chart 3.1.
Source: See Annex 3.A.

Chart 3.6. Evolution of the employment share of the four service subsectors by gender, 1984-1998[a]

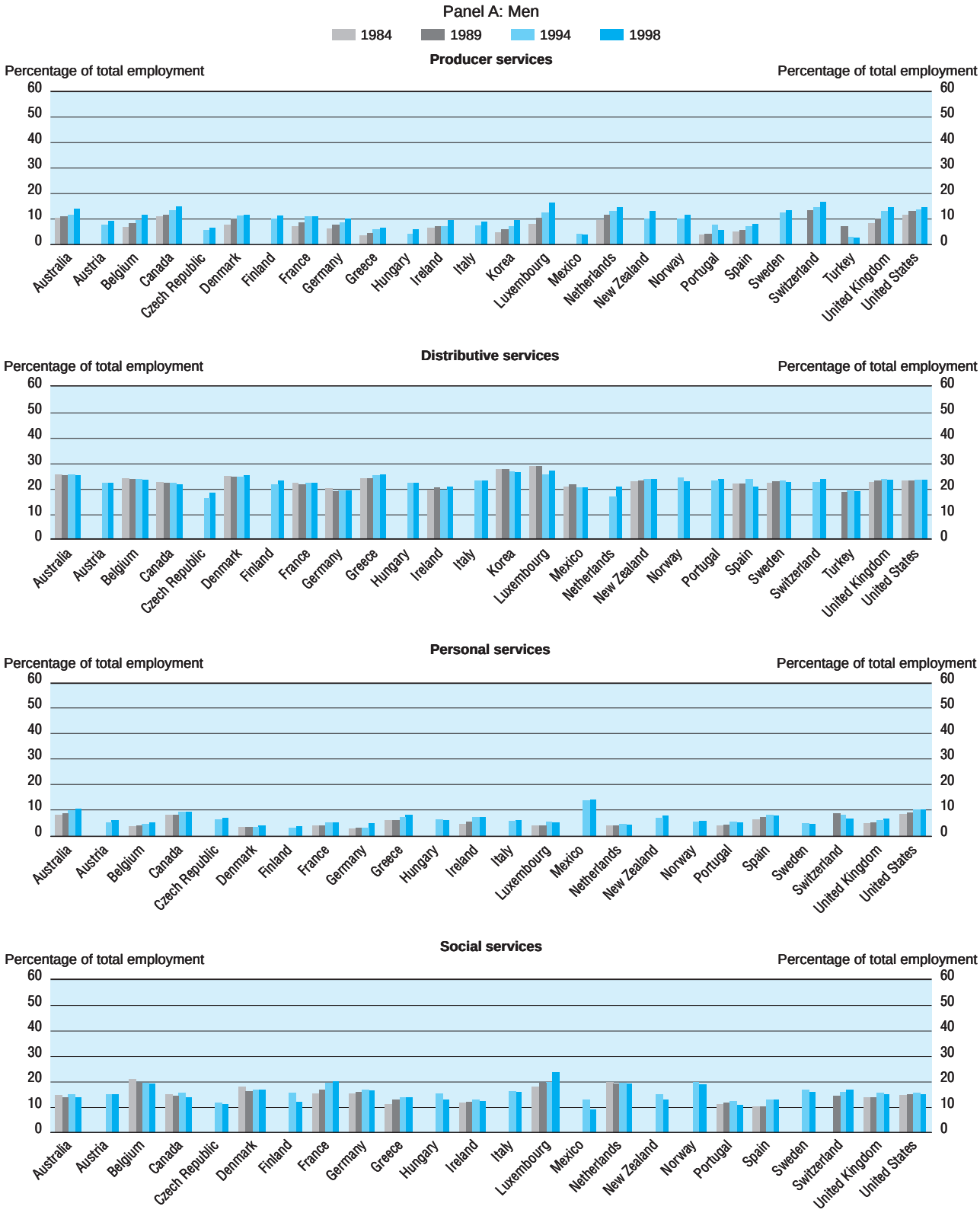
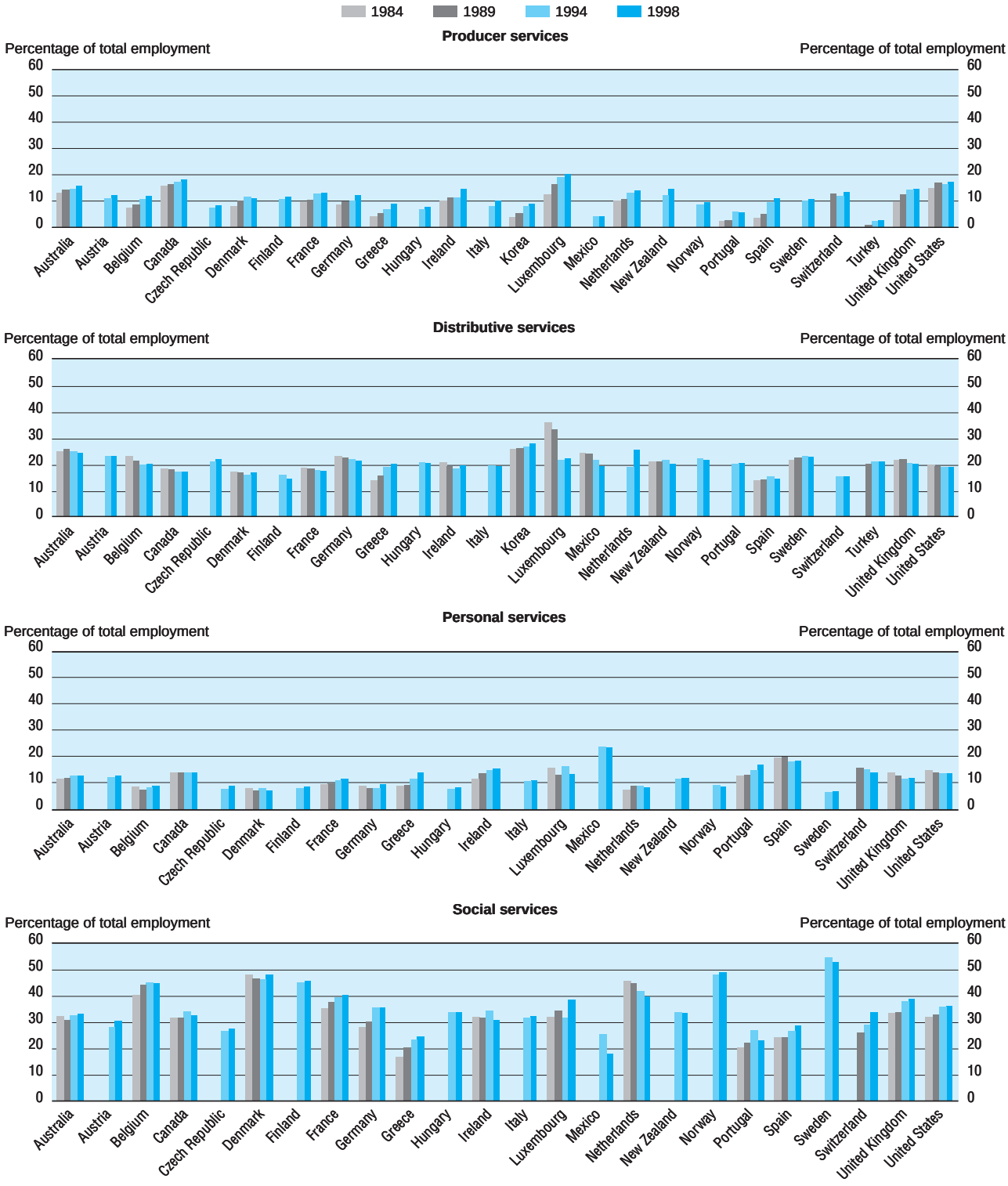


Chart 3.6. **Evolution of the employment share of the four service subsectors by gender, 1984-1998**[a] *(cont.)*

Panel B: Women



a) See note *a)* to Chart 3.1.
Source: See Annex 3.A.

women is concentrated in social services. The growth in female services' employment observed over the past 15 years is due to the increase in social services employment and – to a lesser extent – producer services.

The growth in male service employment has been mainly concentrated in producer and – to a lesser extent – personal services. Their share in distributive and social services remained largely unchanged. Yet, the countries that experienced more accentuated growth in the social services share of employment, also saw a substantial growth in male social service jobs (*i.e.* Luxembourg, France, Spain and Greece).

Table 3.4 gives the ratio of the number of women to men working in a given industry grouping in 1998. The table is divided in two main blocks, one for the goods-producing sector, and the other for the service sector. As the first column for each block shows, service activities disproportionately employ women, while the goods-producing sector disproportionately employs men. Within the service sector, personal and social services are primarily female-dominated activities, while producer and distributive services are male-dominated.

Dissimilarity indices provide further insights into gender differences in the distribution of employment across sectors (Table 3.5). Gender segregation by sector is quite extensive. The average index for employment across twenty-one sectors in 1998 indicates that 18 per cent of women would have to shift sectors in order to equalise their distribution to that for men. This figure was significantly lower in the late 1990s than in the mid-1980s.

B. Education

Table 3.6 shows that workforce qualifications vary significantly across sectors. The top panel shows that the

Table 3.4. **Gender composition in service employment in 1998**

Ratio of women to men, by economic sector

	Goods-producing sector						Service sector				
	Total	Agriculture, hunting and forestry	Mining and quarrying	Manufacturing	Electricity, gas and water supply	Construction	Total	Producer services	Distributive services	Personal services	Social services
Australia	0.29	0.45	0.11	0.35	0.21	0.16	1.04	0.87	0.74	0.91	1.84
Austria	0.35	0.96	0.27	0.36	0.13	0.09	1.18	1.04	0.81	1.62	1.62
Belgium	0.25	0.41	0.16	0.31	0.13	0.08	1.02	0.72	0.62	1.17	1.66
Canada	0.37	0.39	0.20	0.48	0.29	0.12	1.15	1.01	0.67	1.25	1.98
Czech Republic	0.45	0.49	0.17	0.66	0.29	0.09	1.23	1.02	0.95	1.01	1.97
Denmark	0.34	0.28	0.87	0.46	0.26	0.10	1.23	0.81	0.58	1.42	2.44
Finland	0.36	0.45	0.07	0.45	0.41	0.07	1.46	0.92	0.57	2.09	3.48
France	0.34	0.46	0.10	0.42	0.30	0.10	1.14	0.95	0.64	1.73	1.62
Germany	0.33	0.57	0.10	0.39	0.28	0.14	1.20	0.94	0.86	1.48	1.67
Greece	0.42	0.73	0.05	0.42	0.20	0.01	0.74	0.81	0.46	0.99	1.08
Hungary	0.47	0.32	0.20	0.70	0.33	0.09	1.24	1.08	0.77	1.15	2.16
Ireland	0.25	0.13	0.08	0.46	0.20	0.04	1.07	1.01	0.63	1.40	1.65
Italy	0.34	0.48	0.14	0.44	0.13	0.06	0.76	0.62	0.47	1.05	1.15
Japan	0.45	0.84	0.20	0.55	0.13	0.19	0.82	..	0.69	..	..
Korea	0.50	0.91	0.01	0.53	0.17	0.10	0.83	0.64	0.56	..	..
Luxembourg	0.15	0.28	0.11	0.17	0.16	0.09	0.84	0.74	0.57	1.53	0.98
Mexico	0.28	0.17	0.08	0.56	0.18	0.03	0.76	0.56	0.63	0.84	1.00
Netherlands	0.24	0.39	0.17	0.28	0.17	0.09	0.96	0.69	0.61	1.32	1.50
New Zealand	0.35	0.43	1.22	0.42	0.22	0.13	1.18	2.15	0.77	0.91	0.86
Norway	0.26	0.34	0.20	0.34	0.22	0.08	1.26	0.72	0.74	1.27	2.25
Portugal	0.57	1.00	0.12	0.78	0.14	0.04	1.15	0.80	0.56	2.53	1.75
Spain	0.22	0.33	0.10	0.29	0.10	0.04	0.86	0.75	0.56	1.28	1.21
Sweden	0.30	0.30	0.21	0.38	0.22	0.09	1.34	0.72	0.58	1.34	2.98
Switzerland	0.33	0.53	0.09	0.38	0.09	0.14	1.09	0.63	0.88	1.58	1.58
Turkey	0.54	0.86	0.02	0.23	0.08	0.02	0.12	0.42	..	..	..
United Kingdom	0.28	0.31	0.16	0.36	0.30	0.10	1.16	0.81	0.71	1.45	2.07
United States	0.33	0.33	0.15	0.47	0.30	0.10	1.17	0.99	0.70	1.12	2.09
OECD average	**0.35**	**0.49**	**0.20**	**0.43**	**0.21**	**0.09**	**1.04**	**0.86**	**0.67**	**1.35**	**1.77**

.. Data not available.
Source: See Annex 3.A.

Table 3.5. **Differences in the sectoral distribution of employment by gender, qualification level and age**

Dissimilarity indices for 1998 [a]

	Women	Less than upper secondary schooling	Youths
A. 1998 index values by country [b]			
Australia	16.7 (8)	.. ..	.. ..
Austria	17.7 (12)	28.6 (11)	36.3 (11)
Belgium	18.0 (15)	19.2 (4)	41.5 (21)
Canada	14.8 (2)	32.8 (14)	36.0 (10)
Czech Republic	17.3 (10)	40.5 (17)	35.9 (9)
Denmark	18.6 (17)	27.4 (9)	34.1 (4)
Finland	21.1 (24)	25.4 (8)	39.9 (16)
France	16.0 (7)	19.2 (3)	41.9 (22)
Germany	16.7 (9)	.. ..	39.1 (15)
Greece	17.3 (11)	21.8 (7)	40.0 (17)
Hungary	15.6 (5)	.. ..	.. ..
Ireland	19.1 (19)	.. ..	31.2 (2)
Italy	18.1 (16)	19.2 (5)	41.0 (20)
Japan	13.9 (1)	.. ..	.. ..
Korea	15.4 (4)	.. ..	.. ..
Luxembourg	19.4 (20)	.. ..	40.3 (18)
Mexico	22.2 (26)	18.7 (2)	23.5 (1)
Netherlands	17.9 (14)	.. ..	34.6 (5)
New Zealand	18.6 (18)	16.1 (1)	32.9 (3)
Norway	21.1 (23)	35.6 (15)	37.4 (13)
Portugal	15.6 (6)	32.3 (13)	35.7 (7)
Spain	21.0 (22)	20.7 (6)	37.5 (14)
Sweden	20.6 (21)	28.5 (10)	40.7 (19)
Switzerland	30.0 (27)	29.2 (12)	36.4 (12)
Turkey	21.5 (25)	.. ..	.. ..
United Kingdom	17.9 (13)	.. ..	35.8 (8)
United States	15.3 (3)	37.0 (16)	35.1 (6)
B. Cross-country measures			
1998 average	18.4	26.6	36.7
1984-1998 change in average [c]	9.9	..	5.7
Correlations of 1998 index with:			
Per capita GDP (PPPs)	0.01	0.47**	0.02
Value-added share of services	0.11	0.02	–0.26
Employment share of services	0.07	0.37*	–0.09
Share of specified group in total employment	0.10	–0.21	–0.11

.. Data not available.
*, ** and *** mean statistically significant at the 10%, 5% and 1% levels respectively.
a) Percentage of the specified group who would have to change sectors in order to equalise their sectoral mix of employment with that for all other workers (index calculated over 21 sectors).
b) Values in parenthesis are country ranks.
c) Calculated only for countries with data in both years.
Source: See Annex 3.A.

goods-producing sector is much more low-education intensive overall than the service sector. The shift toward services clearly increases the economic premium on formal education. Within the service sector, less educated workers are the largest share of the workforce in personal services. By contrast, producer and social services employ far fewer less educated workers.

The bottom panel of Table 3.6 shows the ratios of university to non-university workers by economic activities. The service sector employs a much higher share of university-educated workers than the goods sector, but important differences also occur within these two broad sectors. Among the goods-producing sectors, the highest ratio of university workers is in electricity, gas and water supply. Within the service sector, producer and social services show the highest ratios.

Dissimilarity indices comparing the sectoral distribution of employment between low and more educated workers range widely, from 16 per cent in New Zealand to 41 per cent in the Czech Republic (Table 3.5). It is unclear,

Table 3.6. Skill composition of service employment in 1998

	Goods-producing sector						Service sector				
	Total	Agriculture, hunting and forestry	Mining and quarrying	Manufacturing	Electricity, gas and water supply	Construction	Total	Producer services	Distributive services	Personal services	Social services
Ratio of low-skill to medium/high-skill, by economic sector [a]											
Austria	0.39	0.88	0.48	0.32	0.10	0.33	0.22	0.18	0.24	0.42	0.14
Belgium	0.73	1.08	0.62	0.63	0.43	1.02	0.36	0.19	0.59	0.61	0.25
Canada	0.36	0.80	0.21	0.32	0.00	0.35	0.16	0.09	0.24	0.28	0.09
Czech Republic	0.13	0.22	0.12	0.14	0.07	0.08	0.08	0.04	0.09	0.09	0.08
Denmark	0.41	0.58	0.30	0.44	0.20	0.30	0.25	0.14	0.41	0.55	0.16
Finland	0.45	0.69	3.38	0.39	0.22	0.45	0.27	0.27	0.48	0.31	0.15
France	0.61	0.89	0.61	0.54	0.17	0.75	0.42	0.31	0.52	0.77	0.34
Germany	..	..	..	..	..	..	..	..	..	..	..
Greece	2.83	9.15	1.92	1.25	0.47	3.26	0.48	0.10	0.76	1.14	0.20
Ireland	..	..	..	..	..	..	..	..	..	..	..
Italy	2.06	5.40	1.38	1.64	0.87	2.79	0.71	0.24	1.37	1.86	0.35
Luxembourg	..	..	..	..	..	..	..	..	..	..	..
Mexico	0.92	1.35	0.57	0.59	0.28	1.21	0.45	0.13	0.53	0.82	0.13
Netherlands	..	..	..	..	..	..	..	..	..	..	..
New Zealand	0.73	0.95	..	0.72	..	0.54	0.39	0.26	0.82	0.52	0.15
Norway	0.24	0.32	0.13	0.24	0.13	0.22	0.14	0.08	0.22	0.21	0.10
Portugal [c]	7.75	15.25	9.98	7.60	2.37	8.77	2.28	1.15	2.67	5.69	1.51
Spain	2.66	8.15	2.10	1.75	0.66	3.92	0.95	0.49	1.63	2.57	0.34
Sweden	0.45	0.74	0.14	0.43	0.29	0.44	0.21	0.16	0.39	0.36	0.12
Switzerland	0.35	0.55	1.18	0.32	0.19	0.33	0.23	0.11	0.30	0.47	0.17
United Kingdom	..	..	..	..	..	..	..	..	..	..	..
United States	0.21	0.46	0.18	0.18	0.05	0.26	0.13	0.06	0.16	0.35	0.06
OECD average	**1.25**	**2.79**	**1.46**	**1.03**	**0.41**	**1.47**	**0.45**	**0.24**	**0.67**	**1.00**	**0.26**
Ratio of university to non-university workers, by economic sector [b]											
Austria	0.02	0.01	0.02	0.03	0.04	0.02	0.11	0.17	0.03	0.04	0.20
Belgium	0.10	0.02	0.13	0.12	0.14	0.05	0.22	0.45	0.10	0.09	0.28
Canada	0.09	0.04	0.12	0.12	0.14	0.05	0.29	0.42	0.11	0.15	0.53
Czech Republic	0.06	0.05	0.05	0.06	0.09	0.07	0.18	0.41	0.06	0.07	0.32
Denmark	0.02	0.01	..	0.03	0.02	0.00	0.07	0.14	0.02	0.03	0.10
Finland	0.08	0.04	..	0.11	0.11	0.05	0.20	0.30	0.06	0.07	0.32
France	0.14	0.07	0.16	0.19	0.33	0.07	0.40	0.63	0.18	0.13	0.62
Germany	..	..	..	..	..	..	..	..	..	..	..
Greece	0.03	0.01	0.03	0.07	0.11	0.02	0.28	0.81	0.08	0.07	0.64
Ireland	..	..	..	..	..	..	..	..	..	..	..
Italy	0.04	0.02	0.09	0.04	0.05	0.04	0.19	0.32	0.04	0.05	0.39
Luxembourg	..	..	..	..	..	..	..	..	..	..	..
Mexico	0.06	0.01	0.25	0.10	0.26	0.09	0.22	0.82	0.10	0.06	0.72
Netherlands	..	..	..	..	..	..	..	..	..	..	..
New Zealand	0.04	0.05	..	0.06	..	..	0.24	0.44	0.03	0.03	0.51
Norway	0.15	0.07	0.57	0.17	0.20	0.09	0.53	0.88	0.21	0.22	0.86
Portugal [c]	0.02	0.01	0.02	0.02	0.10	0.02	0.06	0.14	0.04	0.01	0.14
Spain	0.07	0.02	0.08	0.10	0.36	0.05	0.32	0.53	0.09	0.06	0.99
Sweden	0.06	0.02	0.05	0.07	0.07	0.03	0.19	0.25	0.05	0.09	0.29
Switzerland	0.04	0.00	..	0.06	0.02	0.02	0.13	0.18	0.05	0.04	0.21
United Kingdom	..	..	..	..	..	..	..	..	..	..	..
United States	0.21	0.16	0.28	0.26	0.32	0.11	0.43	0.70	0.21	0.14	0.76
OECD average	**0.07**	**0.04**	**0.14**	**0.09**	**0.15**	**0.05**	**0.24**	**0.45**	**0.09**	**0.08**	**0.46**

.. Data not available.

a) "Low skill" corresponds to ISCED 0-2 and "medium/high skill" to ISCED 3-7.

b) "University" corresponds to ISCED 6-7 and "non-university" to ISCED 0-5, except for the Czech Republic, where "university" corresponds to ISCED 5-7 and "non-university" to ISCED 0-4.

c) Year 1997.

Sources: For France and Portugal, figures were obtained from the national labour force surveys; for the other countries, see Annex 3.A.

however, whether this variation is primarily due to differences in economic structure (*i.e.* the sectoral mix of skill demand) or to the skill mix of the workforce. The dissimilarity index rises as income and the employment share of services rises (augmenting the concentration of low-skilled workers in goods production), but it falls as the level of educational attainment rises.

C. Age

Table 3.7 presents the age composition in the service and the non-service activities. The top panel of the table shows that youths are a similar share of the workforce in the service and in the goods-producing sector. However the propositions vary significantly within the service sector. Nearly one in every three workers in personal services is younger than 25. Distributive services also show a high ratio of young workers, mainly due to the large presence of this group in retail trade.

The greatest presence of older workers is found in agriculture, hunting and forestry (bottom panel of Table 3.7). Except for this particular case, older workers are quite equally distributed across broad sectors. However, the concentration varies significantly when more disaggregated service activities are considered. For example, within the distributive services, older workers are twice as concentrated in communications as in any other distributive service activity (not shown here).

Dissimilarity indices show that segregation between youths and adults by sector is more extensive than that between men and women (see Table 3.5). The average index for employment across twenty-one sectors indicates that in 1998, 37 per cent of young workers would have to change sector in order to equalise the distribution of adult workers. This represented an increase of six percentage points over 1984.

IV. Determinants of the share of service employment in total employment

A. Overview of the issues

This section analyses the causes of the significant international and intertemporal differences in the level and composition of service employment that were identified in Section II. The potential causes of the secular rise of the share of services in total employment or of international differences in the service-share at a point-in-time, can be classified into three determinants: the rise in income; lagging productivity in services; and exogenous shifts in the demand for services (holding incomes and the relative price of services fixed) [Summers (1985)]. Several econometric studies have confirmed Fuchs' (1968) finding that lagging productivity has been the most important factor causing the service-sector share to increase, that exogenous demand shifts (*e.g.* increased outsourcing of support services by goods producers) have played a secondary role and that rising income has played little or no role [Inman (1985)].

If productivity trends are the central cause of changes in service-sector shares of employment, all countries should experience a similar evolution over time because technological changes quickly diffuse across international borders. However, some researchers put more stress on exogenous demand shifts, such as the secular rise in female labour participation, the expansion of the welfare state and other cultural and institutional factors, which may result in persistent differences across countries [Castells (1996); Esping-Andersen (1999)]. Large differences among service subsectors in productivity trends have also received increased attention [Baumol *et al.* (1985); Pellegrini (1993)]. Indeed, some recent accounts of economic growth suggest that ICT and changes in business organisation are creating demands for new or higher quality services that are being met with innovative products [OECD (1998*a*, 1999*a*)]. Whereas past growth in services employment may have resulted primarily from a combination of lagging service-sector productivity with a stable output share, there may now be stronger demand shifts toward certain dynamic services.

Table 3.8 juxtaposes the overall share of the service sector in the economy with the first two of these explanatory factors: income – measured as per capita GDP expressed in dollars – and the extent to which service-sector productivity lags that in goods production – measured as the ratio of the PPP for services to the PPP for goods. Higher income is strongly associated with both higher relative costs for services (correlation coefficient of 0.88) and an increase in the service-sector share of employment (correlation coefficient of 0.76). The close association between GDP growth and increases in the relative price of services suggests that it may be difficult to differentiate between the contributions of these two factors to increases in the service employment share. In the remainder of this section, multivariate regression techniques are used to estimate the independent contributions of these two factors, as well as those of additional variables intended to capture exogenous demand shifts towards services.

Panel models are estimated for the period 1984-1998 that take maximum advantage of the data for service-sector employment shares that was presented in Section II. This approach allows both the variation across countries and the variation over time (within countries) to be exploited in

Table 3.7. Age composition of service employment in 1998 [a]

	Goods-producing sector						Service sector				
	Total	Agriculture, hunting and forestry	Mining and quarrying	Manufacturing	Electricity, gas and water supply	Construction	Total	Producer sercives	Distributive services	Personal services	Social services
Ratio of youth to adult, by sector [b]											
Austria	0.18	0.06	0.18	0.19	0.04	0.27	0.15	0.11	0.19	0.25	0.09
Belgium	0.12	0.08	0.08	0.12	0.07	0.16	0.08	0.08	0.09	0.15	0.06
Canada	0.14	0.17	0.12	0.15	0.03	0.12	0.18	0.13	0.23	0.44	0.09
Czech Republic	0.16	0.09	0.09	0.18	0.13	0.19	0.17	0.15	0.19	0.27	0.11
Denmark	0.16	0.14	0.00	0.16	0.02	0.20	0.20	0.14	0.35	0.57	0.10
Finland	0.10	0.05	0.21	0.12	0.10	0.08	0.11	0.09	0.14	0.25	0.06
France	0.09	0.07	0.04	0.10	0.02	0.12	0.09	0.07	0.12	0.16	0.06
Germany	0.13	0.10	0.06	0.11	0.08	0.18	0.12	0.11	0.13	0.17	0.10
Greece	0.11	0.08	0.07	0.13	0.03	0.16	0.11	0.10	0.14	0.20	0.03
Ireland	0.23	0.09	0.10	0.30	0.09	0.27	0.23	0.23	0.30	0.42	0.09
Italy	0.13	0.07	0.06	0.15	0.06	0.13	0.08	0.08	0.10	0.15	0.03
Korea	0.07	0.01	0.05	0.10	0.06	0.07	0.12	0.13	0.11	..	..
Luxembourg	0.09	0.08	0.08	0.08	0.05	0.13	0.10	0.07	0.17	0.17	0.07
Mexico	0.42	0.38	0.15	0.51	0.12	0.35	0.32	0.30	0.35	0.41	0.16
Netherlands	0.14	0.20	0.01	0.14	0.02	0.15	0.17	0.13	0.29	0.40	0.07
New Zealand	0.14	0.11	0.00	0.15	0.00	0.15	0.23	0.19	0.38	0.71	0.05
Norway	0.14	0.15	0.07	0.13	0.08	0.16	0.15	0.09	0.19	0.37	0.10
Portugal	0.19	0.05	0.06	0.26	0.06	0.25	0.15	0.19	0.19	0.19	0.07
Spain	0.17	0.12	0.07	0.19	0.04	0.18	0.13	0.11	0.17	0.21	0.05
Sweden	0.09	0.08	0.04	0.10	0.00	0.10	0.10	0.10	0.14	0.26	0.05
Switzerland	0.16	0.12	0.09	0.15	0.21	0.22	0.15	0.14	0.19	0.27	0.10
United Kingdom	0.14	0.14	0.05	0.15	0.14	0.13	0.17	0.14	0.26	0.40	0.07
United States	0.13	0.20	0.10	0.11	0.04	0.15	0.19	0.13	0.24	0.45	0.10
OECD average	**0.15**	**0.12**	**0.08**	**0.16**	**0.07**	**0.17**	**0.15**	**0.13**	**0.20**	**0.31**	**0.08**
Ratio of old to non-old, by sector [c]											
Austria	0.10	0.28	0.06	0.06	0.13	0.07	0.07	0.09	0.07	0.07	0.07
Belgium	0.07	0.21	0.06	0.05	0.10	0.07	0.07	0.06	0.08	0.08	0.07
Canada	0.12	0.27	0.09	0.10	0.07	0.12	0.10	0.12	0.10	0.09	0.10
Czech Republic	0.10	0.12	0.06	0.09	0.14	0.09	0.10	0.12	0.08	0.09	0.13
Denmark	0.14	0.34	0.03	0.11	0.16	0.13	0.12	0.12	0.09	0.15	0.13
Finland	0.12	0.24	..	0.09	0.06	0.12	0.09	0.11	0.08	0.08	0.10
France	0.08	0.20	0.07	0.06	0.05	0.08	0.08	0.07	0.06	0.10	0.08
Germany	0.15	0.30	0.07	0.14	0.17	0.14	0.15	0.14	0.15	0.16	0.16
Greece	0.31	0.68	0.08	0.11	0.07	0.15	0.11	0.08	0.14	0.12	0.09
Ireland	0.15	0.45	0.10	0.07	0.15	0.10	0.10	0.07	0.10	0.10	0.13
Italy	0.12	0.33	0.12	0.08	0.08	0.14	0.13	0.10	0.14	0.12	0.13
Korea	0.30	1.31	0.15	0.08	0.10	0.11	0.13	0.17	0.12	..	..
Luxembourg	0.06	0.19	0.08	0.06	0.14	0.03	0.07	0.05	0.06	0.05	0.10
Mexico	0.16	0.28	0.13	0.08	0.10	0.10	0.11	0.07	0.13	0.13	0.07
Netherlands	0.09	0.21	0.10	0.08	0.13	0.07	0.07	0.06	0.07	0.06	0.08
New Zealand	0.12	0.26	0.00	0.07	0.00	0.10	0.07	0.08	0.07	0.00	0.08
Norway	0.18	0.36	0.08	0.16	0.23	0.13	0.15	0.15	0.14	0.09	0.18
Portugal	0.26	1.12	0.16	0.10	0.15	0.08	0.15	0.10	0.18	0.18	0.12
Spain	0.15	0.36	0.08	0.11	0.13	0.10	0.12	0.08	0.13	0.14	0.13
Sweden	0.20	0.50	0.33	0.17	0.28	0.18	0.19	0.17	0.18	0.15	0.21
Switzerland	0.20	0.39	0.13	0.18	0.16	0.13	0.17	0.15	0.16	0.20	0.18
United Kingdom	0.15	0.32	0.12	0.14	0.08	0.15	0.13	0.12	0.13	0.14	0.14
United States	0.14	0.25	0.13	0.13	0.10	0.11	0.15	0.15	0.14	0.11	0.16
OECD average	**0.15**	**0.39**	**0.10**	**0.10**	**0.12**	**0.11**	**0.12**	**0.11**	**0.11**	**0.11**	**0.12**

.. Data not available.
a) See Annex 3.A for a description of the sectoral classifications.
b) "Youth" includes the workers aged 15-24, and "adult" those aged more than 25.
c) "Old" includes the workers aged 55 or more, and "non-old" those aged less than 55.
Source: See Annex 3.A.

— Table 3.8. **Per capita GDP, the relative price of services and the size of the service sector, 1998**[a] —

	GDP per capita[b]	Relative price of services (PPPs)[c]	Service share of value added[d]	Service share of employment
Luxembourg	34 701	1.07	76.1	75.1
United States	30 394	1.25	72.2	73.8
Germany	27 569	1.08	66.6	62.6
Norway	26 611	0.99	63.9	72.7
Switzerland	26 297	1.28	63.0	69.2
Denmark	26 297	0.90	71.3	69.5
Iceland	24 716	..	60.5	..
Canada	24 106	1.04	64.0	69.9
Japan	24 103	0.91	61.1	59.4
Belgium	24 003	0.95	69.8	70.2
Austria	23 073	1.01	64.5	63.8
Netherlands	22 887	0.98	69.3	70.2
Australia	22 697	0.90	70.4	73.3
Ireland	22 429	0.87	51.0	61.7
France	22 089	1.06	70.8	69.2
Italy	21 999	0.84	66.5	60.8
Finland	21 677	0.95	63.0	64.2
United Kingdom	21 218	0.92	69.9	71.4
Sweden	21 162	1.04	67.9	70.9
New Zealand	17 801	0.79	64.5	67.4
Spain	16 743	0.85	64.9	61.7
Portugal	15 242	0.58	60.2	50.2
Greece	14 411	0.73	68.5	58.8
Korea	13 543	..	50.2	59.7
Czech Republic	13 133	0.38	51.6	53.1
Hungary	10 530	0.42	60.2	57.6
Poland	7 989	0.42	58.7	..
Mexico	7 953	0.62	65.6	55.6
Turkey	6 723	0.43	52.6	23.5
Correlation coefficient with:				
GDP per capita		0.88***	0.58***	0.76***
Relative price of services	0.88***		0.62***	0.75***

.. Data not available.
*, ** and *** mean statistically significant at the 10%, 5% and 1% levels respectively.
a) Countries listed in descending order by GDP per capita.
b) GDP per capita measured in USD using purchasing power parities (PPPs).
c) 1996 PPP for services divided by PPP for goods.
d) 1998 data except 1997 for Japan, Turkey and the United States; 1996 for Sweden; 1995 for New Zealand; 1991 for Switzerland.
Sources: Population: *OECD Main Economic Indicators (MEI)* except for Belgium and Greece which were estimated using MEI benchmarks and trends from the UN population database for 1998; GDP: OECD (1999*b*); Service share of value added: OECD (2000*a*); Purchasing Power Parities: OECD (1999*c*); Service share of employment: see Annex 3.A.

estimating the impact of the explanatory variables on the service share. Fixed country effects are included in the model since it is not possible to include explanatory variables that control for all of the factors that may create cross-country differences in employment shares. The random-effects, generalised least squares (GLS) procedure for unbalanced panels is used to estimate the coefficients of this model, since relatively few degrees of freedom are available for estimating the time-invariant country effects. This model involves strong identification assumptions that need to be verified on a case-by-case basis.

The regression models include a series of explanatory variables that economic theory suggests may be important determinants of the service employment share [see Annex 3.B for definitions and sources of the regressors used]. As much as possible, the selection of regressors was guided by prior research. In order to provide qualitative guidance to the possible impact of policy choices on the composition of output, emphasis was placed on including variables reflective of international differences in policy. The regressors can be divided into three groups:

- The two *core regressors* are the income and relative price variables presented in the first two columns of Table 3.8. Coefficient estimates are presented for a *restricted model* that only includes these two regressors, since these results can more easily be compared with the results from prior econometric studies [*e.g.* Curtis and Murthy (1998)].

- Regressors primarily reflecting differences in *labour costs* that may effect the sectoral composition of employment. These include the tax wedge on labour income, the strictness of employment protection legislation (EPL), the strictness of product market regulation and the extent of earnings compression. Although these are all economy-wide measures, they may have a disproportionate effect on employment in services, or in those service subsectors that are especially sensitive to the unit costs of employing specific skill groups[9] or experience high rates of turnover.

- Regressors primarily reflecting differences in the *composition of final demand.* These include a measure of the size of the welfare state and the labour force participation rate for women.[10] Product market regulation (*e.g.* shopping hours restrictions) may also operate through its influence on the composition of final demand.

When estimating employment-share models for the four service subsectors or disaggregated service activities, additional regressors are sometimes added that are especially relevant for the specific industries being considered.

While providing an indication of the factors that influence the share of employment in the service sector, the regression results are subject to several caveats. First, endogeneity bias is a potential problem since an element of mutual causation may exist between service employment shares and several of the regressors, particularly female participation rates[11] and earnings inequality.[12] Another difficulty is that a single coefficient may reflect the net effect of off-setting influences. For example, higher earnings inequality may encourage the expansion of personal services that make intensive use of low-skilled workers, by lowering their relative pay. But greater earnings compression may also result in a more equal distribution of income which, in turn, may lead to higher demand for some types of services. Finally, some of the explanatory variables are quite strongly correlated with each other, and may also proxy for omitted variables, making it difficult to differentiate among their effects.

B. Determinants of the overall service employment share

Table 3.9 presents the results for regression models relating international differences in the overall service employment share to the explanatory variables. The first

Table 3.9. **Panel regressions to explain the overall service share of employment** [a]

	Restricted model	Full model	Modified full model (Version 1)	Modified full model (Version 2)
GDP per capita in PPP	0.7 *(26.1)****	0.4 *(9.5)****	0.7 *(18.1)****	0.7 *(15.1)****
Relative price of services [b]	8.5 *(2.0)**	5.0 *(0.5)*	7.1 *(1.0)*	7.2 *(1.0)*
Average tax wedge		0.2 *(1.5)*	0.1 *(0.8)*	0.1 *(0.7)*
EPL		–1.0 *(2.4)***	–0.5 *(1.1)*	–0.4 *(0.8)*
Product market regulation		–4.9 *(1.6)*	–3.3 *(1.3)*	–1.2 *(0.4)*
Earnings compression		2.6 *(0.7)*		
Female participation rate		0.3 *(5.6)****		
Size of the welfare state		0.8 *(5.1)****	0.1 *(0.8)*	0.2 *(1.1)*
Relative tax wedge (Version 1) [c]				–0.9 *(0.2)*
Co-ordination and centralisation [d]				–5.1 *(2.2)***
Number of countries	25	15	18	15
R-squared	0.60	0.61	0.63	0.70
Wald test [e]	707***	835***	514***	407***
Breusch and Pagan test [f]	1 238***	678***	764***	405***
Hausman test [g]	0.0	4.7	5.0	11.3**

*, ** and *** mean statistically significant at the 10%, 5% and 1% levels respectively.

a) Generalised Least Squares (GLS) estimates for the random-effects (unbalanced) panel model over fifteen years (1984-1998). Absolute values of *t*-statistics in parenthesis. Regressions also contain a constant term.

b) PPP for services divided by PPP for goods.

c) Ratio of the tax wedge of a married couple with two children where both partners work, divided by the tax wedge of a married couple with two children where only one partner works. See Annex 3.B for more details.

d) Average of indices of the centralisation and co-ordination of collective bargaining.

e) Wald test for joint significance of regressors (Chi-square statistic).

f) Breusch and Pagan Lagrangian multiplier test for presence of country effects (Chi-square statistic).

g) Hausman test for misspecification of the random-effects model (Chi-square statistic).

Sources and definitions: See Annex 3.A for the dependent variable and see Annex 3.B for the explanatory variables.

column presents the regression coefficients for the *restricted model* that only includes an intercept, per capita GDP and the relative price of services. Column two presents the *full model*, which incorporates six additional explanatory variables reflecting differences in *labour costs* and the *composition of final demand*. The final two columns present two variations of the full model that are intended to assess the robustness of the estimation results to possible endogeneity bias.

The estimated coefficients for the *restricted model* imply that both higher income and higher relative costs for services lead to an increase in the service share, as was suggested by the bivariate analysis of Table 3.8. The fit of this model is quite good, with an R-squared of 0.60 and the Wald test indicating that the two regressors are jointly significant at the 1 per cent level.[13] An important difference from the relatively few prior econometric studies on this topic is that the GDP variable continues to have a positive coefficient, which is large and highly statistically significant, despite the inclusion of a measure of the relative cost of services in the model. This finding suggests that the expansion of the services sector is not simply a matter of the "cost disease" diagnosed by Baumol (1967). Rather, some services appear to be luxury goods with income elasticities greater than unity (see Box 1 for guidance to the interpretation of the regression coefficients).

The estimation results for the *full model* are somewhat disappointing overall, since three of the six additional regressors fail to reach conventional levels of statistical significance and the overall fit of the model is only slightly enhanced (Table 3.9, column 2).[14] The two regressors aimed at capturing differences in the composition of final demand are statistically significant and take the expected sign, with increases in the size of the welfare state and female participation both increasing the service employment share. However, among the four cost variables, only the index for EPL is statistically significant with stricter employment protection being associated with a lower service share of employment. The coefficients for GDP and the relative price of services remain qualitatively similar when the additional regressors are added to the model. The relative importance of the income effect is even somewhat enhanced since the relative price variable is now less precisely estimated and no longer statistically different from zero.

In order to assess whether two of the regressors in the full model – earnings compression and female participation – cause endogeneity bias, two modifications of the full model are also presented in Table 3.9. The first (version 1 in column 3), simply omits these two variables. The second (version 2 in column 4) substitutes two proxies for these variables, which are less likely to be jointly determined with the services employment share: earnings compression being proxied by an index of the co-ordination and centralisation of collective bargaining [OECD (1997*a*) suggests these two are highly interlinked] and female participation by a measure of the country-specific tax "penalty" on female participation (*i.e.* the tax wedge for a married working couple relative to the tax wedge of a one-earner married couple). The results suggest that endogeneity bias is not an important problem for the full model. In both modifications of the full model, the qualitative results for the other regressors are similar, although the (absolute) magnitudes and significance levels of the coefficients for EPL and the size of the welfare state are somewhat reduced.

C. Determinants of the employment shares of the four service subsectors

The descriptive analysis in Sections II-III highlighted the heterogeneity of the service sector. This diversity suggests that the determinants of employment shares almost certainly differ among the service subsectors. Accordingly, Table 3.10 presents estimation results for separate regression models explaining the employment shares of each of the four service subsectors. Two sets of coefficients are presented for each subsector, those for the *restricted model* and those for the *full model*, as defined above for the models of the overall service employment share. The results suggest the following conclusions:

- The four subsectors differ in terms of the signs, magnitudes and statistical significance of the estimated coefficients, confirming that it is important to differentiate among service subsectors when analysing the determinants of employment shares. The fit of the model also varies across the four subsectors, suggesting that using the same regressors for each subsector – as is done here – fails to fully reflect the differences in the underlying determinants.
- GDP per capita has a positive effect on every service subsector share which is almost always statistically significant.[15] However, this effect is considerably stronger for producer and social services than for personal and distributive services. The strong association between higher income and a higher employment share for social services suggests that many of these services are luxury goods in final consumption. The strong association for producer services is more likely to reflect greater intermediate demand for such services in more developed economies.
- A higher tax wedge on labour income reduces somewhat the share of distributive and personal services, but enhances the share of social services. Since social

Box 1. Explanatory note for interpreting the regression coefficients

Theoretical framework

In Baumol's (1967) model of *unbalanced growth*, the economy is composed of two sectors: one sector (*i.e.* the goods sector) is characterised by more rapid productivity growth than the other (*i.e.* the service sector). With a number of ancillary assumptions [*e.g.* constant returns to scale (CRS) production functions, iso-elastic consumption demand, perfect competition], it is possible to derive a simple equation of motion describing the evolution of the service-sector share of total employment:

$$\lambda_s = (\alpha - 1)r_g + (1 + \beta)(r_g - r_s) + \Delta \ ,$$

where λ_s is the growth rate of the service-sector share of total employment, r_g and r_s are the growth rates of labour productivity in the goods- and service-producing sectors, α is the income elasticity of demand for services ($\alpha > 0$), β is the price elasticity of demand for services ($\beta < 0$) and Δ represents exogenous shifts in the demand for services.

The three terms of the equation can be interpreted as follows:

1. The *income effect* (*i.e.* $(\alpha - 1)r_g$) demonstrates that rising income causes the service share of employment to rise if and only if services are a luxury good (*i.e.* if $\alpha > 1$). Note that income grows at rate r_g since the output of the goods-sector is adopted as the numeraire.
2. The *differential productivity effect* [*i.e.* $(1 + \beta)(r_g - r_s)$] represents the net impact of two, off-setting (sub)effects. First, slower productivity growth in services than in goods causes the employment share of services to increase for a fixed output mix, due to the differential trend in unit labour requirements (the labour-requirements effect). Second, slower productivity growth in services causes the relative price of services to rise and, hence, consumers to substitute goods for services (the substitution effect). The substitution effect will overpower the labour-requirements effect if and only if the demand for services is price elastic (*i.e.* $\beta < -1$).
3. The *exogenous shifts* term (*i.e.* Δ) reflects all other factors (*e.g.* changes in demography or tastes) that alter the relative demand for services, holding constant income and the relative price of services. This term was not present in Baumol's theoretical model, but is sometimes added in empirical applications. (Note too, that Baumol used somewhat different notation and contrasted the service sector with manufacturing.)

Empirical implementation

The regression models which are reported in Tables 3.9-3.11 are essentially Baumol's equation of motion converted to level form. This is the model specification strategy adopted by the few prior econometric studies, although log-log or semi-log versions are sometimes estimated instead of the linear specification estimated here. The *restricted model* only contains regressors representing the first two terms of the structural equation, while the *full model* also contains a series of regressors intended to capture the third term.

The three terms are operationalised as follows:

1. The *income effect* is modelled by including per capita GDP in USD (converted by PPPs) as a regressor.

   The significant positive coefficients estimated for this variable suggest that services are a luxury good (*i.e.* the share of services in total expenditures rises as income rises). By contrast, most previous research concluded that the service share is not significantly affected by the level of per capita income (*i.e.* $\alpha \cong 1$).
2. The *differential-productivity effect* is modelled by including the ratio of the PPP price index for total services to the PPP index for total goods as a regressor. (The assumptions of CRS and perfect competition imply equality between the ratio of sectoral output prices and the inverse of the ratio of sectoral productivities.) The predominance of positive, but small and often insignificant coefficients suggests that the demand for services is moderately price inelastic, causing the labour-requirements effect to outweigh slightly the substitution effect. By contrast, previous studies have concluded that demand is quite inelastic and that lagging productivity accounts for most of the growth in the service-sector employment share.
3. The full model includes additional regressors that represent factors that may have caused *exogenous shifts* in the demand for services. These regressors fail to explain much of the in-sample variation in the employment share of services, but several serve to identify factors that are associated with significant differences in the size of certain of the service subsectors.

The regression coefficient for the relative price of services raises particular difficulties of interpretation, since it may not correspond very closely to the theoretical construct analysed by Baumol. If the model's assumptions of CRS technology or perfect competition do not hold, then the relative price of services may not provide a good measure of relative productivity in the two sectors of the economy. Furthermore, Baumol's model of unbalanced growth depicts a *closed* economy and does not take account of the ways in which international trade could alter the impact of sectoral differences in productivity growth on relative prices and the allocation of labour. A regressor based on PPPs may be especially likely to pick up any such effects from trade. Despite these potential difficulties, relative PPPs typically have been used in prior econometric studies using international data [*e.g.* Summers (1985)].

Table 3.10. Panel regressions to explain the employment share of the service subsectors [a]

	Producer services		Distributive services		Personal services		Social services	
	Restricted model	Full model	Restricted model	Full model	Restricted model	Full model	Restricted model	Full model
GDP per capita in PPP	0.3 *(31.2)***	0.2 *(12.3)***	0.0 *(1.1)*	0.0 *(2.4)***	0.1 *(13.0)***	0.1 *(6.0)***	0.3 *(15.4)***	0.1 *(3.3)***
Relative price of services [b]	4.4 *(2.6)***	3.3 *(1.5)*	1.0 *(0.5)*	1.1 *(0.4)*	–3.0 *(1.2)*	0.2 *(0.1)*	6.0 *(1.5)*	3.1 *(0.7)*
Average tax wedge		–0.1 *(1.5)*		–0.1 *(1.7)**		–0.1 *(2.3)***		0.3 *(3.6)***
EPL		–0.5 *(2.6)***		–0.2 *(1.1)*		–0.1 *(0.6)*		–0.1 *(0.3)*
Product market regulation		–0.2 *(0.3)*		–0.3 *(0.3)*		0.0 *(0.0)*		–2.4 *(1.6)*
Earnings compression		–2.3 *(1.4)*		3.1 *(2.3)***		–0.1 *(0.1)*		1.7 *(0.8)*
Female participation rate		0.0 *(2.1)***		–0.1 *(5.3)****		0.0 *(1.7)**		0.2 *(7.5)****
Size of the welfare state		0.2 *(2.1)***		0.0 *(0.5)*		–0.1 *(1.0)*		0.5 *(5.1)****
Number of countries	24	14	25	15	24	14	24	14
R-squared	0.73	0.86	0.00	0.31	0.00	0.28	0.33	0.66
Wald test [c]	1 009***	604***	1	41***	168***	150***	245***	371***
Breusch and Pagan test [d]	948***	181***	1 238***	691***	978***	333***	1 000***	347***
Hausman test [e]	0.1	6.9	0.4	70.2***	0.0	19.8***	0.0	8.6

*, ** and *** mean statistically significant at the 10%, 5% and 1% levels respectively.

a) Generalised Least Squares (GLS) estimates for the random-effects (unbalanced) panel model over fifteen years (1984-1998). Absolute values of *t*-statistics in parenthesis. Regressions also contain a constant term.

b) PPP for services divided by PPP for goods.

c) Wald test for joint significance of regressors (Chi-square statistic).

d) Breusch and Pagan Lagrangian multiplier test for presence of country effects (Chi-square statistic).

e) Hausman test for misspecification of the random-effects model (Chi-square statistic).

Sources and definitions: See Annex 3.A for the dependent variables and see Annex 3.B for the explanatory variables.

Table 3.11. **Panel regressions to explain the employment share of selected service activities** [a]

	Business and professional services		Retail trade		Hotels and restaurants		Health services	
	Full model	Modified full model	Full model	Modified full model	Full model	Modified full model	Full model	Modified full model
GDP per capita in PPP	0.2 *(11.7)***	0.2 *(8.7)***	0.1 *(3.9)***	0.1 *(3.8)***	0.1 *(6.3)***	0.1 *(6.6)***	0.0 *(1.2)*	0.0 *(2.4)**
Relative prices of services [b]	–0.1 *(0.0)*	–1.9 *(1.1)*	1.4 *(0.6)*	1.6 *(0.6)*	0.8 *(0.8)*	0.9 *(1.1)*	1.6 *(0.7)*	2.1 *(0.9)*
Average tax wedge	0.0 *(0.6)*	0.0 *(0.9)*	0.0 *(0.7)*	0.0 *(0.7)*	–0.1 *(2.7)***	–0.1 *(3.9)***	0.1 *(2.6)***	0.1 *(1.8)**
EPL	–0.3 *(2.1)**	–0.4 *(2.3)**	–0.2 *(1.9)**	–0.2 *(2.0)**	–0.1 *(0.8)*	0.0 *(0.4)*	0.2 *(1.4)*	0.2 *(1.4)*
Product market regulation	–0.3 *(0.5)*	0.3 *(0.5)*	–0.7 *(0.8)*	–0.5 *(0.5)*	0.0 *(0.0)*	–0.1 *(0.2)*	–0.2 *(0.2)*	0.1 *(0.1)*
Earnings compression	–2.5 *(1.9)**	–2.7 *(1.9)**	2.0 *(2.0)**	2.1 *(2.0)**	–2.1 *(2.4)**	–3.0 *(3.3)***	0.5 *(0.4)*	0.4 *(0.4)*
Female participation rate	0.0 *(2.1)**	0.0 *(2.5)**	–0.1 *(4.7)***	–0.1 *(4.6)***	0.0 *(1.1)*	0.0 *(2.6)***	0.0 *(2.6)***	0.0 *(1.6)*
Size of the welfare state	0.1 *(2.1)**	0.1 *(1.8)**	–0.1 *(2.0)**	–0.1 *(1.9)**	0.0 *(0.7)*	0.0 *(0.1)*	0.2 *(3.3)***	0.2 *(3.3)***
Investment in software and hardware		0.3 *(1.5)*						
Relative tax wedge (Version 2) [c]				–1.4 *(0.6)*		2.0 *(1.4)*		
Ageing population								0.2 *(3.7)***
Number of countries	14	13	15	15	14	14	15	15
R-squared	0.79	0.82	0.49	0.44	0.55	0.71	0.49	0.54
Wald test [d]	538***	524***	37***	36***	121***	139***	39***	56***
Breusch and Pagan test [e]	153***	99***	698***	593***	316***	201***	536***	425***
Hausman test [f]	2.4	6.8	7.1	8.8	13.6**	111.1***	14.6**	7.8

*, ** and *** mean statistically significant at the 10%, 5% and 1% levels respectively.

a) Generalised Least Squares (GLS) estimates for the random-effects (unbalanced) panel model over fifteen years (1984-1998). Absolute values of *t*-statistics in parenthesis. Regressions also contain a constant term.

b) PPP for services divided by PPP for goods.

c) Ratio of the tax wedge of a single person whose earnings are one third of the average earnings, divided by the tax wedge of a single person whose earnings are one third above the average earnings. See Annex 3.B for more details.

d) Wald test for joint significance of regressors (Chi-square statistic).

e) Breusch and Pagan Lagrangian multiplier test for presence of country effects (Chi-square statistic).

f) Hausman test for misspecification of the random-effects model (Chi-square statistic).

Sources and definitions: See Annex 3.A for the dependent variables and Annex 3.B for the explanatory variables.

services are predominantly public, the latter finding may reflect reverse causality, namely, that the expansion of collective social services is associated with higher tax levels.

- Stricter regulation relating to employment protection reduces the employment share of producer services, suggesting that flexible forms of employment may be particularly important for this subsector.
- Greater earnings compression is associated with a higher employment share in distributive and social services, but is insignificant elsewhere. However, the earnings compression coefficient becomes insignificant if wage compression is measured instead over the bottom half of the earnings distribution (*i.e.* by the ratio of the 10th percentile to median earnings). A positive effect is not what would be expected if wage compression is an impediment to job creation in low-skilled services.
- The positive associations between the overall employment share of services and female participation and the size of the welfare state are disproportionately due to changes in the share for the social services. The producer-services share is also positively related to these variables, but this finding is puzzling since it is not evident why either should shift the composition of demand toward producer services.

D. Determinants of the employment shares of four disaggregated service activities

This subsection presents regression models for the employment shares of more narrowly defined service activities. One disaggregated activity has been selected from each subsector: business and professional services; retail trade; hotels and restaurants; and health services. In each case, coefficients are presented for the *full model* as well as for an extended version of that model that incorporates an additional variable of particular salience for that activity (Table 3.11). In the case of business and professional services, the *modified full model* includes investment in computer software and hardware (as a percentage of GDP) as an additional regressor. In the case of both retail trade, and hotels and restaurants, the *modified full model* includes a relative tax wedge variable that is intended to measure the differential tax impact on low-earning workers. Finally, in the case of health services the *modified full model* includes the relative size of the aged population that is intended to capture the positive relationship between advanced age and the consumption of health care.

- The results for *business and professional services* show that stricter EPL and wage compression lower the employment share,[16] while female participation and welfare-state size have positive effects.
- The results for *retail trade* differ considerably from those obtained for overall distributive services, consistent with this being a particularly heterogenous subsector. The employment share is now significantly negatively related to EPL, consistent with an extensive retail sector being characterised by irregular work schedules and high turnover. The size of the welfare state now has a negative (and significant) impact on retail employment shares, which is difficult to interpret.
- The regression coefficients for the employment share in *hotels and restaurants* are similar to those for personal services, except that the effect of earnings compression is now strongly and significantly negative. This finding is consistent with high labour costs for low-skilled workers being an impediment to hiring in this sector [Piketty (1998)]. However, the relative tax variable that was added to capture another aspect of the relative cost of low-paid workers has a positive sign, which is inconsistent with this interpretation. Female participation has a positive coefficient that is sometimes statistically significant, consistent with increased paid employment among women leading to increased demand for dining out.
- The regression coefficients for the employment share in *health services* largely conform to those found for total social services, except that the impact of female participation and of welfare state size on the employment share is smaller. These differences probably reflect the smaller role for home production and the greater role of market purchases in health care as compared with other social services. The effect of population ageing is positive as expected and highly significant.

V. Does underdevelopment of service employment explain low employment rates?

The relationship between the service share of employment and overall employment is analysed in this section. Although motivated by policy concerns to increase employment rates in many OECD countries, this analysis is largely restricted to assessing the importance of lower service employment for explaining poorer employment performance in an *accounting* sense. Even where such an analysis attributes a disproportionate role to services, a full *causal* analysis would be required to assess whether sectorally-targeted policies should play an important role in raising employment rates that are depressed by low service employment.

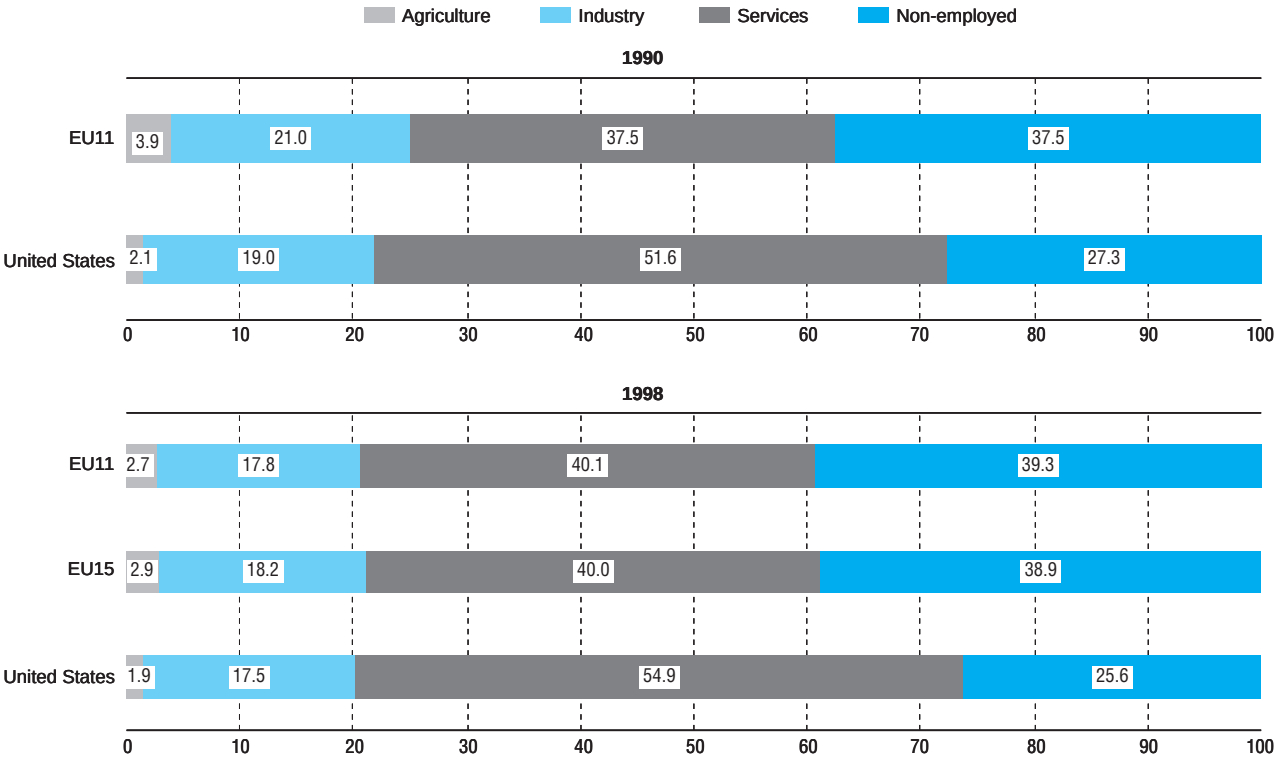
A. The level of employment in 1998

The European Commission (1998) has recently emphasised that the gap between the EU and the United States in the share of the working-age population that is employed is due to lower service employment. The bottom two bars of Chart 3.7, Panel A present the data underlying this observation. In 1998, 55 per cent of the American working-age population were employed in the service sector, as compared with an average of 40 per cent in the EU area. This gap is slightly larger than the 13 percentage-point gap in overall employment rates. Expanding the comparison to 27 OECD countries confirms that service employment accounts for a disproportionate share of international differences in the overall employment rate (Chart 3.7, Panel B).[17] Expressed differently, countries with above-average service-sector shares of employment also tend to have above-average ratios of employment to the working-age population, with the 1998 correlation coefficient between the service employment share and the overall employment rate being 0.54 (statistically significant at the 1 per cent level).

More detailed analysis (not shown here) indicates that the association between a lower concentration of employment in the service sector and overall employment is largely due to international differences in the size of the producer and social services subsectors (correlations of 0.63 and 0.40 with the overall employment rate). In fact, the correlation is negative (albeit statistically insignificant) between the overall employment rate and the employment shares for distributive and personal services. Among the sixteen disaggregated service activities, specialisations in business and professional services, real estate, health services and other social services are most strongly associated with higher overall employment. By contrast, above-average concentrations of employment in retail trade, hotels and restaurants, and domestic services tend to be associated with below-average employment rates.[18] Clearly, it is critical to differentiate among disaggregated

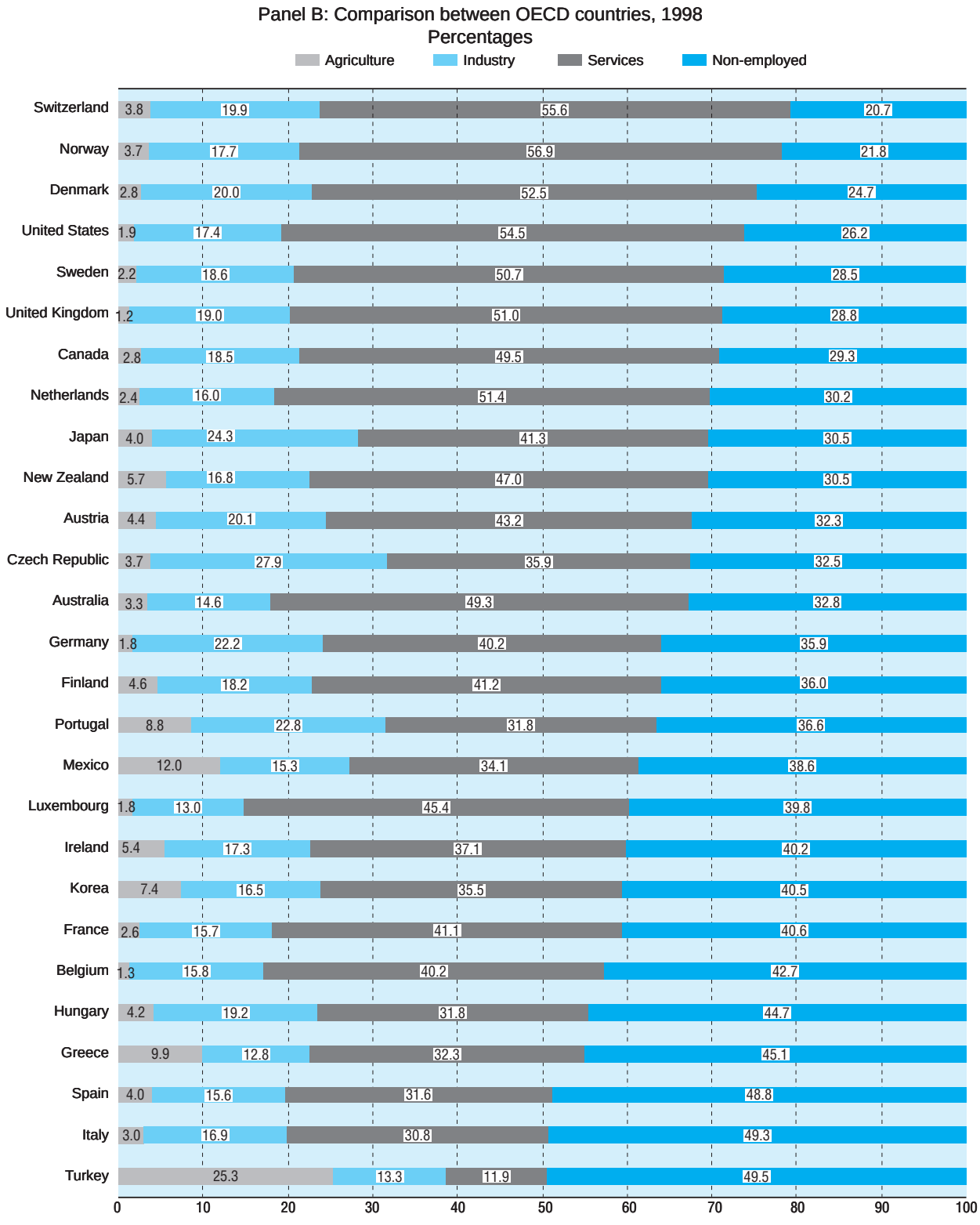
Chart 3.7. **Employment to working-age population ratios by sector**

Panel A: Comparisons between the European Union and the United States, 1990 and 1998[a]
Percentages



a) EU11: includes the EU12 countries except Italy.
Source: See Annex 3.A.

Chart 3.7. **Employment to working-age population ratios by sector** *(cont.)*



Source: See Annex 3.A.

service activities in analysing possible links between greater specialisation in service production and better overall employment performance.

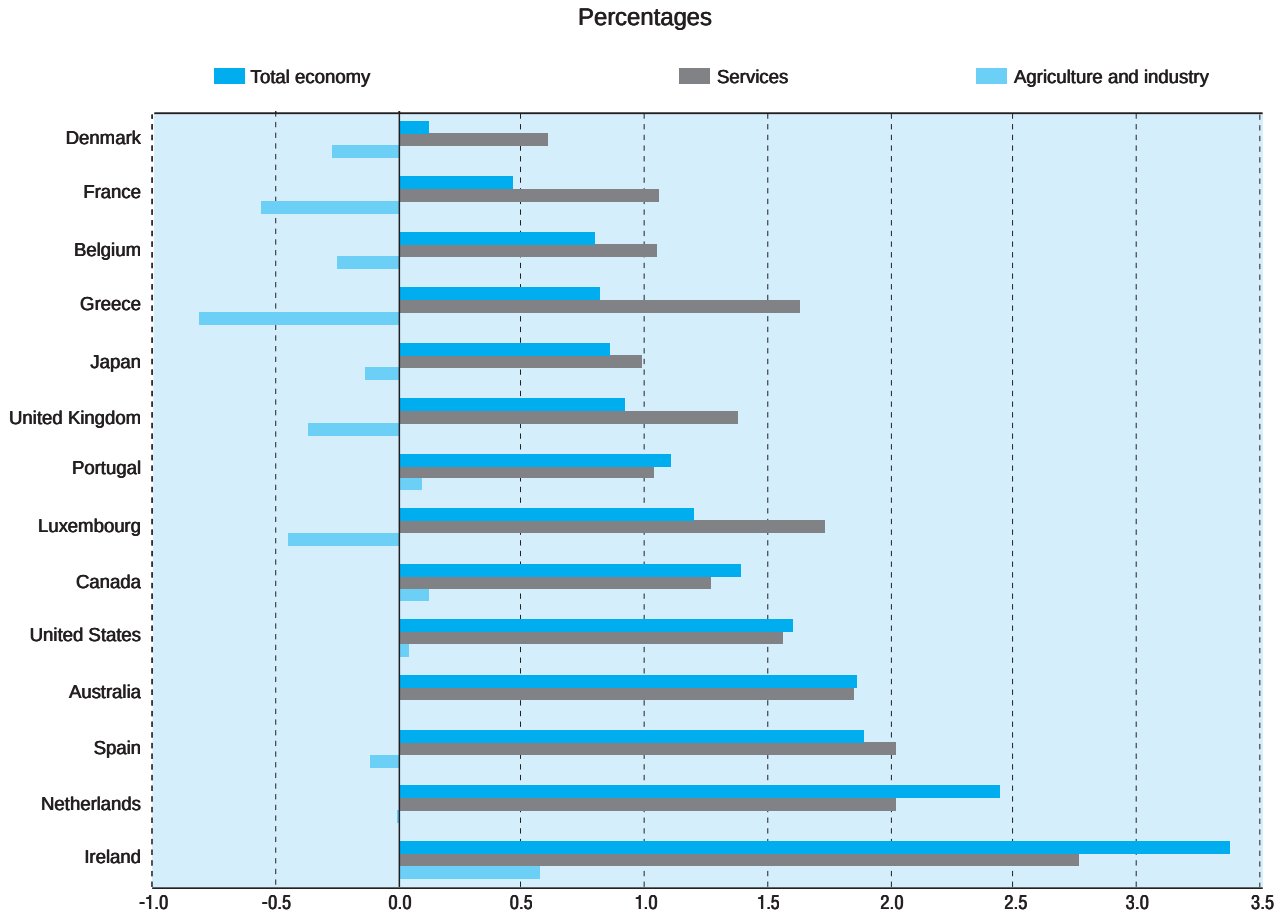
The relative importance of the disaggregated service activities for explaining overall employment changes somewhat when attention is restricted to the comparison of EU countries with the United States [Storrie (2000)]. The US employment advantage compared with the EU average is largely due to higher employment shares for producer services and hotels and restaurants (among the personal services). More generally, the identity of the "critical" industries changes as the group of countries being compared changes. This variability is consistent with the regression results in Section IV, which showed that the employment shares of disaggregated services are affected differently by the underlying economic and demographic environments. It should not be expected that there will be a uniform relationship between the employment shares of the disaggregated service activities and the overall employment rate across countries where these underlying factors vary in complex ways.

The EU employment gap relative to the United States grew by over 3 percentage points during 1990-1998 and 80 per cent of this was due to a more rapid contraction in EU goods-production employment, rather than to stronger US gains in service employment (Chart 3.7, Panel A). This simple calculation suggests that an analysis of the link between service employment shares and employment *growth* is an important complement to the analysis of the link to the *level* of employment.

B. Employment growth, 1986-98

Chart 3.8 decomposes net employment growth during 1986-1998 between the contributions made by the

Chart 3.8. **Sectoral contribution to annualised employment growth, 1986-1998**[a]



a) For Australia, Canada and the Netherlands, total employment growth is calculated over the period 1987 to 1998.
Source: See Annex 3.A.

goods-producing and service sectors for fourteen OECD countries (see Box 2 for an explanation of the calculations used to quantify sectoral contributions to employment growth). Virtually all net employment growth is due to increased service employment. Indeed, job losses in agriculture and industry partially offset job gains in services in one-half of the countries. This simple analysis suggests that policy makers probably should look to services as the dominant source of further employment gains, but also demonstrates that below-average employment

Box 2. Measures used in the sectoral analysis of net employment growth

Definition of terms:

- Annualised net employment growth (EG) in country i:

$$EG_i = \sum_{j=1}^{21} (N_{ijT} - N_{ij0}) / (T * \sum_{j=1}^{21} N_{ij0}),$$

where N_{ijt} denotes employment in country i, sector j and year t.

- Sectoral contribution (SC) to annualised employment growth of sector j in country i:

$$SC_{ji} = EG_{ij} * W_{ij0},$$

where EG_{ij} is employment growth in country i and sector j:

$$EG_{ij} = (N_{ijT} - N_{ij0}) / (T * N_{ij0}),$$

and $W_{ij0,}$ is the share of sector j in total employment at the initial date:

$$W_{ij0} = N_{ij0} / \sum_{j=1}^{21} N_{ij0}.$$

- Growth in country i assuming a common initial distribution (CID):

$$CID_i = \sum_{j=1}^{21} (EG_{ij}) * \overline{W_{j0}},$$

where $\overline{W_{j0}}$ is the employment share of sector j in the overall sample at the initial date:

$$\overline{W_{j0}} = \sum_{i=1}^{n} N_{ij0} / \sum_{i=1}^{n} \sum_{j=1}^{21} N_{ij0}.$$

- Growth in country i assuming common sectoral growth rates (CSG):

$$CSG_i = \sum_{j=1}^{21} \overline{EG_j} * W_{ij0},$$

where $\overline{EG_j}$ is the annualised employment growth of sector j in the overall sample:

$$\overline{EG_j} = \left(\sum_{i=1}^{n} N_{ijT} - \sum_{i=1}^{n} N_{ij0} \right) / \sum_{i=1}^{n} N_{ij0}.$$

Shift-share decomposition:

- Relative annualised employment growth (REG) in country i: $REG_i = EG_i - \overline{EG}$, where $\overline{EG}$ is the annualised employment growth in the overall sample.
- Competitive effect (CE) in country i: $CE_i = CID_i - \overline{EG}$
- Sectoral-mix effect (SE) in country i: $SE_i = CSG_i - \overline{EG}$
- Residual (R) in country i: $R_i = REG_i - CE_i - SE_i$.

performance is often a result of large losses of goods-producing jobs in addition to small gains in service jobs.[19]

Shift-share analysis provides a more comprehensive assessment of the links between the sectoral mix of employment and international differences in employment growth [Ray and Harvey (1995)]. The difference in overall growth performance between a given country and average growth for all countries is decomposed into three (additive) terms: the *competitive effect*, which measures the importance of differences between the sector-specific growth rates in that country and the sector-specific rates averaged over all countries; the *sectoral-mix effect*, which measures the impact of differences between the initial sectoral mix of employment in that country and the average mix for all countries; and a *residual* term which measures whether the employment performance of that country tends to be better – relative to all countries – in the sectors in which it is specialised (see Box 2).

Table 3.12 presents the shift-share decomposition of relative growth performance. Countries are listed in descending order of their 1986-1998 employment growth rates (column 1). The columns to the right then decompose these into the three shift-share terms. This decomposition is performed for three levels of sectoral detail so as to provide a test of robustness.[20] The results are very similar in all three cases, with the exception of a small number of countries for which the most detailed version is heavily influenced by growth rates in a single detailed service sector. For this reason, the decomposition for an intermediate, nine-sector case is used when specific results are cited below.

The main findings are:

- The competitive effect explains the largest part of cross-country variation in employment growth. The correlation between actual employment growth and the competitive effect, which represents a "simulation" of how well a country would have fared if it had begun with the average sectoral mix but maintained its sector-specific growth rates, is 0.80. The implication is that countries in which employment grew fastest tended to have above-average gains across all sectors.[21] This suggests either that economy-wide factors have been the dominant determinants of international differences in employment growth or that the presence of one or a few especially dynamic sectors generates "spillover" effects that raise growth rates in the rest of the economy.
- The sectoral-mix effect is relatively small for almost all countries and is uncorrelated with overall performance. In other words, differences in the sectoral mix of employment in 1986 accounted for very little of the international differences in employment growth over the succeeding 12 years. The one exception to this assessment is that the four countries in the sample with the largest concentrations of employment in agriculture (Greece, Ireland, Portugal and Spain) have negative sectoral-mix effects that are large in magnitude, reflective of their relative specialisation in a declining sector.
- The residual effect also tends to be small and is weakly negatively correlated with overall growth performance. The negative correlation reflects the tendency towards convergence in sectoral mix that was analysed in Section II, since a negative residual term implies a tendency for countries to perform relatively better (worse) in the sectors in which they begin with a below-average (above-average) employment share.[22] The residual takes a large negative value for the four countries with the highest agricultural shares of employment, indicative of the rapid rate at which employment is shifting out of agriculture in these countries.
- In evaluating possible links between the sectoral mix of employment and growth rates within individual sectors, it is crucial to differentiate countries where agriculture is still shedding large numbers of worker from those where the major job losses in this sector have already occurred. While the overall correlation between the competitive and sectoral-mix effects is negative (–0.58), these two effects are positively related within the high- and low-agriculture-share countries (Chart 3.9). The positive association within the two semi-homogenous subgroups may reflect positive spillover effects from being specialised in sectors with the strongest growth prospects. It is unclear why the four high-agricultural-share countries enjoyed above-average growth rates within most individual sectors during 1986-1998 and it should not be concluded that specialisation in a declining sector is generally good for growth.

Conclusions

Service employment continues to grow as a share of total employment in OECD countries, approaching three-quarters of all jobs in several countries by the end of the 1990s. While the increasing numerical dominance of service jobs is a universal trend, the implications for employment opportunities and labour-market policy-making are not straightforward. One complication is the great diversity of service employment as demonstrated by the comparisons among the four service subsectors and their sixteen constituent activities. Another complication is that international

Table 3.12. Shift-share analysis of employment growth, 1986-1998 [a]

	Relative annualised growth [b]	Competitive effect [c]			Sectoral-mix effect [d]			Residual [e]		
		3 sectors	9 sectors	21 activities	3 sectors	9 sectors	21 activities	3 sectors	9 sectors	21 activities
Ireland	1.99	2.77	2.93	4.43	–0.44	–0.45	–0.41	–0.34	–0.48	–2.02
Netherlands	1.07	0.70	0.67	1.02	0.03	0.05	0.03	0.34	0.35	0.02
Spain	0.51	1.37	2.04	4.60	–0.48	–0.60	–0.70	–0.38	–0.94	–3.39
Australia	0.48	0.41	0.46	0.55	0.07	0.04	0.10	0.00	–0.02	–0.17
United States	0.22	0.14	0.12	0.13	0.15	0.19	0.20	–0.07	–0.09	–0.12
Canada	0.01	–0.01	–0.05	–0.07	0.06	0.05	0.15	–0.03	0.01	–0.07
Luxembourg	–0.18	–0.12	0.16	4.31	0.01	0.05	–0.19	–0.08	–0.39	–4.29
Portugal	–0.27	0.49	0.93	2.08	–0.72	–0.81	–0.97	–0.04	–0.38	–1.38
United Kingdom	–0.47	–0.32	–0.22	–0.10	–0.02	–0.04	–0.06	–0.12	–0.20	–0.30
Japan	–0.51	–0.23	–0.47	..	–0.31	–0.22	..	0.02	0.18	..
Greece	–0.56	0.75	1.13	1.16	–0.82	–0.93	–0.93	–0.48	–0.76	–0.80
Belgium	–0.58	–0.61	–0.31	0.78	0.03	–0.06	–0.19	0.00	–0.21	–1.17
France	–0.92	–0.72	–0.64	–0.53	–0.14	–0.15	–0.21	–0.06	–0.13	–0.18
Denmark	–1.25	–1.03	–0.89	–0.52	–0.09	–0.01	–0.16	–0.13	–0.36	–0.57
Average	**–0.03**	**0.26**	**0.42**	**1.37**	**–0.19**	**–0.21**	**–0.26**	**–0.10**	**–0.24**	**–1.11**
Standard deviation	**0.84**	**0.97**	**1.06**	**1.89**	**0.31**	**0.35**	**0.39**	**0.20**	**0.35**	**1.37**

.. Data not available.

a) Countries listed by descending order of the rate of employment growth. For Australia, Canada and the Netherlands the annualised employment change has been calculated for the period 1987-1998.

b) Difference between the annualised employment growth in each country and that for the overall sample.

c) Difference between the annualised employment growth in each country, assuming a common initial distribution, and actual growth for the overall sample.

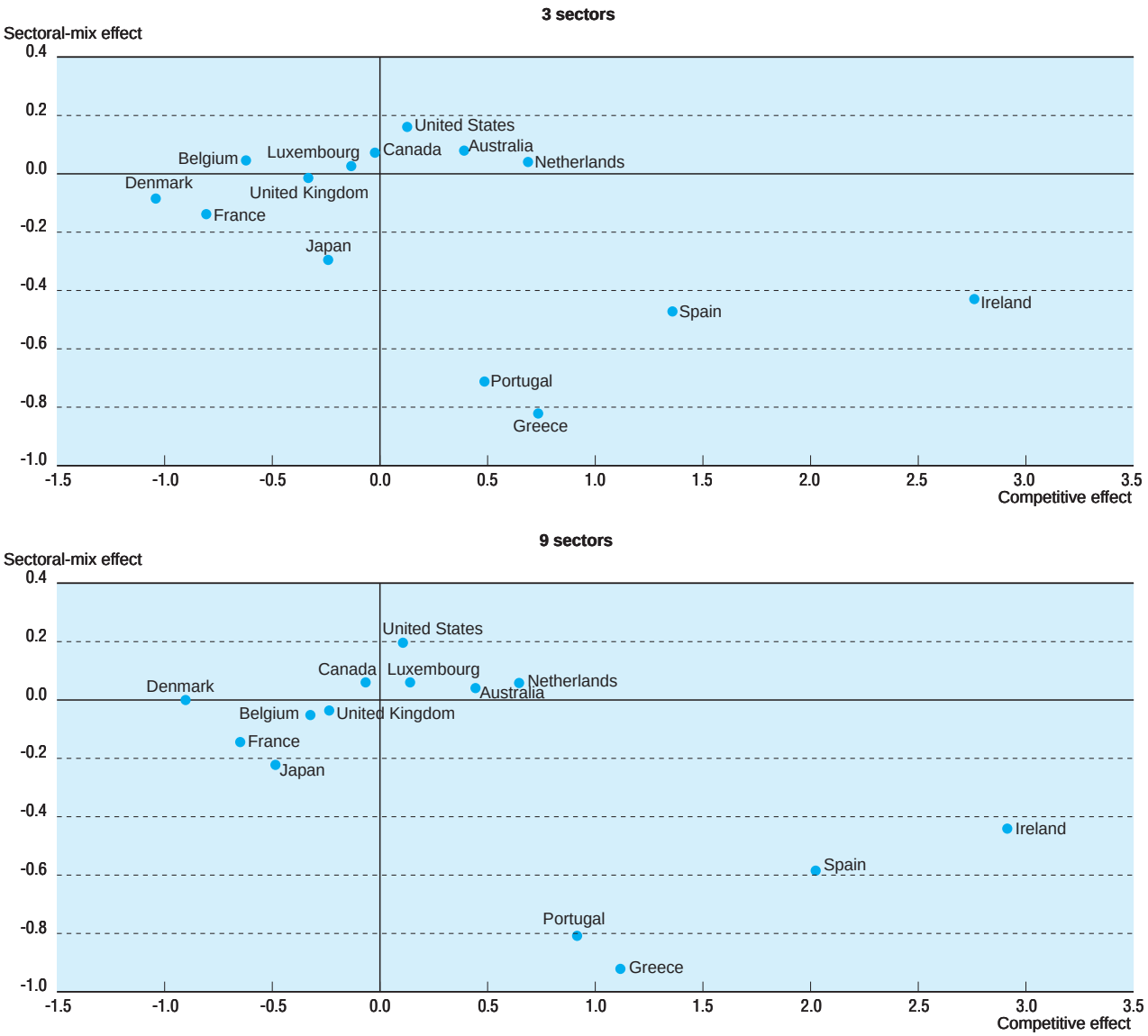
d) Difference between the annualised employment growth in each country, assuming common sectoral growth rates, and actual growth for the overall sample.

e) Residual = Total relative growth in each country minus the competitive and sectoral-mix effects.

Source: See Annex 3.A.

Chart 3.9. **Shift-share analysis of employment growth, 1986-1998**

Competitive and sectoral-mix effects (in percentage points)



Source: See Annex 3.A.

differences in the composition of service employment appear to persist, even at similar income levels, due to a myriad of factors such as differences in the participation rate of married women in paid employment, the size of the welfare state, regulatory policy and trade specialisation. International differences are also apparent in the extent to which specific workforce groups are concentrated in particular service activities. It follows that jobs in the service economy will be very diverse and that the job mix is likely to differ substantially between different countries.

How is the rising numerical dominance of service employment affecting the overall availability of jobs? The analysis in this chapter confirms that services account for virtually all net employment growth in OECD countries. However, it also shows that there is little link between the

sectoral mix of employment and overall employment growth. Countries in which employment has grown fastest have tended to enjoy above-average gains across all sectors. This suggests either that economy-wide factors have been at play or that the presence of especially dynamic sectors generates "spillover" effects that raise growth in the rest of the economy.

The sustained increase in the service employment share also raises the question of whether important mismatches are developing between the evolving job structure and the qualifications and career aspirations of the workforce. The analysis of educational qualifications and occupational mix indicates that the shift of employment toward services increases the premium on formal schooling and cannot be broadly characterised as a trend toward "bad" jobs. Thus, improving workforce education levels is one element of a programme to minimise mismatch. Nonetheless, even the most advanced service economies continue to generate a considerable number of jobs in low-skilled occupations, as well as an increase in the share of part-time and temporary jobs. Whether that constitutes a problem to be addressed by policy depends on the skills, family income needs and labour supply preferences of the workers who hold these jobs. It is intended that a sequel chapter will be published in the 2001 issue of the *Employment Outlook* that will analyse job quality in the service sector more closely, as well as any possible trade-offs between the quality and quantity of service jobs.

NOTES

1. The service sector corresponds to ISIC Rev 3 major divisions G to Q. Annex 3.A provides additional technical details related to the measurement of service sector employment, including the adjustments made for countries not using ISIC Rev 3.
2. As Gershuny (1978) has emphasised, there is also considerable substitutability between personal and social services (*e.g.* restaurant meals and institutional child care) and self-servicing by households (*e.g.* home-cooked meals and familial child care). This chapter only presents data on service activities involving paid-employment.
3. This does not imply that the distinction between service activities performed in-house and those outsourced is without economic significance. For example, specialised service firms can frequently achieve higher levels of efficiency, in which case increased outsourcing represents a further development of the division of labour.
4. Elfring's taxonomy is closely related to those used by earlier researchers [Gershuny (1978); Hill (1977); Singelmann (1978)], which he adapted to facilitate international comparisons.
5. A potential weaknesses of Elfring's taxonomy is that it is not especially well suited to highlight the role of information and communications technology (ICT) in reshaping employment. To some extent, "new economy" workers can be isolated in the "business and professional" and "communications" service activities, but these activities are split between the producer and distributive services subsectors, within which they are grouped with activities that are less ICT intensive. A second limitation is that the distributive services subsector groups retail trade – which is widely perceived to generate many low-paid, low-skill jobs – with activities that appear to offer very different employment conditions and to be technologically more progressive (*e.g.* communications and transportation).
6. Turkey, where an initially low service share declined modestly during 1989-1998, is an exception. The primary reallocation of labour remains that from agriculture to industry.
7. The dissimilarity index for countries 1 and 2 is calculated as $D_{1,2}=\Sigma_i |S_{i,1}-S_{i,2}|$, where $S_{i,j}$ is defined as the employment share of sector i in country j.
8. The United States was chosen as a point of reference because it has often been viewed as being the "pace-setting" country in the evolution of the service economy. This choice is not intended to imply that it is desirable for other countries to have the same industrial structure as the US.
9. A high tax wedge or a compressed wage distribution will tend to increase the relative cost of low-skilled workers and may discourage employment in sectors such as retail trade or hotels and restaurants [Piketty (1998); Davis and Henrekson (2000); Freeman and Schettkat (2000)]. Similarly, strict product market regulation may act as a tax on entrepreneurialism, which may disproportionately affect certain producer and personal services [Krueger and Pischke (1997)].
10. One consequence of increasing female participation is that households have less time to devote to household "service" tasks (*e.g.* laundering, cooking, cleaning, taking care of children, elder, or ill family members, washing the car). Hence, the increasing share of dual-earner households is linked to a greater demand for market services, in particular social and personal services.
11. Since service industries disproportionately employ women, an exogenous increase in the size of the service sector could encourage more women to enter the labour market.
12. Valletta (1997) shows that average wages are lower and earnings dispersion higher in the service sector than in the goods sector in the United States, such that an increase in the service-sector share increases the overall level of earnings inequality.
13. The Hausman test does not indicate a misspecification problem due to the choice of a random-effects model, but the Breusch and Pagan test does indicates that significant country differences in the service employment share remain after controlling for the two core variables. The full model adds additional regressors that are intended to account for some of this remaining variation.
14. One difficulty in estimating the full model is that the limited availability of some of the regressors causes 10 of the original 25 countries to drop from the sample.
15. The relative price of services variable is typically insignificant in the subsector regressions, probably due to it being a services-wide measure rather than a relative productivity measure specific to each subsector.
16. Davis and Henrekson (2000) also find that overall wage compression reduces employment shares for industries characterised by relatively high wage dispersion.
17. Cross-country comparisons also demonstrate that employment rates differ significantly *within* the EU. For example, Denmark has an equivalent level of service employment as the United States and a higher overall employment rate.

18. The results for retail trade, and hotels and restaurants suggest that Piketty's (1998) finding, that higher employment in these activities accounts for much of the US employment advantage over France, does not generalise to comparisons among OECD countries generally.

19. Another implication is that some countries with below-average employment growth must nonetheless manage rapid shifts of employment from the goods- to service-employing sectors [European Commission (2000)].

20. The three and twenty-one-sector versions are the same as used to calculate dissimilarity indices in Table 3.3, while the nine-sector version differentiates among the five goods-producing and four service subsectors.

21. Garibaldi and Mauro (1999) reach the same conclusion using similar techniques but somewhat different years and countries.

22. The residual term is sometimes interpreted as a measure of the extent to which a country is specialised in those sectors in which it enjoys a competitive advantage [Ray and Harvey (1995)]. But, this adopts a static notion of comparative advantage that implies that the industrial mix of countries should tend to diverge in order to fully exploit gains from specialisation.

Annex 3.A

Definition of Service-sector Employment and its Constituent Components

Definition of industrial groupings

The empirical analysis in this chapter adopts the definition of services that was established by the United Nations in Revision 3 of the International Standard Industrial Classification of all Economic Activity (ISIC Rev. 3). Total service-sector employment is divided into 4 subsectors and 16 activities proposed by Elfring (1989), which differ somewhat from the subcategories used in the ISIC. The major difference between Elfring's groupings and those used in the ISIC is in the way in which he reaggregates the detailed ISIC service industries to form four service subsectors (producer, distributive, personal and social services). The mapping between the 292 4-digit industry classes in ISIC Rev. 3 and the industrial groupings introduced by Elfring and used here is provided in Table 3.A.1. An analogous mapping is provided for the 503 4-digit industry classes used in Revision 1 of the General Industrial Classification of Economic Activities within the European Communities (NACE Rev. 1), which is used by EU Countries and is closely related to the ISIC Rev. 3.

Table 3.A.1. **Definition of sectors used in the empirical analysis**

Sector	ISIC Rev. 3 code [a]	NACE Rev. 1 code [b]
Agriculture, hunting and forestry	0112-0500	01.11-05.02
Mining and quarrying	1010-1429	10.10-14.50
Manufacturing	1511-3720	15.11-37.20
Electricity, gas and water supply	4010-4100	40.10-41.00
Construction	4510-4550	45.11-45.50
Producer services		
Business and professional services	7111-7129 and 7210-7499	71.10-71.34 and 72.10-74.84
Financial services	6511-6599 and 6711-6719	65.11-65.23 and 67.11-67.13
Insurance	6601-6603 and 6720	66.01-66.03 and 67.20
Real estate	7010-7020	70.11-70.32
Distributive services		
Retail trade	5010, 5030-5050 and 5211-5259	5010, 50.30-50.50 and 52.11-52.63
Wholesale trade	5110-5190	51.11-51.70
Transportation	6010-6309	60.10-63.40
Communication	6411-6420	64.11-64.20
Personal services		
Hotels and restaurants	5510-5520	55.11-55.52
Recreational and cultural services	9211-9249	92.11-92.72
Domestic services	9500	95.00
Other personal services	5020, 5260-5260, 7130 and 9301-9309	50.20, 52.71-52.74, 71.40 and 93.01-93.05
Social services		
Government proper	7511-7530 and 9900	75.11-75.30 and 99.00
Health services	8511-8520	85.11-85.20
Educational services	8010-8090	80.10-80.42
Miscellaneous social services	8531-9199	85.31-91.33

a) The United Nations' International Standard Industrial Classification of All Economic Activities [United Nations (1990)].
b) The European Union's General Industrial Classification of Economic Activities within the European Communities [EUROSTAT (1996)].

Three difficulties arise in implementing Elfring's industry classification that reduce international and intertemporal comparability. First, some countries use neither the ISIC nor the NACE. For example, Canada and the United States use the North American Industry Classification System (NAICS). These countries are handled on a case-by-case basis, working from the most detailed level of industrial sectors available. In all cases, these are detailed enough to allow industrial groupings to be specified in a manner that is largely consistent with ISIC-based definitions.

The periodic revision of industry classifications complicates the making of intertemporal comparisons. The ISIC Rev. 3 and the NACE Rev. 1 were developed in parallel in the late 1980s and phased in during the early 1990s in countries using these classifications. Thus, the data for most of the countries studied have a historical discontinuity sometime during the study period, with the exact date differing between countries (and between data sources within some countries). Approximate "crosswalks" are available for converting between successive version of these classifications, but they are not exact.

A final problem is that some of the survey data used in the chapter are only available at a more aggregated (*i.e.* "2-digit") level. This is the case for European Labour Force Survey data provided by EUROSTAT. When using these sources, it is not possible to separate out repair and real estate services that constitute final household consumption and, hence, some employment that ideally would be allocated to personal services is instead assigned to producer services. The less accurate mapping used is these cases is presented in Table 3.A.2.

Data sources

Table 3.A.3 identifies the sources of the data on employment by sector that are analysed in this chapter. With one exception, these data were provided to the OECD by national statistical offices and EUROSTAT. In the case of the United States, the OECD Secretariat did all calculations using microdata. The original industrial classification, which was used to group the data into these twenty-one sectors, is also indicated in Table 3.A.3.

Table 3.A.2. **Approximate mapping using 2-digit sectors for the European Union**

Sector description	NACE Rev. 1 codes	NACE 1970 codes
Agriculture, hunting and forestry	01, 02 and 05	01, 02 and 03
Mining and quarrying	10 to 14	11 to 15, 21 and 23
Manufacturing	15 to 37	22, 24 to 49
Electricity, gas and water supply	40 to 41	16, 17
Construction	45	50
Producer services		
Business and professional services	71 to 74	83, 84 and 94
Financial services	65 and 67	81
Insurance	66	82
Real estate	70	85
Distributive services		
Retail trade	50 and 52	64, 65 and 67
Wholesale trade	51	61 to 63
Transportation	60 to 63	71 to 77
Communication	64	79
Personal services		
Hotels and restaurants	55	66
Recreational and cultural services	92	97
Domestic services	95	9A
Other personal services	93	98
Social services		
Government proper	75 and 99	91 and 9B
Health services	85	95
Education services	80	93
Miscellaneous social services	90 to 91	92 and 96

Source: EUROSTAT (1996).

Table 3.A.3. Overview of data on employment by sector

Country	Data source	Identification of 21 economic sectors
Australia	Labour Force Survey.	All 21 sectors are identified using detailed Australian and New Zealand Standard Industrial Classification (ANZSIC) industries.
Canada	Labour Force Survey.	All 21 sectors are identified using detailed North American International Classification Standard (NAICS) industries.
Czech Republic	Employment and Household Survey.	All 21 sectors are identified using NACE Rev. 1.
Austria, Belgium, Denmark, France, Germany, Ireland, Luxembourg, Netherlands, Portugal, Spain, Sweden, United Kingdom	European Labour Force Survey, EUROSTAT.	All 21 sectors are identified using NACE 2-digit industries, with Rev. 1 being phased in at different times during the 1990s.
Italy	Labour Force Survey.	All 21 sectors are identified using NACE Rev. 1 2-digit industries.
Hungary	Labour Force Time Series 1993-1996.	All 21 sectors are identified using NACE Rev. 1 2-digit industries.
Japan	Labour Force Survey.	The 5 goods subsectors, along with total services and several of its components, are identified using groupings from the Standard Industrial Classification for Japan.
Korea	The Economically Active Population Survey.	The 5 goods subsectors, along with total services and several of its components, are identified using the ISIC Alphabetic codes (Rev. 3 introduced in 1992).
Mexico	National Employment Survey.	All 21 sectors are identified using ISIC Rev. 3.
New Zealand	Household Labour Force Survey (HLFS).	All 21 sectors are identified using detailed Australian and New Zealand Standard Industrial Classification (ANZSIC) industries.
Norway	Labour Force Survey.	All 21 sectors are identified using NACE Rev. 1.
Switzerland	Labour Force Survey (ESPA).	All 21 sectors are identified using NACE Rev. 1.
Turkey	Labour Force Survey.	The 5 goods subsectors, along with total services and several of its components, are identified using the ISIC Rev. 1.
United States	Current Population Survey (OECD calculations from outgoing rotation group, microdata file).	All 21 sectors are identified using detailed (three-digit) industry codes from the census of the population.

Annex 3.B

Definitions and Data Sources of the Explanatory Variables Used in Section IV

Institutional and policy variables

Earnings compression

Definition: This variable is measured as the ratio of the 10th to the 90th percentiles of the earnings distribution. Generally, these are gross earnings ratios, except for France. Earnings are either annual (*i.e.* Canada, Finland, France, the Netherlands, Spain, Sweden and Switzerland), monthly (*i.e.* Austria, the Czech Republic, Germany, Hungary, Italy, Japan, Korea and Poland), weekly (*i.e.* Australia, Belgium, Ireland, New Zealand, Portugal, the United Kingdom and the United States) or hourly (*i.e.* Norway). Normally the data refer to full-time full-year earnings, except for Austria, Denmark and Norway, which include all employees.

In principle, all years from 1984 to 1998 have been used. However, in a large number of cases only a subset of these years were available: Australia, from 1985 to 1995 and from 1997 to 1998; Austria: 1996; Belgium and Germany: from 1984 to 1995; Canada: from 1984 to 1994; the Czech Republic: 1996 and 1997; Denmark: from 1984 to 1990; Finland, France, Sweden: from 1984 to 1996; Hungary: from 1986 to 1998; Ireland: 1994; Italy: from 1986 to 1996; Japan, New Zealand, Poland: from 1984 to 1997; Korea: from 1984 to 1996; the Netherlands: 1984 to 1995; Norway: from 1984 to 1991; Portugal: from 1985 to 1993; Spain: 1995; Switzerland: from 1991 to 1998; the United Kingdom and the United States: from 1984 to 1998.

Source: OECD DEELSA Earnings Structure Database.

Size of the welfare state

Definition: This variable is defined as the sum of government expenditures on social services and education as a percentage of GDP, which therefore excludes cash transfers. Among the social services included are services for elderly and disabled people, family services, ALMPs, health and education. In general, these data are available from 1984 to 1995.

Sources: Except for educational expenditure, government consumption expenditures have been obtained from the OECD, Social Expenditure Database. The following years of data are available: Australia and Austria: 1985 and 1990 to 1995; Belgium: from 1984 to 1990; the Czech Republic: from 1990 to 1995; Denmark, Finland, Portugal, Spain, the United Kingdom and the United States: from 1984 to 1995; France and Mexico: from 1985 to 1995; Germany: from 1985 to 1993; Ireland: 1994 and 1995; Italy and Luxembourg: from 1987 to 1995; Japan and Korea: 1990 to 1995; the Netherlands: 1985 and 1988 to 1995; New Zealand: from 1986 to 1996; Norway: 1985 and from 1988 to 1995.

Educational expenditure was obtained from OECD (1999*d*, 2000*b*), Table B1.1*a*, first and eighth columns entitled "Direct public expenditure for educational institutions", which is only available for the years 1990, 1995 and 1997. Data for Belgium includes only the Flemish community.

Tax wedge

Definition: The tax wedge is measured as the sum of employees' and employers' social security contributions and personal income tax less transfer payments as a percentage of gross labour costs (gross wage earnings plus employers' social security contributions). Data are available for 1995 and 1997, and for all countries except Korea. Three different variables have been constructed using these data:

- *Average tax wedge*: The chosen family type is a two-earner married couple with two children whose combined earnings are one-third above the average production worker's (APW) earnings.
- *Relative tax wedge (version 1)*: Ratio of the tax wedge of a married couple with two children, whose combined earnings are 67 per cent above the APW's earnings divided by the tax wedge of a married couple with two children where one partner receives no earnings from work and the other partner receives the equivalent to the APW's earnings.
- *Relative tax wedge (version 2)*: Ratio of the tax wedge of a single person with no children whose earnings are equivalent to 67 per cent of the APW's earnings divided by the tax wedge of a single person with no children whose earnings are 67 per cent above the APW's earnings.

Sources: OECD Analytical Database (Economics Department), as published in OECD (1997*b*), Table 5, page 384, and OECD (1998*b*), Table 7, page 37.

EPL

Definition: This variable is a summary index of EPL strictness that ranges from 0 to 6 and is available for 27 OECD countries in the late 1980s and in the late 1990s. As described in OECD (1999*e*), Chapter 2, this summary index weights provisions for regular and temporary employment equally, but legislation concerning collective dismissals is not included.

Source: OECD (1999*e*), Chapter 2, Table 2.5 (version 1).

Product market regulation

Definition: This is a summary indicator which has been obtained by means of factor analysis. The taxonomy of regulations included in this indicator can be divided in four groups: state control; barriers to entrepreneurship; explicit barriers to trade and investment; and other regulatory barriers. This variable is available for all OECD countries except Iceland and Luxembourg.

Source: Nicoletti *et al.* (2000), Table A3.7, p. 80.

Co-ordination of collective bargaining

Definition: This index variable ranges from 0 to 2.5, according to the degree of co-ordination in bargaining [see OECD (1997*a*), Chapter 3, for more details]. This measure reflects both union and employer co-ordination and is available for the years 1990 and 1994 for all OECD countries except the Czech Republic, Finland, Greece, Hungary, Ireland, Korea, Luxembourg, Mexico, Poland and Turkey.

Sources: OECD DEELSA database. Data have also been published in OECD (1997*a*), Chapter 3, Table 3.3.

Centralisation of collective bargaining

Definition: This index ranges from 0 to 2.5, according to the prevailing bargaining level [see OECD (1997*a*), Chapter 3 for more details]. The measure reflects both union and employer centralisation and is available for the years 1990 and 1994 for all OECD countries except the Czech Republic, Finland, Greece, Hungary, Ireland, Korea, Luxembourg, Mexico, Poland and Turkey.

Sources: OECD DEELSA database. Data have also been published in OECD (1997*a*), Chapter 3, Table 3.3.

Economic and demographic variables

Real GDP per capita in PPP

Definition: Gross domestic product expressed in thousands of US dollars using PPPs divided by the population. This variable is available for all countries except Turkey.

Source: OECD Analytical Database (Economics Department).

Relative price of services

Definition: PPP for all services divided by PPP for all goods. This variable is available for all countries except Korea.

Sources: OECD (1999*c*), Table 2, page 82.

Investment in hardware and software

Definition: Physical investment in computer hardware and software as a percentage of gross domestic product. This variable is available for years 1985 and 1995 for all OECD countries except the Czech Republic, Hungary, Korea, Luxembourg and Poland.

Sources: OECD (1998*c*), Annex Table 2.5, page 251.

Female participation

Definition: Female labour force participation rate for the age group 15-64. This variable is available for all years from 1984 to 1998 and for all OECD countries except Korea.

Sources: OECD Analytical Database (Economics Department).

Ageing population

Definition: Share of persons older than 65 in the total population. This variable is available for all years from 1984 to 1998 and for all OECD countries.

Sources: OECD Analytical Database (Economics Department).

Annex 3.C

Employment Shares in Services: Detailed Tables

Table 3.C.1 provides detailed information on the evolution of the share of service employment during 1984-1998 and Table 3.C.2 provides estimates of sectoral contributions to employment growth during 1986-1998.

Table 3.C.1. **Evolution of the share of service employment**[a]

Levels in 1998 (in percentages) and percentage-point changes between 1984, 1989, 1994 and 1998

Panel A: Total

	All services				Producer services				Distributive services				Personal services				Social services			
	Changes			Level	Changes			Level	Changes			Level	Changes			Level	Changes			Level
	1984-1989	1989-1994	1994-1998	1998	1984-1989	1989-1994	1994-1998	1998	1984-1989	1989-1994	1994-1998	1998	1984-1989	1989-1994	1994-1998	1998	1984-1989	1989-1994	1994-1998	1998
Australia	0.3	3.2	1.9	73.3	0.6	0.7	1.8	14.7	0.2	–0.3	–0.2	24.6	0.4	1.2	0.5	11.8	–0.9	1.6	–0.1	22.2
Austria	..	..	3.4	63.8	..	..	1.4	10.5	..	..	0.2	22.4	..	..	0.8	9.2	..	..	1.1	21.7
Belgium	1.1	3.0	2.3	70.2	1.3	1.6	1.8	11.7	–1.0	–0.5	–0.2	21.8	–0.2	0.9	0.6	6.8	0.9	1.0	0.2	29.8
Canada	0.1	3.4	–0.4	69.9	0.7	1.4	1.4	16.5	–0.2	–0.6	–0.2	19.4	0.0	0.7	0.1	11.7	–0.3	1.9	–1.6	22.3
Czech Republic	..	..	2.8	53.1	..	..	0.6	7.2	..	..	1.5	19.7	..	..	0.7	7.9	..	..	–0.1	18.2
Denmark	0.0	1.7	1.6	69.5	2.2	1.3	0.1	11.4	–0.4	–0.4	0.6	21.1	–0.4	0.4	0.0	5.8	–1.4	0.3	0.8	31.2
Finland	..	..	–0.3	64.2	..	..	0.9	11.3	..	..	0.1	18.8	..	..	0.5	6.2	..	..	–1.8	28.0
France	3.3	5.9	1.3	69.2	1.1	2.4	0.1	11.9	–0.4	0.0	–0.2	19.9	0.4	1.0	0.5	8.3	2.2	2.6	0.8	29.2
Germany	1.8	..	..	62.6	1.4	0.7	1.7	10.9	–0.9	..	..	19.9	–0.1	..	..	7.1	1.4	..	..	24.8
Greece	4.4	6.5	3.6	58.8	1.0	1.4	1.2	7.4	0.5	1.8	0.5	23.3	0.4	1.5	1.4	10.4	2.5	1.8	0.5	17.7
Hungary	..	..	0.1	57.6	..	..	1.4	6.7	..	..	0.0	21.3	..	..	0.1	7.3	..	..	–1.4	22.3
Ireland	2.8	3.6	2.9	61.7	0.8	0.3	2.7	11.5	0.1	–1.0	1.1	19.9	1.5	1.8	0.5	10.7	0.5	2.5	–1.4	19.6
Italy	..	..	2.2	60.8	..	..	1.7	9.3	..	..	0.0	21.6	..	..	0.3	8.0	..	..	0.3	22.0
Japan	1.9	2.1	2.2	59.4	1.9	1.7	1.5	22.6	0.1	–0.2	0.3	26.8	..	..	..	..	..	..	..	..
Korea	0.5	16.7	6.7	59.7	1.4	1.8	1.8	9.3	–0.9	–6.8	1.2	24.9	..	..	..	..	..	..	..	..
Luxembourg	4.8	2.5	5.7	75.1	3.1	2.4	2.8	17.8	0.5	–1.8	–0.8	19.7	–0.7	2.3	–1.4	8.4	1.9	–0.4	5.1	29.3
Mexico	..	..	–0.1	55.6	..	..	0.0	3.9	..	..	4.7	22.0	..	..	0.2	17.5	..	..	–4.9	12.2
Netherlands	2.4	2.9	–0.8	70.2	1.6	1.8	1.3	14.3	0.1	0.6	–0.7	22.0	0.7	0.5	–0.4	6.2	0.0	0.0	–1.0	27.6
New Zealand	..	..	0.8	67.4	..	..	2.5	13.5	..	..	–1.0	22.1	..	..	0.6	9.8	..	..	–1.3	22.0
Norway	..	..	1.1	72.7	..	..	1.0	10.6	..	..	0.4	22.1	..	..	–0.2	7.2	..	..	–0.2	32.8
Portugal	1.6	9.5	–5.3	50.2	0.2	3.5	–1.4	5.5	–0.1	1.4	–2.0	17.7	0.4	1.7	0.8	10.7	1.0	3.0	–2.7	16.2
Spain	2.5	6.1	1.7	61.7	0.9	2.3	1.3	9.0	0.5	0.5	–0.5	22.4	0.8	0.3	0.1	11.8	0.2	3.0	0.9	18.5
Sweden	..	..	–0.1	70.9	..	..	0.8	12.2	..	..	0.4	19.4	..	..	0.1	5.9	..	..	–1.4	33.4
Switzerland	..	2.4	3.1	69.2	..	0.3	1.8	15.3	..	0.6	–0.1	19.6	..	–0.5	–1.4	10.0	..	2.1	2.8	24.3
Turkey	..	–2.6	1.1	23.5	..	–2.2	–0.1	2.8	..	–0.4	1.2	20.8	..	..	..	..	..	..	..	..
United Kingdom	3.1	5.1	1.6	71.4	2.2	2.4	1.2	14.7	0.6	–0.5	–0.2	21.8	–0.1	–0.1	0.5	9.2	0.3	3.2	0.2	25.7
United States	2.4	2.5	0.7	73.8	1.7	0.2	0.9	15.8	–0.2	–0.1	0.0	21.2	0.0	0.5	–0.1	12.1	0.8	1.8	–0.1	24.8
OECD average	**2.1**	**4.4**	**1.5**	**63.5**	**1.4**	**1.3**	**1.2**	**11.4**	**–0.1**	**–0.5**	**0.2**	**21.3**	**0.2**	**0.9**	**0.2**	**9.2**	**0.7**	**1.7**	**–0.2**	**24.0**

Table 3.C.1. **Evolution of the share of service employment**[a] *(cont.)*

Levels in 1998 (in percentages) and percentage-point changes between 1984, 1989, 1994 and 1998

Panel B: Men

	All services				Producer services				Distributive services				Personal services				Social services			
	Changes			Level	Changes			Level	Changes			Level	Changes			Level	Changes			Level
	1984-1989	1989-1994	1994-1998	1998	1984-1989	1989-1994	1994-1998	1998	1984-1989	1989-1994	1994-1998	1998	1984-1989	1989-1994	1994-1998	1998	1984-1989	1989-1994	1994-1998	1998
Australia	–0.2	3.5	1.8	63.5	0.4	0.9	2.1	13.9	–0.2	0.2	–0.1	25.0	0.5	1.3	0.7	10.9	–0.9	1.1	–0.9	13.8
Austria	..	..	2.4	52.3	..	..	1.4	9.2	..	..	0.3	22.1	..	..	0.8	6.3	..	..	0.0	14.8
Belgium	–0.3	2.1	2.0	59.3	1.3	1.4	2.1	11.7	–0.3	0.2	–0.6	23.0	0.2	0.7	0.6	5.4	–1.5	–0.2	–0.2	19.2
Canada	–0.2	3.6	–0.5	59.7	0.5	1.9	1.6	15.0	–0.1	–0.4	–0.4	21.4	0.0	1.2	–0.1	9.5	–0.6	1.0	–1.7	13.7
Czech Republic	..	..	2.0	42.3	..	..	0.5	6.3	..	..	2.0	18.0	..	..	0.3	7.0	..	..	–0.8	10.9
Denmark	0.1	1.9	1.8	57.8	2.2	1.3	0.4	11.7	–0.3	–0.1	0.5	24.9	–0.1	0.0	0.8	4.4	–1.8	0.6	0.0	16.8
Finland	..	..	–0.5	49.9	..	..	1.2	11.3	..	..	1.4	22.9	..	..	0.4	3.8	..	..	–3.6	11.9
France	2.7	6.5	0.7	58.4	1.2	2.5	0.0	11.0	–0.3	0.5	–0.1	21.9	0.3	0.8	0.2	5.5	1.5	2.7	0.5	20.1
Germany	1.1	..	..	50.2	1.3	0.8	1.4	9.9	–1.1	..	..	18.9	0.2	..	..	5.0	0.7	..	..	16.4
Greece	3.3	4.3	1.8	53.7	1.0	1.3	0.6	6.5	0.0	1.0	0.4	25.4	0.4	0.9	0.9	8.3	1.8	1.0	–0.2	13.5
Hungary	..	..	–0.7	47.0	..	..	1.7	5.9	..	..	0.2	22.0	..	..	–0.4	6.2	..	..	–2.2	12.9
Ireland	2.6	1.8	2.6	49.5	0.6	0.1	2.2	9.5	0.8	–0.8	1.0	20.3	0.9	1.6	0.1	7.4	0.3	0.9	–0.7	12.3
Italy	..	..	1.7	54.1	..	..	1.6	9.1	..	..	0.1	23.0	..	..	0.1	6.1	..	..	–0.1	16.0
Japan	1.1	0.5	1.3	53.8	1.2	1.0	1.3	18.4	0.0	–0.9	–0.2	26.2	..	..	..	..	..	..	..	..
Korea	1.6	13.7	6.4	54.8	1.4	1.1	2.3	9.5	0.1	–3.5	1.7	26.8	..	..	..	..	..	..	..	..
Luxembourg	4.8	2.4	7.3	65.4	2.5	2.1	3.9	16.4	0.8	–1.5	0.0	20.0	0.1	1.4	–0.5	5.3	1.4	0.4	3.9	23.7
Mexico	..	..	0.1	47.7	..	..	–0.1	3.8	..	..	3.7	20.3	..	..	0.3	14.3	..	..	–3.8	9.2
Netherlands	1.8	3.1	0.7	61.6	2.2	1.4	1.5	14.6	0.2	0.7	–0.1	23.5	0.2	0.6	–0.3	4.6	–0.7	0.5	–0.5	19.0
New Zealand	..	..	0.1	56.2	..	..	2.8	12.8	..	..	–1.3	22.7	..	..	0.9	7.9	..	..	–2.3	12.7
Norway	..	..	0.9	59.7	..	..	1.2	11.4	..	..	0.7	23.6	..	..	0.2	5.9	..	..	–1.1	18.8
Portugal	0.8	7.7	–6.9	42.3	0.2	3.7	–2.2	5.6	–0.1	1.9	–2.8	20.6	0.3	1.2	–0.2	5.5	0.4	0.8	–1.7	10.7
Spain	1.8	5.2	0.4	51.3	0.7	1.2	1.1	8.0	0.5	0.3	–0.6	22.3	0.7	0.9	–0.2	8.0	–0.1	2.8	0.1	13.0
Sweden	..	..	1.3	57.5	..	..	1.0	13.4	..	..	1.0	23.4	..	..	–0.2	4.8	..	..	–0.6	15.9
Switzerland	..	2.5	1.3	59.1	..	1.2	2.1	16.7	..	0.4	–0.1	18.7	..	–0.5	–1.6	6.9	..	1.4	1.0	16.8
Turkey	..	–5.2	0.0	29.7	..	–4.0	–0.2	2.7	..	–1.2	0.2	26.9	..	..	..	..	..	..	..	..
United Kingdom	2.9	5.7	1.7	59.6	1.9	2.9	1.7	14.6	0.6	0.4	–0.2	23.1	0.5	0.7	0.6	6.8	–0.2	1.7	–0.3	15.1
United States	2.2	2.9	0.4	63.4	1.3	0.9	1.0	14.8	0.1	0.2	0.0	23.1	0.5	1.3	–0.1	10.6	0.3	0.5	–0.5	14.9
OECD average	**1.6**	**3.7**	**1.2**	**54.1**	**1.3**	**1.2**	**1.3**	**10.9**	**0.0**	**–0.1**	**0.3**	**22.6**	**0.3**	**0.9**	**0.2**	**6.9**	**0.0**	**1.1**	**–0.7**	**15.1**

Table 3.C.1. **Evolution of the share of service employment**[a] *(cont.)*

Levels in 1998 (in percentages) and percentage-point changes between 1984, 1989, 1994 and 1998

Panel C: Women

	All services				Producer services				Distributive services				Personal services				Social services			
	Changes			Level	Changes			Level	Changes			Level	Changes			Level	Changes			Level
	1984-1989	1989-1994	1994-1998	1998	1984-1989	1989-1994	1994-1998	1998	1984-1989	1989-1994	1994-1998	1998	1984-1989	1989-1994	1994-1998	1998	1984-1989	1989-1994	1994-1998	1998
Australia	0.4	1.9	1.5	86.0	0.8	0.3	1.3	15.7	0.7	–1.0	–0.4	24.2	0.2	1.0	0.1	13.0	–1.3	1.6	0.5	33.2
Austria	..	..	4.2	78.5	..	..	1.3	12.2	..	..	0.1	22.8	..	..	0.5	12.9	..	..	2.3	30.5
Belgium	1.9	2.2	2.0	85.6	1.2	1.9	1.2	11.8	–2.0	–1.4	0.5	20.1	–1.2	0.9	0.3	8.9	3.9	0.9	–0.1	44.8
Canada	0.2	2.5	–0.3	82.2	0.9	0.7	1.0	18.2	–0.3	–0.7	0.0	17.1	–0.2	0.0	0.3	14.3	–0.1	2.5	–1.7	32.5
Czech Republic	..	..	4.2	67.0	..	..	0.7	8.3	..	..	1.0	21.9	..	..	1.4	9.1	..	..	1.1	27.6
Denmark	–0.5	1.4	1.3	83.3	2.2	1.3	–0.3	11.1	–0.5	–0.7	0.8	16.7	–0.9	0.9	–0.9	7.4	–1.3	–0.1	1.7	48.1
Finland	..	..	0.3	80.0	..	..	0.6	11.4	..	..	–1.6	14.3	..	..	0.6	8.7	..	..	0.6	45.6
France	3.5	4.3	1.7	82.5	0.9	2.1	0.2	13.0	–0.3	–0.5	–0.2	17.4	0.3	1.0	0.8	11.7	2.6	1.7	0.9	40.4
Germany	2.5	..	..	78.7	1.4	0.4	1.9	12.2	–0.6	..	..	21.1	–0.6	..	..	9.7	2.3	..	..	35.7
Greece	6.3	10.5	6.3	67.2	1.0	1.4	2.2	9.0	1.9	3.3	0.8	19.7	0.1	2.5	2.1	13.9	3.4	3.3	1.1	24.7
Hungary	..	..	1.5	70.3	..	..	1.1	7.7	..	..	–0.3	20.4	..	..	0.7	8.6	..	..	0.0	33.6
Ireland	1.1	3.0	1.6	80.2	1.0	0.1	3.2	14.5	–1.5	–1.1	1.4	19.4	2.1	1.2	0.6	15.6	–0.5	2.8	–3.7	30.7
Italy	..	..	2.6	72.6	..	..	1.8	9.8	..	..	–0.2	19.1	..	..	0.4	11.3	..	..	0.6	32.4
Japan	3.0	4.6	3.7	67.9	2.7	2.9	1.8	29.0	0.4	0.7	1.0	27.7	..	..	..	..	..	..	..	..
Korea	–1.3	21.2	7.2	66.8	1.4	2.8	1.0	9.0	–2.6	–11.6	0.5	22.2	..	..	..	..	..	..	..	..
Luxembourg	3.5	0.7	2.5	91.2	4.1	2.6	0.9	20.1	–0.3	–2.5	–2.3	19.1	–2.7	3.2	–3.0	13.5	2.3	–2.7	6.9	38.5
Mexico	..	..	–1.1	71.2	..	..	0.1	4.2	..	..	6.6	25.3	..	..	–0.3	23.6	..	..	–7.5	18.1
Netherlands	1.1	0.1	–3.4	82.0	0.5	2.4	0.9	14.0	0.1	0.6	–1.5	20.0	1.5	0.0	–0.7	8.4	–0.9	–2.9	–2.2	39.7
New Zealand	..	..	1.1	81.2	..	..	2.1	14.4	..	..	–0.7	21.5	..	..	0.1	11.9	..	..	–0.4	33.4
Norway	..	..	1.2	87.7	..	..	0.8	9.5	..	..	0.2	20.3	..	..	–0.7	8.7	..	..	0.9	49.1
Portugal	2.3	11.0	–3.3	59.8	0.4	3.2	–0.5	5.5	0.3	1.2	–0.9	14.2	0.1	1.7	2.1	17.1	1.5	4.9	–4.0	22.9
Spain	2.6	6.0	2.9	80.7	1.4	4.4	1.4	10.9	0.6	0.9	–0.5	22.6	0.4	–1.8	0.1	18.6	0.2	2.4	1.9	28.5
Sweden	..	..	–1.0	85.8	..	..	0.5	10.8	..	..	–0.4	15.0	..	..	0.5	7.1	..	..	–1.6	52.9
Switzerland	..	2.2	4.8	81.9	..	–0.9	1.5	13.4	..	0.9	–0.1	20.8	..	–0.6	–1.4	13.9	..	2.8	4.8	33.8
Turkey	..	3.1	1.5	8.6	..	1.6	0.3	2.8	..	1.4	1.2	5.8	..	..	..	..	..	..	..	..
United Kingdom	2.5	3.3	1.7	85.9	2.6	1.8	0.5	14.7	0.7	–1.5	–0.2	20.2	–1.1	–1.3	0.5	12.2	0.3	4.3	0.9	38.8
United States	1.8	1.7	0.9	86.0	2.1	–0.6	0.7	17.1	–0.4	–0.3	0.0	18.9	–0.9	–0.4	–0.1	13.8	0.9	3.0	0.2	36.2
OECD average	**1.9**	**4.7**	**1.8**	**76.0**	**1.5**	**1.6**	**1.1**	**12.2**	**–0.2**	**–0.7**	**0.2**	**19.6**	**–0.2**	**0.6**	**0.2**	**12.3**	**0.9**	**1.8**	**0.1**	**35.5**

.. Data not available.
a) See note *a)* to Chart 3.1.
Source: See Annex 3.A.

Table 3.C.2. Sectoral contribution to annualised employment growth, 1986-1998[a]

	Australia	Belgium	Canada	Denmark	France	Greece	Ireland	Japan	Luxembourg	Netherlands	Portugal	Spain	United Kingdom	United States	Total OECD[b]
Agriculture	**0.01**	**–0.06**	**–0.03**	**–0.17**	**–0.25**	**–0.74**	**–0.29**	**–0.25**	**–0.03**	**–0.08**	**–0.49**	**–0.55**	**–0.02**	**0.00**	**–0.09**
Industry	**0.00**	**–0.18**	**0.16**	**–0.09**	**–0.31**	**–0.07**	**0.87**	**0.11**	**–0.41**	**0.07**	**0.58**	**0.43**	**–0.35**	**0.04**	**–0.01**
Mining and quarrying	–0.02	–0.04	–0.01	–0.01	–0.05	–0.03	–0.03	–0.01	0.01	–0.08	–0.02	–0.04	–0.09	–0.02	–0.03
Manufacturing	–0.06	–0.26	0.13	–0.08	–0.21	–0.15	0.61	–0.11	–0.58	0.14	0.25	0.09	–0.27	–0.04	–0.06
Electricity, gas and water supply	–0.08	0.00	0.00	0.01	–0.01	0.00	–0.02	0.01	0.01	–0.01	–0.01	0.00	–0.04	0.00	–0.01
Construction	0.15	0.12	0.03	–0.01	–0.04	0.11	0.32	0.22	0.15	0.02	0.35	0.38	0.06	0.10	0.10
Producer services	**0.56**	**0.46**	**0.54**	**0.24**	**0.33**	**0.34**	**0.70**	**..**	**0.85**	**0.69**	**0.25**	**0.54**	**0.53**	**0.42**	**0.45**
Business and professional services	0.52	0.33	0.49	0.20	0.22	0.26	0.48	..	0.41	0.45	0.23	0.47	0.32	0.33	0.35
Financial services	0.01	0.07	0.04	–0.01	0.03	0.05	0.14	0.06[c]	0.36	0.10	–0.01	0.01	0.19	0.04	0.05
Insurance	–0.01	0.02	0.01	0.00	0.00	0.03	0.03	..	0.05	0.05	0.01	0.03	–0.05	0.03	0.01
Real estate	0.03	0.03	0.01	0.05	0.08	–	0.04	..	0.03	–	0.02	0.04	0.08	0.02	0.04
Distributive services	**0.42**	**0.05**	**0.17**	**0.22**	**0.09**	**0.47**	**0.70**	**0.25**	**–0.08**	**0.46**	**0.14**	**0.46**	**0.22**	**0.32**	**0.29**
Retail trade	0.31	0.08	0.08	0.14	0.01	0.38	0.43	0.15	–0.05	0.24	0.12	0.21	0.12	0.16	0.15
Wholesale trade	0.08	–0.05	0.01	–0.08	0.04	0.06	0.01	0.01	–0.12	0.09	0.02	0.13	0.00	0.05	0.04
Transportation	0.03	0.00	0.04	–0.03	0.06	0.00	0.16	0.09[d]	0.04	0.10	0.00	0.08	0.09	0.10	0.08
Communication	0.01	0.03	0.05	–	–0.02	0.01	0.10	..	0.05	0.03	–0.01	0.03	0.01	0.01	0.01
Personal services	**0.41**	**0.11**	**0.23**	**0.07**	**0.17**	**0.34**	**0.65**	**..**	**0.12**	**0.16**	**0.36**	**0.33**	**0.15**	**0.22**	**0.22**
Hotels and restaurants	0.19	0.07	0.14	0.05	0.03	0.23	0.42	..	0.03	0.16	0.24	0.22	0.06	0.11	0.11
Recreational and cultural services	0.09	0.05	0.06	0.04	0.06	0.05	0.16	..	0.03	0.02	0.05	0.09	0.08	0.11	0.09
Domestic services	–0.01	0.00	–0.01	–0.03	0.09	0.06	0.03	..	0.06	–0.02	0.04	–0.01	–0.01	–0.03	–0.01
Other personal services	0.13	–0.01	0.04	0.00	–0.01	0.01	0.05	..	0.00	0.00	0.03	0.03	0.02	0.04	0.03
Social services	**0.47**	**0.42**	**0.32**	**0.09**	**0.46**	**0.48**	**0.72**	**..**	**0.84**	**0.71**	**0.29**	**0.70**	**0.48**	**0.60**	**0.53**
Government proper	0.02	0.07	0.01	–0.09	0.13	0.10	0.11	..	0.42	0.23	–0.05	0.26	0.11	0.06	0.08
Health services	0.13	0.58	0.11	0.92	0.40	0.19	0.40	..	0.37	0.89	0.19	0.27	0.52	0.25	0.31
Educational services	0.15	0.12	0.08	–0.15	0.12	0.22	0.25	..	0.20	0.08	0.15	0.22	0.11	0.17	0.14
Miscellaneous social services	0.17	–0.35	0.12	–0.60	–0.19	–0.04	–0.04	..	–0.14	–0.49	–0.01	–0.05	–0.25	0.12	0.00
Total services	**1.86**	**1.05**	**1.27**	**0.61**	**1.06**	**1.63**	**2.77**	**1.01**	**1.73**	**2.03**	**1.04**	**2.02**	**1.38**	**1.56**	**1.48**
Non classified[e]	0.00	0.00	0.00	–0.22	–0.03	0.00	0.03	0.00	–0.08	0.43	–0.01	–0.01	–0.10	0.00	–0.01
TOTAL	**1.86**	**0.80**	**1.39**	**0.13**	**0.46**	**0.82**	**3.37**	**0.87**	**1.20**	**2.45**	**1.11**	**1.89**	**0.91**	**1.60**	**1.38**

.. Data not available.

a) For Australia, Canada and the Netherlands, the annualised employment growth has been calculated for the period 1987-1998.

b) "Total OECD" refers to the sectoral contribution to annualised employment growth in the 14 countries considered as a whole.

c) Includes the financial, insurance and the real estate services (FIRE).

d) Includes transport and communication services.

e) The "non classified" refers to employed people who could not be assigned to a specific sector.

Source: See Annex 3.A.

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Chapter 4

ELIGIBILITY CRITERIA FOR UNEMPLOYMENT BENEFITS[1]

Summary

In simple models, eligibility criteria which make the payment of unemployment benefits conditional upon job search and related behaviour can offset, or even reverse, the disincentive effects which arise when benefits are paid without such conditions. The main eligibility criteria relating to labour market behaviour are described here on the basis of legislation, statistics and other material relating to about half the Member countries of the OECD. For benefit purposes, legislation defines when loss of work has occurred, valid reasons for quits, availability for work, suitable work, obligations to enter labour market programmes, requirements for reporting independent steps of job search and requirements to co-operate with the Public Employment Service (PES) in such matters as calls to interview and specific instructions from employment counsellors. Failure to attend an interview or comply with requirements can lead in many cases to general ineligibility for benefit: but following quit without a valid reason, refusal of suitable work and labour market programmes, and in some other situations, legislation usually specifies a sanction in the sense of a benefit stop of a defined duration, which varies from one week to the entire remaining benefit period.

The recorded incidence of benefit sanctions varies greatly across countries. In general, the implementation of eligibility criteria is influenced by the institutional and administrative structure of the PES; management guidelines for employment counsellors concerning eligibility checks and sanctions, and the practical relevance of legislation and associated guidelines to this activity; the use of particular PES procedures, such as direct referrals of beneficiaries to vacant jobs and monitoring of job-seekers' independent steps of job search; and the frequency, timing and content of various types of PES intervention in the unemployment spells, such as intensive interviews, individual action plans procedures, and referrals to short-term courses or long-term job creation programmes. With good management and clear information, a moderate incidence of sanctions may suffice to enforce eligibility criteria.

Some studies have reported that interventions in unemployment spells under the authority of benefit legislation (such as intensive interviews), and also the direct experience of a benefit sanction, have a fairly large impact on individual rates of exit from registered unemployment. At the aggregate level, the European countries in which unemployment fell most sharply in the 1990s have markedly tightened implementation of benefit eligibility criteria. Tighter implementation, especially when a broad range of activation measures are involved, has contributed to the falls in unemployment. At the same time, a general improvement in labour market conditions and the perceived success of the initial labour market policy reforms have encouraged further steps in the same direction.

Introduction

Scant attention in economic theory has traditionally been devoted to the labour market eligibility criteria for unemployment benefits. Instead, most analysis has focused on the level and duration of benefit payments. In general, economic models interpret benefits as a subsidy paid conditional on a state of non-employment or of unemployment, and predict that benefits will increase the quantity of non-employment or unemployment.[2]

Real-world systems in principle only pay benefit to people who meet *both* entitlement and eligibility conditions. "Entitlement" conditions restrict benefits to people who either, in the case of fixed-duration unemployment insurance (UI) benefits, have a sufficient record of contributions from work or an assimilated status and have been

unemployed for a limited duration or, in the case of assistance-type unemployment benefits, have low total income. "Eligibility" conditions, on the other hand, restrict unemployment benefit to people who:

- are unemployed roughly in the sense of the ILO definition of unemployment, *i.e.* not only out of work, but also able to enter work at short notice and undertaking active steps to find work; and
- meet administrative requirements, such as applying for the benefit with the necessary documentation, and attending interviews with employment counsellors and applying for vacancies as directed by the Public Employment Service (PES).

This chapter considers only the impact of *eligibility* conditions on unemployment. A first section considers how eligibility conditions in theory affect the level of unemployment. Four following sections describe some of the main eligibility criteria as laid out in legislation, summarise provisions for benefit sanctions, present statistics on the actual incidence of benefit sanctions and consider the problem of constructing a general indicator or ranking for the stance of benefit eligibility criteria in different countries. Further sections summarise some empirical evaluations of the impact of eligibility criteria and describe organisational issues in the implementation of eligibility criteria.

Main findings

In simple models, eligibility conditions concerning job search and related behaviour are able to offset and even reverse the disincentive effects on the level of unemployment which arise when benefits are paid without any such conditions. This chapter investigates the empirical situation further on the basis of information supplied by 12 OECD countries which have volunteered to participate in an OECD review of the subject, supplemented with partial information relating to some further countries.

Among the main topics covered by eligibility criteria are:

- The definition of loss of work and availability for work: factors such as severance pay, a seasonal pattern of work, household production, voluntary work, and uncertainties concerning child-care arrangements may affect eligibility.
- Valid reasons for quits: job-leaving leads to a benefit sanction or delayed entitlement to benefit, unless it is justified by changes in work conditions, transport conditions or household circumstances.
- The definition of suitable work: typically, refusal of work, failure to attend interviews and actions that discourage the employer from making a job offer are assimilated, but refusal may be justified when the work involves a change of occupation, lower earnings, lengthy commuting times, geographical mobility, conflict with principles of conscience, etc.
- Obligations to enter approved labour market programmes.
- Independent job search: many countries have a general requirement to actively seek work, and some require the beneficiary to provide proof of job applications and other acts of job search.
- Contacts with the PES: to remain eligible, jobseekers may have to sign on at intervals, provide relevant documents and information, participate in assessments, attend interviews and collective information sessions, and follow specific instructions from employment counsellors.
- Variation of requirements: older workers are often partially or wholly exempted from many specific requirements.

Failure to comply with eligibility requirements has consequences for benefits:

- When a person has left work, failed to provide proof of independent job search, or failed to attend an interview with the PES, a defined sanction is applied in some countries, but benefit is refused on general eligibility grounds in others.
- A sanction, in the sense of a benefit stop of defined duration, is usually imposed following refusal of suitable work: the sanction for a first refusal varies from loss of one week of benefit to exclusion for the remainder of the benefit spell.
- Within the limited sample of countries here, 2 to 14 per cent of people entering benefits suffer a sanction for quitting the previous job, while sanctions imposed per year during ongoing benefit spells vary from 1 to 50 per cent of the average stock of beneficiaries.

National practices vary enormously and there is no simple way to classify countries in terms of "strictness". This is because countries are often strict in relation to some of the specific eligibility criteria but not others, because where formal rules appear strict it is possible that they are not being systematically applied, and because sanctions are not necessarily a reliable indicator of effective implementation. The main types of available evidence concerning the impact of eligibility criteria relate to:

- The impact of compulsory interventions (*e.g.* interviews and referrals to ALMPs) on hazard rates (*e.g.* instantaneous or monthly rates of exit from

unemployment or entry to employment) of all individuals subject to the intervention.

- The impact of benefit sanctions on the hazard rates of individuals subject to the sanction.
- The correlation of regional or national differences in eligibility criteria, or changes in eligibility criteria, with regional or cross-country aggregate outcomes.

Each approach indicates a fairly large behavioural impact, but the formal research literature remains relatively thin.

I. Theoretically expected effects from benefit eligibility conditions

Benefit systems have various aims and effects: insurance-type unemployment benefits provide insurance and improve equity in the face of unpredictable job loss; assistance-type benefits are, for adults of working age, often the main component in a minimum income system which reduces the incidence of severe poverty; in either case, benefits may support job search and improve the quality of job matches. Eligibility criteria will influence such objectives as the insurance principle, poverty and the quality of job matches. Nevertheless, this chapter focuses mainly on them as a device for offsetting disincentive effects and reducing unemployment.

The enforcement of eligibility criteria may have a larger impact on behaviour than variations in replacement rates and effective marginal tax rates do, because the income implications for the individual are larger: when a person is found to be ineligible for unemployment benefits, his or her replacement rate falls to zero. For most unemployed with benefits, the eligibility criteria approximate roughly to a legal requirement that, if the person is able to enter work, he or she must do so. Enforcement of such a requirement will have a greater impact than any marginal adjustment to the financial incentives to enter work. For a more detailed theoretical analysis, however, it is useful to view the impact of benefit eligibility conditions on unemployment as the sum of several distinct "effects", called here the "exclusion", "behavioural", "disutility" and "entry" effects.

"Exclusion" effects arise due to the fact that certain situations which are, in principle, beyond the control of the person (within the current spell of worklessness) are declared ineligible for benefit. When the person is clearly unable to work, benefit ineligibility has no obvious incentive impact. Often (*e.g.* in cases of sickness and disability) the people concerned are able to transfer to a more appropriate benefit. In other cases (*e.g.* people with caring responsibilities), exclusion from benefit may result in a net income loss for the people concerned and a net saving for the public purse. In other cases, eligibility conditions exclude from benefit groups of people who have some non-zero chance of entering work (*e.g.* people with a contract to resume a seasonal job later in the year or people over the standard retirement age). Exclusion of these people reduces the likely disincentive impact of the benefit system simply because overall benefit coverage is reduced. Exclusion clauses may target groups of people whose behaviour is thought to be particularly sensitive to benefit disincentives, but this is not the only principle followed.[3]

Eligibility is also conditional on behaviour that is supposed to increase the chance of finding work. For example, benefit is restricted to people who are available to start work at short notice, who provide proof of their independent job search (*e.g.* job applications), who do not too easily reject job offers on grounds of wages, working hours, places of work and occupation, and who attend interviews and training courses as required by the PES. These behavioural requirements could affect unemployment in three ways, *via*:

- A direct "behavioural" effect. The specific behaviour that is encouraged, such as being ready to start work at short notice, directly increases the chance of finding work.
- A "disutility effect". Compliance with the behavioural requirements involves some disutility. This in itself encourages a more intense search for work.
- An "entry" effect. If the behavioural requirements are onerous (if the disutility effect is sufficiently large), some people will opt to drop their benefit claim rather than comply with the requirements.

Some theoretical predictions can be made about the size of these three effects:

- Starting from an initial situation where unemployment benefit is paid with no behavioural requirement and individuals are choosing a level of job search that maximises expected utility, a small increase in job-search intensity (as compared to the utility-maximising point) involves only a second-order reduction in disutility. A mild job-search requirement may, therefore, have a moderately significant "behavioural" effect but small "disutility" and "entry" effects. Only in the case of relatively onerous job-search obligations are disutility and entry effects expected to become significant.
- An administrative requirement that the unemployed must search for work as intensively as they would have in the absence of benefits has no "entry" effect. This is because a person who drops a claim so as to

avoid requirements will search as intensively as he or she would have done in the absence of an entitlement to benefit. Compliance with the search requirement will always be a preferable strategy.

- It follows that benefits can, without provoking abandonment of benefit claims, be made conditional upon an intensity of job search *higher* than the individual would undertake in the absence of a benefit entitlement. So, under fairly general assumptions, benefit systems can be designed so as to generate unemployment levels below those that arise under *laissez-faire* (the absence of a benefit system).

The last theoretical prediction applies to a range of behavioural requirements. In the case of a requirement to accept a suitable job, suppose unemployed people receive a succession of job offers at different wage levels and reject those which pay wages below their "reservation wage" (Wr). The payment of benefit raises the reservation wage and, thus, increases the expected duration of unemployment spells. If now the PES observes the arrival of job offers and imposes strong sanctions (*e.g.* lifetime exclusion from the benefit system) when an offer paying a wage above some suitable level (Ws) is rejected, Ws can be set below the level Wr that unemployed people would choose in the absence of any benefit system. Unemployment spell durations are, therefore, lower than under *laissez-faire* [Ljungqvist and Sargent (1995)].

Alternatively, the PES might monitor only the frequency of job applications, leaving the unemployed person free to choose whether to accept or reject any actual job offer that results. In this case, the availability of the unemployment benefit raises Wr. However, if job-search requirements are so constraining that the disutility of unemployment with benefits is almost as great as the disutility of unemployment without benefits, the benefit system will cause a marginal increase in Wr, but a substantial increase in search intensity. Here too, unemployment spell durations can be made lower than under *laissez-faire*. Contrasting this model with the previous one, it may be noted that, in terms of the direct "behavioural" effect, a strict job-search requirement does "make work pay" by bringing the unemployed into contact with adequate jobs more frequently, but a strict "suitable work" requirement forces the unemployed to accept lower-paid jobs.

Another example of a "behavioural" requirement would be the requirement to attend PES training courses. In each case, benefits lose their passive character and become a "wage" paid to the unemployed in return for undertaking additional job search (or for standing ready to enter work sooner, or for participating in training, etc.). In simple models where the behavioural requirements are assumed to be effective and the PES accurately observes job-search behaviour, benefit disincentive effects can be counteracted and potentially reversed. However, the limitations of such simple models should be kept in mind.[4]

To the extent that public consumption is financed by taxes on wages, the incentive to re-enter work may be socially suboptimal even at a zero level of benefit. A positive level of benefit, paid conditional on strict behavioural requirements, may then increase efficiency as well as social welfare. From this point of view a "welfare state" strategy, with high levels of public spending and high unemployment benefits subject to strong behavioural requirements, is a coherent whole, as long as it does in fact reduce unemployment. However the preconditions for such a theoretical result to hold may be rather stringent and difficult to maintain in practice.

II. A brief survey of eligibility criteria

A detailed reading of benefit legislation (see Annex 4.A) reveals great cross-country variation in some of the eligibility requirements. The definitions of *loss of work* and *availability for work* involve issues such as: Are seasonal and intermittent workers allowed to draw unemployment benefit during slack months even if there is little prospect of placing them? Are people allowed to draw unemployment benefit if they are spending much of their time on unpaid household production (*e.g.* agriculture, home improvement)? Should people whose availability for work appears to be restricted (*e.g.* with child-care responsibilities or intensive involvement in voluntary work) be disqualified from receiving unemployment benefit? If such people are not disqualified, should normal eligibility requirements (*e.g.* that the person should be able to start full-time work at short notice) be relaxed for them, or should these requirements be maintained with strengthened monitoring to ensure compliance?

Some features of legislation can be interpreted as attempts at limiting benefit payment to people who are effectively available for the types of work that are actually on offer. For example, workers may be allowed to restrict their availability for work in some way (*e.g.* by occupation or by geographical location) only on condition that "sufficient" numbers of jobs are still available.

In general, a lax definition of availability for work results in people who might otherwise report that they are out of the labour force being registered as unemployed. Depending on the magnitude of this impact, it could exhaust the energies of the placement service (*e.g.* its reputation with employers is undermined when such people are referred to vacant jobs). However, too strict a

definition will exclude some individuals who are genuinely unemployed.

In defining *suitable work*, Norway is a model of all-round strictness: the unemployed must generally accept shift and night work, must be prepared to work anywhere in Norway (and a spouse who quits his or her job to avoid separation of the couple and then claims benefit will be penalised for a voluntary quit), must be ready to accept any job they can do without reference to their previous occupation or wage level, and cannot refuse a job on religious or ethical grounds (albeit that administrative discretion may be invoked in such cases).

The geographical mobility requirement was a significant component in the Nordic model of active labour policy in the 1960s, but it encountered resistance not only from the unemployed themselves, but also from politicians in rural or depressed areas who saw it as removing the most employable people from the local population. In most other countries, even if there is some requirement for geographic mobility in principle, the wording of legislation and guidelines on the question is vague or contorted: for most unemployed the risk of being offered a job at the other end of the country is probably negligible. The question of travel-to-work time is more relevant. But the mildest requirement is for acceptance of placements involving two hours' travel daily (in the Netherlands and the United Kingdom) and it is doubtful whether the strictest countries, which require four hours travel daily (Belgium and Switzerland), achieve many stable placements involving such a long commute.

Occupational protection (*i.e.* allowing unemployed people to refuse a job offer that involves a change of occupation) is quite common, but this principle usually applies only to the first few months of unemployment. In France and Spain, it applies in general terms to both insurance and assistance forms of unemployment benefit, although in France its interpretation becomes more flexible as the duration of unemployment increases. In Austria, it applies for the whole duration of the insurance benefit, which is however relatively short.[5] In Denmark, a progressive reduction in the duration of occupational protection for the unemployed (from 18 months in 1989 to 3 months in 1999) has been a significant component of a wider package of reforms which has been credited for much of the fall in unemployment since 1994 [MoL (1999)].

Suitable work criteria are, with some exceptions (see below), enforced only to the extent that the PES directly refers unemployed people to specific vacancies. If the PES fills vacancies only by advertising, then referrals to vacancies occur only at the initiative of the jobseeker, who can choose to apply for vacant jobs or ignore them according to his or her own ideas of what is suitable, so that the suitable-work criteria embodied in legislation become more or less irrelevant. However, techniques of direct referral of job-seekers to vacancies chosen for them by the PES, with feedback from the employer, are used to a significant extent in at least one-half of OECD countries.

In most countries, legislation creates a general obligation to accept placements into official or approved *labour market programmes*. Job-creation programmes may, therefore, not need to conform to usual "suitable work" criteria.[6] In Belgium and France, general legislation refers only to vocational training, so job-creation programmes need to conform to regular "suitable work" criteria (or be backed by specific legislation) if participation is to be obligatory. In Canada, the UI Act states explicitly that no claimant can be disentitled for refusing employment on a job creation project.

Requirements for *independent job search* vary especially sharply, with some countries (*e.g.* Belgium, the Czech Republic and Spain) having no general requirement in principle,[7] and others (Australia, the Netherlands, Switzerland, the United Kingdom and the United States) specifying that individuals must report their job search in some detail and achieve a minimum frequency (which is often determined by the PES according to individual and local labour market circumstances) of job applications or assimilated acts of job search. In the latter case, the surveillance of independent job search can be the most important intervention by the PES to "activate" the unemployed. This is particularly clear in the United States, where the unemployed in most states have to make two or more job applications every week, but rarely have more than one or two other contacts with the PES (*e.g.* intensive interviews, action plans, attendance at a job-search seminar, etc.) during a six-month benefit spell.[8] In France, there is a principle of permanent job search and although a minimum frequency of job applications is not specified, documentation must be kept and intensive reviews of job search, at intervals of four months or more, are a prime instrument in the verification of eligibility.

Monitoring of independent job search may play some role in implementing the "suitable work" criteria for benefit. Guidelines in Australia, in particular, suggest that the PES (the public body Centrelink, in the current context of privatised placement services) should disregard applications for types of work that the unemployed person has little chance of obtaining. This obliges unemployed people to apply for a range of jobs within limits that are defined by the "suitable work" criteria. Some employment offices in Switzerland also monitor the "quality" of independent job

applications reported by the unemployed as well as their quantity [OFDE (1999*a*)].

Legislation in relation to *contacts with the PES* generally gives the PES broad powers to require the claimant to provide relevant documents and information, participate in assessments, attend interviews and collective information sessions, etc. Swiss legislation provides for sanctions for refusal to follow instructions from the labour office, although it is not clear how broadly this could be interpreted. In some other countries, general clauses in legislation requiring beneficiaries to co-operate with the employment office (the Czech Republic) or not act in any way that gives the PES an impression of not being fully available for work (Denmark and Norway) might be invoked to sanction an unemployed person who rejects reasonable suggestions. But there is little evidence that these general clauses are actually invoked as the basis for benefit sanctions.[9]

The United Kingdom has tightened benefit eligibility conditions in various ways since the mid-1980s (see below). In 1996, a specific requirement for compliance with (reasonable) written instructions from a PES officer, the Jobseeker's Direction, was introduced. The general "authority" of PES staff in their dealings with the unemployed was fairly widely established by 1997, although the Jobseeker's Direction was only one of the factors involved.[10]

III. An overview of sanction provisions and statistics

A. Sanction provisions

Most national legislation uses a concept such as a benefit "sanction", which may also be called a "deferment" or a temporary or permanent "stop" or "exclusion". However "sanctions", as defined in legislation by any such words, may still apply only to a limited range of situations. Other situations may lead instead to a decision that the person is ineligible for benefit. For example, a person who has refused work is normally sanctioned, but a person who freely announces that he or she is no longer able or willing to work is not sanctioned, but, nevertheless, becomes ineligible for benefit. Inevitably, certain situations will be treated differently in different countries. National definitions of "sanction" do not have comparable coverage, and broad coverage may not imply strictness since the alternative treatment, *i.e.* a benefit stop on general eligibility grounds, may have more severe consequences for the person concerned than a sanction would do.

In most cases, temporary benefit stops imply loss of the corresponding benefit entitlement, but in Japan the UI entitlement is only postponed. In the case of decisions initiated by the placement service, France has a two-stage sanction system: the placement service strikes the jobseeker off its register for a defined period, resulting in suspension of benefit payment without loss of total entitlement, and state authorities then take a separate decision concerning loss of benefit entitlement. If this loss of entitlement is pronounced it should, according to current guidelines, cover at least the time that the person is struck off the job-seeker register.

Table 4.1 compares the duration of benefit sanctions or other benefit stops across countries for the situations which are most often handled through fixed-duration benefit stops or reductions, *i.e.* voluntary quit and refusal of work. In eight countries, the sanction for voluntary quit is the same as the sanction for a first refusal of a job, but in Denmark, Finland, Japan and New Zealand the former is more severe.

There are very sharp variations in the duration of sanctions for a first refusal of suitable work, ranging from one week in Denmark and four to five weeks in Australia and Japan, two or three months in many other countries, to six months or more in Belgium and exclusion in Spain. A typical or median duration of sanctions for a first refusal of a suitable job (two to three months) appears to be less than the likely cost of the refusal in terms of additional benefit payments as a consequence of the refusal (if no sanction were applied): it is perhaps half the expected duration of a new benefit spell and a quarter of the expected further duration of unemployment for a longer-term unemployed person.[11] The reasoning behind the mild sanction for a first refusal in Denmark (a benefit stop of one week) may be that this facilitates the application of sanctions. Conversely, the strictness of the sanction in Belgium (a benefit stop of 26-52 weeks) helps explain the very low actual incidence of sanctions for refusal of work in that country.

About half the countries shown positively require exclusion of a person who repeatedly refuses (typically, within a one or two-year period, or within a given benefit entitlement period) suitable work. In Australia, New Zealand and the United Kingdom, benefit entitlements are of unlimited duration, so exclusion would not make much sense. In many cases, "exclusion" means that the person's UI contribution record is wiped out and has to be earned again through work before any new benefit claim. However, Denmark and Finland have specific provisions allowing readmission to the benefit system after ten weeks and three months of work, respectively. In some cases, repeated refusal of work leads to an indefinite suspension

Table 4.1. **Periods of benefit sanction following a voluntary quit and refusal of work or ALMP placement**

	First voluntary quit or dismissal for fault	Refusal of work or ALMP placement		
		First refusal	Second refusal	Subsequent refusals
Australia	4-5 weeks [a]	4-5 weeks [a]	6 weeks [b]	8 weeks
Belgium	8-52 weeks [c]	26-52 weeks	Exclusion	
Czech Republic	Exclusion [d]	3 months [e]	Exclusion	
Denmark	5 weeks	1 week (job), exclusion (ALMP) [f]	Exclusion	
Finland	3 months [g]	2 months [g] (job), 0-2 months (ALMP)	2 months or exclusion [h]	2 months or exclusion [h]
France	4 months [i]	Temporary or definitive exclusion [j]	Temporary or definitive exclusion [j]	Temporary or definitive exclusion [j]
Germany	12 weeks [k]	12 weeks [k]	Exclusion [l]	
Japan	1-3 months [m]	1 month [n]	No change	No change
New Zealand	13 weeks [o]	1 week (job), until recompliance (ALMP) [p]	13 weeks (job), until recompliance [p] minimum 1 week (ALMP)	13 weeks
Norway	8 weeks	8 weeks	12 weeks	26 weeks
Spain	Exclusion [q]	Exclusion		
Switzerland	6-12 weeks	6-12 weeks	6-12 weeks or exclusion [r]	6-12 weeks or exclusion [r]
United Kingdom	1-26 weeks	1-26 weeks (job), 2 weeks (ALMP)	1-26 weeks (job), 4 weeks (ALMP)	1-26 weeks (job), 4 weeks (ALMP)

a) Full-time equivalent of an 18 per cent reduction in benefit level that lasts 26 weeks.
b) Full-time equivalent of a 24 per cent reduction in benefit level that lasts 26 weeks.
c) 8-52 weeks in cases of dismissal for fault, 26-52 weeks in cases of voluntary quit.
d) May apply only in cases of repeated quits during a 6-month period.
e) Exclusion is also possible.
f) A first refusal of an ALMP placement leads to exclusion only during the "active period" (after 12 months of unemployment).
g) Reduced to 1 month if the job in question is for less than 5 days.
h) Legislation specifies exclusion for repeated refusals, which are not defined, but in practice a second refusal within a year is a repeat refusal. However, the sanction for people with wage-related benefits who repeatedly refuse ALMP placements is limited to 2 months.
i) Admission to benefit after 4 months of unemployment is conditional on proving active job search during these four months.
j) The word "exclusion" in this table generally implies an indefinite benefit stop or definitive loss of remaining benefit entitlement. In France, legislation also provides for temporary exclusions. When an attitude of refusal of work is observed, exclusion is in principle definitive.
k) Reduced in some circumstances.
l) Exclusion follows when sanctions totalling 24 weeks have been pronounced.
m) Typically 3 months.
n) One month in case of refusal of work, but up to 1 month in case of refusal of training.
o) Under a "clean slate" provision, benefit payments can resume after 4 weeks on a provisional basis if the person is participating satisfactorily in community work, employment-related training or another organised activity. If the person obtains full- or part-time short-term employment for at least 6 weeks, the remaining stand down can be waived.
p) Recompliance means attending an interview following the failure to attend one: in a case of refusal of "community" work or training, etc., it could mean participation in an activity as under the "clean slate" provisions.
q) Exclusion in cases of a quit, but a 3-month waiting period in cases of dismissal for fault.
r) A second refusal of an ALMP place leads to exclusion, and a second or third refusal of a job might lead to exclusion.
Sources: Legislation and other material, in many cases as supplied for the OECD thematic review of labour market behavioural criteria for unemployment benefits.

of benefit on eligibility grounds (*i.e.* it is interpreted as evidence that the person is not available) which may be reversible if and when the person provides better or renewed evidence of availability.

In Finland (for those on wage-related benefits) and the United Kingdom, repeated refusals of an active labour market programme (ALMP) placement attract a relatively light sanction. But in Denmark, although a first refusal of a suitable job leads only to a one week sanction, a first refusal of an ALMP placement within the so-called "active period of benefit" (after 12 months of unemployment) leads to exclusion, with no readmission until 52 weeks of work have been performed. These remarkable contrasts probably relate to rather specific national circumstances (union ownership of the wage-related benefit system in Finland, the short duration of most participation in ALMPs in the United Kingdom and the current forceful commitment to the "active period of benefit" strategy in Denmark).

In cases of failure to co-operate with the PES (*e.g.* failure to attend interview), some countries apply sanctions. In others, the PES considers that the benefit claim has been dropped, and simply stops benefit payments until the person has re-contacted the PES and complied with requirements. Where there are defined-duration

sanctions for failure to co-operate with a regular administrative requirement (including attendance at interviews with the PES), they tend to be considerably lighter than for refusal of a job.[12] But there are some significant exceptions in relation to individual action plan procedures, the "active period" of benefits and placements into ALMPs. Thus, an indefinite benefit stop applies for refusal to co-operate with the action plan procedure in Belgium and Denmark.

B. Sanction statistics

Table 4.2 shows the incidence of benefit sanctions in a number of countries in terms of annual sanctions as a percentage of the inflow to benefits or the stock of beneficiaries. The table includes, in principle, all recorded decisions to temporarily or permanently stop benefits for "voluntary quit" and "labour market behavioural" reasons (including stops on general eligibility grounds), but in the case of "administrative infractions" the table only includes stops which officially have the nature of a "sanction". This is because, for the few countries where statistics apparently covering all negative decisions on benefit applications or continuation of benefit have been obtained, these are clearly not all sanctions and the categories used are too broad to allow separate identification of "administrative infractions", as defined here.[13]

The statistics at the more aggregate level in Table 4.2 are probably the least comparable across countries, because for the Czech Republic and Denmark stops for voluntary quit are not recorded, and for six countries no sanctions for administrative infractions (such as failure to

Table 4.2. **Incidence of unemployment benefit refusals and sanctions in thirteen countries**

	Australia Jul-Nov 1997	Belgium 1997	Canada 1998	Czech Republic 1997 [a]	Denmark Q1 1997	Finland 1997	Germany 1997	Japan 1998 [b]	Switzerland 1996 [c]	New Zealand 1997/98 [d]	Norway 1998	United Kingdom 1997-98	United States 1998 [e]
	As a percentage of the inflow to benefits												
Sanctions for behaviour before benefits start	**2.21**	**4.70**	**19.38**	**..**	**..**	**3.44**	**3.62**	**57.26**	**13.12**	**0.50**	**10.55**	**4.32**	**11.13**
Miscellaneous initial conditions	..	0.03	1.09	..	..	0.61	..	..	..	..	..	..	..
Voluntary unemployment [f]	2.21	4.67	18.30	..	..	2.83	3.62	57.26	..	0.50	10.55	4.32	11.13
	Total sanctions in a year (or data at an equivalent annual rate) divided by the average stock of beneficiaries, in percentages												
Sanctions and refusals for behaviour during benefit period	**14.71**	**4.20**	**6.07**	**14.70**	**4.30**	**10.19**	**1.14**	**0.02**	**40.29**	**0.37**	**10.84**	**10.30**	**56.97**
Labour market behavioural conditions	***3.30***	***0.78***	***6.07***	***..***	***2.12***	***10.19***	***1.14***	***0.02***	***..***	***0.37***	***7.32***	***5.52***	***35.35***
Refusal of work	0.33	0.02	2.74	..	0.57	2.69	0.64	0.00	13.23	0.01	5.01	1.23	1.90
ALMP or related action plan	1.82	0.76	..	..	1.55	7.50	0.50	0.02	..	0.36	2.31	2.21	..
Evidence of job search	1.15	..	3.33	..	..	..	..	..	25.26	..	..	2.08	33.46
Administrative infractions [g]	***11.41***	***3.42***	***..***	***..***	***2.18***	***..***	***..***	***0.00***	***..***	***..***	***3.52***	***4.78***	***21.62***

.. Unknown or zero.

a) Because data in the Czech Republic relate to exclusions from the job-seeker register, total registered job seekers (not beneficiaries) are used as the denominator in computing the incidence of sanctions.

b) In Japan, some exclusions from benefit (on grounds of lack of willingness to work) may occur in cases of insufficient evidence of active job search, but these cases are not recorded.

c) Total sanctions in Switzerland in 1996 are allocated to quits, job search, refusal of work and other sanctions for behaviour during the benefit period (included in this total but not in any sub-category), according to incomplete results of partial surveys conducted by OFIAMT in 1989, 1992 and 1998. Data for 1993 (a year with a similar unemployment rate) were used as the denominator in calculating incidences. New benefit claims were estimated as 72 per cent of new registrations with the placement service [OECD (1996), Table 2.2, p. 103].

d) In New Zealand, sanctions shown in the "ALMP or related action plan" category could relate to failures to provide evidence of active job search under Workplan or to failures to attend work readiness interviews.

e) The US "active job search" sanction total includes some sanctions related to ability and availability issues. In the United States, sanction rates for ongoing claims are usually cited on a per-claimant-contact basis, where claimant contacts occur weekly. The annual rates shown here can be read as saying, for example, that the average weekly rate of sanctions applying to persons with a current claim for active job search reasons is 0.63% (*i.e.* 33.46% divided by 52 weeks).

f) Voluntary unemployment includes dismissal for fault.

g) "Administration infractions" here refer to non-attendance at interviews with the PES and failure to send necessary forms or notify changes in circumstances, including in some countries sanctions for non-declaration of income. However, where failure to attend interviews called specifically to discuss a job, programme place or action plan is assimilated to refusal of these measures, the sanctions have been left in the relevant category.

Sources: Information from national authorities and Secretariat calculations.

attend interviews with the PES) are recorded. But benefit stops of some kind must occur. However, in the case of lack of evidence of active job search, where no statistics are shown this probably does indicate that no, or very few, sanctions occur on these grounds, except perhaps for Japan. In Japan people whose job-search, as reported on four-weekly declaration forms, is considered inadequate lose their remaining benefit entitlement but since this is considered as enforcement of a general eligibility (willingness to work) criterion rather than a formal sanction, statistics are not recorded.

In six countries, less than 5 per cent of new benefit claims are sanctioned on grounds of voluntary quit or dismissal for fault. This is far lower than the proportion of the experienced unemployed who report in labour force surveys that separation occurred through leaving rather than dismissal or termination of a fixed-term contract [OECD (1990), Table 2.4, shows that this proportion often exceeded one quarter and it approached one half in Germany and the United Kingdom]. This discrepancy arises partly for valid reasons (*e.g.* a quit when the spouse moves to a different part of the country for professional reasons is often not sanctionable), but also partly because employers collude with employees (*i.e.* agree to falsely report that they were dismissed) and because many situations are ambiguous (*e.g.* unsatisfactory workers are persuaded to leave, dissatisfied workers are dismissed, etc.).[14] In the United States, the experience-rating of UI benefits gives employers some incentive to contest employees' claims that they were dismissed. In most other countries this incentive is lacking, although the Netherlands recently made employers responsible for financing the first six months of benefit. However in Japan, where companies have traditionally been concerned to provide job security and few personal reasons for quit are allowed, more than half of all new claims are subject to a three-month postponement for reasons of voluntary quit.

The annual total of sanctions for refusal of suitable work, relative to the stock of beneficiaries, is highest in Finland, Norway and Switzerland. In each case, there is some evidence that a substantial proportion of vacancies are filled by active matching to the unemployment register and the direct referral of suitable candidates. But this also occurs in Denmark and Germany. Perhaps the biggest surprise here is that sanction rates for refusal of suitable work are higher in the United Kingdom and the United States than in Denmark and Germany. Most reports indicate that the PES in the United Kingdom and the United States relies overwhelmingly on advertising-type methods to fill vacancies, but they do make direct referrals under case management procedures.[15] New Zealand (which in principle has similar case management arrangements) pronounced just 13 sanctions for refusal of work in 1998/9 and Japan just one for this reason in 1998.

Sanctions for refusal of an action plan or ALMP placement may be more frequent in Finland than in Denmark because in Denmark such refusals are heavily sanctioned and in Finland vocational training programmes are large, but sanctions are sometimes mild and there are some perverse incentives to refuse offers [OECD (1996*a*)]. The relatively high sanction rate for refusing ALMP places in the United Kingdom (despite relatively low levels of spending on ALMPs) probably arises because inflows are large (many ALMPs are one or two-week courses, rather than long-term) and sanctions are mild: non-attendance rates even for compulsory courses are sometimes very high [Finn *et al.* (1998)]. Although New Zealand, in principle, put more emphasis on obligations to undertake community work as from 1998, its actual sanction rate remained low.

Switzerland and the United States report many more sanctions related to monitoring of independent job-search activity than Australia and the United Kingdom. The normal sanction for insufficient reporting of job-search contacts in the United States is loss of benefit for the reporting week only. Also, in Switzerland and the United States, benefits are based on insurance principles and many of the unemployed have recent work experience, which may encourage a more rigid interpretation of job-search requirements. In Australia, the sanction is more severe (an 18 per cent reduction in benefit for 26 weeks). In the United Kingdom, the job-search requirement is often less explicit: a required weekly or monthly frequency of job applications is often not specified, reporting of name and address for employer contacts is not generally required and there is a considerable local flexibility in monitoring job-search requirements [Finn *et al.* (1998)]. The fact that Denmark, Germany and Norway report no sanctions for insufficient levels of independent job search confirms that the general requirement for such job search in these countries does not have much impact, in the absence of a legal basis for more specific and detailed monitoring procedures.

The incidence of sanctions for specific reasons in specific countries depends largely upon various aspects of PES procedure. If there is no regular procedure that is capable of monitoring the behaviour in question, few sanctions will arise. The incidence of sanctions generated by a regular procedure (*e.g.* direct referral to PES training programmes) no doubt varies with the frequency of the intervention itself, but it also varies with other factors such as whether legislation allows flexible interpretation of the criterion in ways favourable or unfavourable to the unemployed, the harshness of the sanctions themselves, guide-

lines for individualised counselling (*e.g.* counsellors may be encouraged to issue warnings to at-risk clients and arrange further counselling before initiating any sanction action), and administrative blockages (which arise when employment counsellors have to transmit documents to a separate benefit administration for decision). Appeal procedures also influence outcomes.[16] In Nordic countries there is generally a consensus among social partners in favour of the active approach to labour market policy, but this does not in itself guarantee compliance with requirements by unemployed people. Sanctions for non-compliance are therefore also needed in these countries and relatively high sanction rates can arise.

IV. Can a reasonable index for the strictness of benefit eligibility criteria be constructed?

The Danish Ministry of Finance [MoF, 1998] recently constructed an index for the strictness of eligibility criteria based on a limited number of indicators: independent job-search requirements; occupational mobility and geographic mobility criteria for suitable work (the latter including both travel to work and relocation); and the standard duration of benefit sanctions following voluntary quits and refusals of job offers. This section advances two main observations: first, it is not always easy to compare these eligibility criteria, and other criteria tend to be even less comparable, so it will be difficult to construct a much better index for the relative "strictness" of the criteria as they appear in legislation than the Ministry of Finance one; and second, if the aim is to guide policy or help explain international differences in unemployment rates, an indicator focusing on a concept closer to "tightness" or "effectiveness" of eligibility criteria, including implementation arrangements, would be more appropriate and would classify countries rather differently.

An attempt at measuring the overall "strictness" of legislation involves scoring strictness in selected specific areas and weighting these partial results together. However, legislation can be obscure:

- Some legislation (*e.g.* in the Czech Republic and Spain) is worded generally and does not mention, for example, whether part-time work, casual work, shift work and night work are considered "suitable".
- Even legislation that is quite developed in detail often contains ambiguous or partial treatments of specific issues, such as geographic mobility and the practical content of active job-search requirements.
- Legislation may include broadly-worded statements (*e.g.* that the unemployed person "must use all possible ways to end his joblessness" in Germany and "must permanently and effectively seek work" in France) which on a literal reading are clearly "strict". However, courts commonly refuse to pronounce benefit sanctions on the basis of these phrases alone in concrete situations (*e.g.* when someone has refused an offer of work abroad or has failed to maintain a diary record of job applications).

At the national level, jurisprudence may clarify how some standard situations are likely to be treated if they are brought before the courts, but no suitable comparative summary of jurisprudence is available.

Any ranking of countries for the "strictness" of their legal provisions will be fairly sensitive to the weighting system applied to the components of the index, because strictness in one area is quite often balanced by relative laxity in another. For example, Spain is very strict in relation to voluntary quits, but may be rather lax in other respects. Australia and the United Kingdom provide rather limited occupational and wage protection, but go furthest in accommodating conscientious and religious objections to work. Similarly, Finland and Norway define suitable work strictly, but impose few requirements for independent job search.

Although "strictness" at the level of legislation is a concept of interest in its own right, it is unlikely to capture the overall impact of eligibility criteria requirements on unemployment levels well because variations in implementation are very large. Implementation in general has declined to rather low levels at some times and in some countries: in a given country at a given time, some eligibility criteria may be effectively implemented while others have only limited practical relevance. As mentioned above, "suitable work" criteria have practical relevance mainly to the extent that the PES uses a specific method of job-broking (*i.e.* the direct referral of job-seekers to specific job vacancies that the PES has selected for them).

The formal strictness of legislation will be misleading as a guide to its actual impact if the formal strictness results from, or provokes, infrequent implementation. Starting from the observation that the strictest requirements – for example, that the unemployed person should accept jobs involving up to four hours of commuting per day – will, in some circumstances, be unreasonable, the following observations are relevant:

- In countries where legislation is consistently implemented, everyday practice regularly throws up individual cases where the general rules appear unreasonable and experts are kept busy developing

exception clauses.[17] The absence of such exception clauses, although it makes the legislation stricter in a formal sense, could merely indicate that the strict general rule is rarely applied.

- Even if courts do in contested cases support a literal interpretation of strict general rules (*e.g.* that all unemployed must accept almost any legal job), employment counsellors will be reluctant to initiate sanctions each time that this is possible. But if sanctions are only infrequently implemented, their application in any individual case will seem arbitrary. If employment services develop approximate unwritten rules about when they do and do not apply their sanction powers, as long as these rules are out of line with general legislation they cannot be codified and employment counsellors will continue to face a large degree of personal responsibility and uncertainty as to what standards apply. For such reasons, actual implementation may become unnecessarily troublesome and infrequent.

Given the variability in implementation, an overall indicator for the impact of eligibility criteria should incorporate some direct indicator of implementation. However there are some difficulties in using sanction rates for this purpose. Legal strictness and implementation indicators interact in a multiplicative rather than an additive way (*e.g.* a strict legal definition of suitable work is irrelevant if there is no implementation of this criterion), and data rarely report sanctions by detailed reason in ways that would allow such sophisticated calculations. A more basic difficulty is that sanction rates are not a direct indicator of implementation. Sanction rates are highest when levels of monitoring and levels of non-compliance are *both* high. If communication and information errors are minimised (*i.e.* when the unemployed are well informed about requirements and monitoring procedures reliably detect non-compliance), compliance may be high with a fairly low sanction rate.[18] From this point of view, the frequency of PES interventions that might detect non-compliance could be a better indicator of implementation than the actual incidence of sanctions that results. Often the PES has adequate legal authority for its behavioural requirements and their impact is mainly a function of the frequency of interventions that take place under this authority (*e.g.* how often job-seekers are called to interview, referred to vacant jobs or asked to report their job-search activities).

An international comparison of the "strictness" of eligibility criteria also raises some issues of "reverse causality". In some countries, legislation may not give detailed powers to the PES because its general powers are found to be adequate.[19] A favourable overall employment or unemployment situation may encourage the legislator to be more "lax" in some areas and "stricter" in others. Strict eligibility provisions in Belgium and Spain (four hours travel-to-work time in Belgium, voluntary quit is never justified in Spain and sanctions for any infraction are very severe in both countries) suggest a political perception that people are lucky to have any job or job offer at all and are, therefore, never justified in abandoning or rejecting it. Apparently lax eligibility requirements for benefits (*e.g.* those which make allowance for child-care problems) will be developed in countries where many people with constraints on availability (*e.g.* people with child-care problems or mildly disabled older workers) have jobs – which is a necessary condition for a high overall level of employment. And formal requirements for independent job search are applied mainly in countries with relatively flexible labour markets (Australia, Switzerland, the United Kingdom and the United States) where job vacancies are in any case easier to find.

Much of the information about eligibility criteria that is available relates only to unemployment insurance benefits, which vary in their duration and coverage. A general principle of allowing the unemployed to refuse work that involves a change of occupation, for example, would be a fairly standard arrangement when applied to a benefit that lasts six months or less, but a relatively "lax" arrangement if applied to a benefit that lasts two years or more. In many countries, a significant proportion of the unemployed receive a separate assistance benefit (*e.g.* municipal social assistance, or the RMI in France) so labour-market-behavioural eligibility criteria for these benefits should be taken into account. Eligibility criteria for assistance benefits vary greatly in terms of strictness, clarity and implementation, but it is often difficult to get detailed information about them.

V. Evidence for the impact of eligibility criteria: a brief survey

Do eligibility requirements and sanctions affect unemployment? They will most directly affect unemployment as measured by the number of people with benefits. In countries with high benefit coverage, a long-term change in beneficiary numbers may typically be associated with a change in unemployment according to the standard ILO definition that is at least one half as big, although the link may be erratic and it needs further research. The potential importance of eligibility requirements of an "exclusion" nature is illustrated by experience in Canada, where benefit payments to seasonal workers (who are often not really available for work during the slack season) are a major and persistent concern, and in Belgium where a

substantial proportion of benefits goes to mothers with child-care responsibilities (who are often not really available for full-time work). Their experience suggests that defining these groups as ineligible, or at least tightly defining when they are eligible, as some other countries do, could have quite a large impact on the beneficiary population. The impact of "exclusion" clauses is generally taken for granted in the sense that analysts have pointed to restrictive changes in entitlement and eligibility criteria as influences on benefit coverage in the United States during the 1980s and in Canada during the 1990s, and as an influence on registered unemployment in the United Kingdom in the 1980s. But as far as benefit coverage is concerned, entitlement conditions influence outcomes more than eligibility conditions.[20]

Evaluations of labour market programmes often provide information about the impact of "behavioural" eligibility requirements, but relatively few evaluations directly assess whether the compulsory or non-compulsory nature of participation modified its impact or generated "disutility" or "entry" effects. Some relevant findings include:

- Compulsory *intensive interviews* reduce the volume of benefit claims. Administrative experience has often been that the introduction of a procedure for interviewing unemployed people (when such a procedure was previously little used) leads to 5 to 10 per cent of benefit claims being dropped [OECD (1994*b*)]. Dolton and O'Niell (1996) also report from an experiment conducted in 1989 in Britain that the treatment of dropping the 25-minute Restart interview normally conducted at six months reduced hazard rates out of unemployment over the next five to six months by 20 to 30 per cent.
- *Job-search requirements* for UI benefits in the United States yield significant cost savings, as has been confirmed in a number of experiments conducted in co-operation with employment services in several states [OECD (1999) and Box 1].
- *Long-term labour market programmes* (*e.g.* four to six months vocational training or work experience programmes) reduce open unemployment through the mechanical effect of participation itself, but there is mixed evidence on whether they reduce "broad" unemployment (*i.e.* the total including programme participants). In Finland and Sweden, the general policy of placing the long-term unemployed into labour market programmes lasting about six months (substantially modified around 1993 in Finland) did not keep total unemployment low in the 1990s. But there is room for debate about how far these programmes should be interpreted as "compulsory": according to the "carousel" argument, these programmes have increased unemployment because participation in them creates a right to a new period of benefits. In Denmark, the general policy of placing the long-term unemployed continuously into active measures for three years corresponds more clearly to the concept of an "onerous condition" for the continued receipt of benefit and has been more successful, at least for the moment. Most unemployed drop their benefit claim in one way or another long before expiration of this three-year "active period of benefit".

Various further specific "behavioural" requirements in benefit eligibility criteria have rarely, if ever, been evaluated in any systematic way. This applies to the suitable work criteria which oblige the unemployed to move to a different area, change occupation or accept a lower wage. Only the United Kingdom and Switzerland have a "pilot scheme" clause in benefit legislation which would, in principle, allow experimental relaxation of such requirements for particular individuals or local areas.

A few studies provide some evidence on the impact of benefit sanctions. Abbring *et al.* (1999) found in 1992 data from the Netherlands that (after controlling for heterogeneity and modelling the probability that individuals would receive a sanction) the imposition of a sanction on unemployed people raised the subsequent transition rate to employment by 77 per cent in the metal sector and 107 per cent in the banking sector. Van den Berg *et al.* (1999) conducted a similar analysis in data for unemployed people in Rotterdam who had previously worked and were receiving the assistance form of benefit during 1994-1996. In this case, a sanction raised the transition rate from welfare to work by 140 per cent. Sanctions may have encouraged exit by reducing the perceived utility of continuing unemployment (a second sanction may be perceived as more likely to occur, and likely to be more severe). The estimated impacts seem large, and suggest that any significant risk of sanction may have quite a large impact on behaviour. However it should be kept in mind that sanctions may have been successfully targeted on people for whom they are likely to have an impact (*i.e.* employable persons who appear to lack motivation): the impact at the margin, if sanctions were used more widely, might be much smaller.

General evaluations of the effectiveness of the PES work quite commonly treat sanctions as an irrelevant or highly secondary issue, apparently on the grounds that sanctions are the policy responsibility of a separate benefit administration, or that sanctions involve only a small minority of clients and have little relevance to overall placement strategy. However, some evaluations have con-

Box 1. Work search requirements in Maryland, United States

In June 1993, the US Department of Labor and the State of Maryland began an experimental programme with a design that drew upon experience from several previous studies. New UI claims during 1994 were randomly assigned to varying work search "treatments", both modifications in the work search reporting requirements and job-search training.

The normal work search requirement in this state at the time was to report two contacts with named employers per week. A treatment which increased the number of employer contacts required from two to four per week reduced the average duration of UI payments by 0.7 week (5.9 per cent). Another treatment which retained the requirement for two employer contacts per week, but informed claimants that reported contacts would be verified with the employer (in practice, only about 10 per cent of reported contacts were verified), reduced the average duration of UI payments by 0.9 week (7.5 per cent). Dropping the requirement for reporting of work search contacts each week (although in this case, the claimants were still informed that they must search for work) increased the average duration of UI payments by 0.4 week.

In contrast to the first two treatments with more stringent requirements, which recorded only insignificant increases in total annual earnings (as measured over the year following the initial claim for benefit), the third treatment with relaxed requirements led to a statistically significant increase in total annual earnings of $347 (4.1 per cent). This suggests that claimants in this group found higher-paying jobs, perhaps because they waited longer for recall by the previous employer or for a better-paid job offer, or searched more efficiently or had a stronger bargaining position with potential employers, when freed from the reporting constraints.

A fourth treatment, where claimants were required (usually in the third to fifth week of their claim) to participate in a four-day job-search training workshop reduced the average duration of UI payments by 0.6 week. The overall impact came largely through a 28 per cent increase in the hazard rate (*i.e.* the proportion of people whose status changes in each time period) of out of UI for the two weeks immediately preceding the date of the scheduled workshop: the hazard rate during the workshop period itself fell, and evidence concerning the period after the workshop was mixed. This suggests that the workshop obligation had an impact more because it increased the cost of UI receipt than because it increased job-search skills. Nevertheless, this treatment significantly increased the proportion of job re-entrants who found a new employer rather than being recalled by the previous employer.

Source: Benus *et al.* (1997).

sidered in more or less depth the impact of the sanctions policies adopted by employment offices (see Box 2).

The Danish Ministry of Finance reports cross-country regressions for 19 countries in which the 1994-1996 average unemployment rate is regressed on its index for the strictness of eligibility criteria and six or seven further explanatory variables (including the net replacement rate and the employment requirement to qualify for UI [MoF (1999)]. Coefficients on this index were large (they indicated that Ireland could reduce its unemployment rate by about 5 percentage points if it adopted the eligibility criteria that prevail in the Netherlands or Sweden). Indeed, MoF (1999) commented that several of the reported coefficients seemed too large. Separate regressions suggested that eligibility criteria influence long-term unemployment more than short-term unemployment. The regressions suggested that strict benefit eligibility criteria offset the impact of a high replacement rate in some countries, such as the Netherlands and Sweden. Such results should of course be treated with caution.[21]

Historical information about benefit eligibility criteria and their implementation in OECD countries is not available in any systematic form.[22] However Auer (2000), in a study of four European countries that have enjoyed recent labour market success, observes "all resorted to a much stricter enforcement of job search and suitable work provisions". Considering four European countries where unemployment fell during the 1990s to around half of its earlier peak level (*i.e.* Denmark, Ireland, the Netherlands and the United Kingdom), three of the four clearly tightened their surveillance of benefit eligibility in the early to mid-1990s. In each case a general shift in attitudes and/or policy stance, which no doubt expressed itself in many ways, was involved. A few key events were:

- *Denmark*: Starting in 1989 labour market criteria have been tightened through a succession of minor changes (*e.g.* in terms of the obligation on the unemployed to accept a change in occupation as mentioned above and benefit sanctions for repeat refusals). In 1994, information systems were set up through which the Ministry of Labour could consult all communications from the placement service to the union insurance funds about refusal of work and similar problems. In 1995, a special "availability inspection unit" was set up to audit the sanction decisions of the insurance funds, and this unit began to

Box 2. An analysis of eligibility issues from Switzerland

Following a reform to the PES in 1995 which introduced regional placement offices (ORP), the Federal Council on 6 November 1996 ordered an evaluation of the functioning and the effectiveness of the new system. This evaluation [OFDE (1999*a*)], carried out by ATAG Ernst & Young Consulting, has a high-profile official status intended to guide further reform of the employment service. This analysis evaluated the effectiveness of a number of placement strategies.

As regards sanctions, the report found that sanctions per job-seeker were 43 times higher in the ten ORP with the highest rates than in the ten ORP with the lowest rates, and concluded that benefit legislation was not being applied uniformly throughout Switzerland. It also found that "the duration of job search shows a significant negative correlation with the number of sanctions and the days of suspension of benefit per job-seeker", yet "there was no significant relationship between the extent of sanctions, and success in placing hard-to-place and long-term unemployed. More precisely, as far as placement of the long-term unemployed is concerned, several ORP with harsh sanction practices get negative results".

At a more qualitative level, the report found that the least effective ORP fell into two categories: those which gave priority to placement of the easiest-to-place people; and those which were "passive and social". It found that in some ORP or cantons (benefits are administered mainly at the cantonal level) the implementation of a sanction takes several months, and recommended that employment counsellors should be able to implement sanctions independently and immediately, without any need for prior authorisation by another part of the organisation. It recommended a general strategy of a "progressive reduction in freedom of choice in job-search" as the duration of unemployment continues. However, a few of the ORP had been able to achieve this with a below-average incidence of sanctions. The report emphasised that sanctions have a negative effect, or no effect, if the job-seeker is punished for violating rules he or she has not been told of or if the job-seeker is unable to find and accept a job. It was important, therefore, to inform job-seekers of their obligations and to apply sanctions only when unemployment was being voluntarily prolonged. Counselling interviews were of primordial importance, and a high frequency of counselling interviews per job-seeker was positively related with sanctions per job-seeker, successful placements and placements of the long-term unemployed.*

* Although OFDE (1999*a*, pp. 52-54) found that counselling interviews improved outcomes, it also noted that they are resource-intensive and that the most successful ORP had reduced the general frequency of counselling interviews in order to increase their intensity in targeted cases and release time for other work.

publish quarterly reports analysing the "fault percentage" (*i.e.* mainly failures to impose benefit sanctions which should have been imposed) of the funds. In 1994, the "active period of benefit" was introduced and it has been backed up by legislation which makes exclusion from benefit the sanction for failure to accept referrals to programmes (see Ministry of Labour, 1999, for a further account).

- *The Netherlands:* Starting in the late 1980s there was "a change in focus" which "led to a policy change with respect to the application of unemployment insurance sanctions […] over the period 1987 to 1994 […] the number of unemployment insurance benefit sanctions increased from 27 000 to 140 000". In relation to the assistance form of unemployment benefit, "By instruction of the Ministry of Social Affairs and Employment, the welfare agencies started to use sanctions as an instrument to stimulate re-employment of welfare recipients and as instrument against fraud at the end of 1992 […]. Before 1992, sanctions were hardly ever used. By the mid-nineties, about 5 per cent of the welfare recipients in a given year received a sanction" [Abbring *et al.* (1999); Van den Berg *et al.* (1999)]. A little later, 13 per cent of welfare recipients reported being sanctioned during the two-year period after January 1996 [Engelen *et al.* (1999)]. In 1995, a new body with about 200 staff, the CTSV, was created "to control and supervise social security spending" in an attempt to "restore the 'primacy of politics' and curtail the 'primacy of industrial self-organisation' in the area of social security" [Visser and Hemerijck (1997)]. In 1996, legislation imposing harsher benefit sanctions was introduced: in the case of unemployment insurance, the sanction following a first instance of voluntary quit or refusal of work or labour market programme participation became exclusion from benefit (subject to an exception clause for cases where the person is not entirely to blame).
- *The United Kingdom:* Obligatory Restart interviews were introduced in 1986, an "actively seeking work" eligibility condition for benefit was introduced in 1989, participation in a labour market programme (a one-week course for those who had been unemployed for two years) was made compulsory for the first time in 1991 and under the "Stricter Benefit

Regime" an administrative drive led to a doubling of the number of sanctions in 1994/95 as compared with the preceding few years [Murray (1995)]. In 1996, benefit legislation was radically overhauled, creating a clear-cut legal framework for processes that define and monitor availability, job-search and compliance with PES instructions.[23] In 1998, under the New Deal, participation in a labour market programme was made obligatory for all youth remaining unemployed after six months plus an additional four-month "gateway" period.

Although these three countries have reformed legislation during the 1990s, this does not mean that they have made their legislative requirements and sanction provisions uniformly strict in international comparative terms.[24] Many of the changes focused more on the operational implementation of benefit eligibility criteria, and were part of broader reforms aiming to activate the unemployed and improve the administration of social security benefits. They were already well under way in the early 1990s, before the main falls in the unemployment occurred, making it more plausible that they actually caused some of the later falls in unemployment. In Ireland, the first sharp falls in unemployment preceded the current drive to implement a greater degree of benefit conditionality which dates from 1996.[25]

Although empirical information remains rather patchy, it does suggest that some countries get into a "virtuous circle" with sustained falls in unemployment and tighter implementation of eligibility criteria. An obvious interpretation is that these developments reinforce each other. This syndrome would then represent the unwinding or reversing of the "vicious circle" which can set in after an adverse shock to the economy.[26] A recession – or indeed a structural shortage of vacancies – clearly tends to make the monitoring of benefit eligibility criteria less effective because job vacancies and PES staff per unemployed person fall, often very sharply. It may also encourage opposition to the general principle of monitoring benefit eligibility (on the argument that unemployed people are not responsible for their unemployment and that monitoring is futile because the lack of jobs is the real problem). There is clearly a risk, especially if these ideas gain hold in a context where benefit durations can be long, that the economy may enter a new equilibrium with high unemployment and lax application of benefit eligibility criteria persisting alongside each other for a long period.

VI. Implementation issues

Institutional arrangements and procedures for implementing benefit eligibility criteria vary greatly between countries. In Australia, Belgium, Finland, Ireland and the United Kingdom, the benefit administration and placement functions of the PES come under different ministries. But in the United Kingdom, the functions are integrated at the local office level, and in Finland, established procedures make it relatively easy for the placement service to initiate sanctions. In countries such as Germany, Greece, Japan, and Norway, the benefit and placement functions are united under a single labour market agency which reports to a single ministry, but in several cases offices and staff working on benefit administration are largely separated from those working on placement.[27] Even if the functions are co-located at local office level as in Japan, vacancies may be filled almost entirely by advertising methods so that willingness to take all "suitable" work available is rarely tested. Thus, it is difficult to predict, on the basis of the institutional hierarchy, what degree of functional integration exists between benefit and placement work.

Most commonly, sanction and eligibility decisions are initiated (subject to appeal) by employment counsellors. In some countries, the counsellor can, in principle, decide directly (although counsellors commonly discuss cases with the local office manager). In other countries, the employment counsellor formally only notifies the evidence to a separate benefit administration, which takes the actual decision. In the United Kingdom, specialist benefit adjudication officers decide usually on the basis of written evidence, and in some other countries the benefit administration interviews the person prior to imposing any sanction.

Job search is evaluated not by the placement services, but by separate bodies in Ireland (the social welfare ministry), France (the state, although placement is a responsibility of another body, ANPE[28]), and Denmark and, until recently, Switzerland (insurance funds). Perhaps especially in the latter cases, it will be worth considering whether their knowledge of local labour markets, and their access to information from the job-seeker register and management of labour market programmes, allows efficient evaluation of job search. Evaluations of voluntary quits are also commonly the responsibility of the benefit administration rather than the placement service.

Many ALMPs are run by private sector organisations. They typically see their role as providing help to the unemployed and are reluctant to take on unwilling participants or to report non-attendance or misbehaviour.[29] However, when the PES purchases provision from a competitive market,[30] it can insist that AMLP providers should accept referrals and report non-attendance, etc.

Australia has recently privatised the placement function for the great majority of the unemployed. Contracts with private providers of placement services do not give

them direct financial incentives to report evidence of ineligibility for benefit (*e.g.* refusal of suitable work), but they do give an incentive to achieve rapid placements. One pattern is that private providers negotiate an individual action plan with the unemployed person, which is submitted to the relevant State office of the Department of Employment, Workplace Relations and Small Business for approval and then acquires legal force. This allows private providers to specify (within certain limits) eligibility requirements on an individual basis designed to increase the chances of a placement, and it may, in turn, encourage the private providers to report any infractions to Centrelink for a potential sanction decision.

Conclusions

Up to now relatively little attention has been paid, in either theory or empirical analysis, to the potential impacts of varying benefit eligibility criteria and their enforcement on unemployment. However, this situation is changing slowly with increasing awareness that eligibility criteria represent another instrument of labour market policy, and some countries have instituted significant reforms in recent years. While empirical evidence in this area is relatively disparate in nature and limited in terms of country coverage, it does suggest that there could be significant payoffs to major reforms in terms of lower unemployment rates. Clearly, net replacement rates and durations of benefit payments alone are not decisive for the incentive impact of a benefit system, which can be properly assessed only by analysing them together with eligibility criteria.

Analysis and policy are complicated by doubts about whether eligibility criteria can be made effective by enacting *strict* legislation. Where legislation specifies that all unemployed should accept jobs which involve a change in occupation, lower pay or long commuting times, it would not make sense to apply these criteria immediately to every person claiming benefit and probably no country does so in practice. The impact of eligibility criteria probably depends more importantly on the efforts devoted to the *implementation* of legislation. Effective implementation of eligibility criteria requires an organisational and political commitment, typically at the national level, and the extent of this commitment has varied greatly through time and across countries.

At the same time, there is considerable uncertainty about the overall effectiveness of particular methods, such as job-search reporting requirements and individual action plans, which attempt to oblige the unemployed person to take initiatives to find work. While these methods are likely to be effective to some degree, they are also likely to encourage and even unfairly reward purely formal compliance and dissimulation, *e.g.* applications for jobs which the person does not expect to get. Another form of "work test" which avoids this problem is compulsory participation by unemployment benefit recipients in active labour market programmes (ALMPs). This, however, raises a series of political, moral and practical issues, with the nature and the enforcement of the basic legal requirement to participate – as examined in this chapter – being only one of them. In general, the enforcement of eligibility criteria is greatly facilitated when sufficient levels of job vacancies are available. Not only can eligibility criteria then often be enforced through a general or targeted policy of direct referrals of job-seekers to vacancies, but also job-seekers are better able to respond to other forms of pressure to return to work.

Although underlying eligibility criteria in legislation are on average sufficiently strict, probably with room for some tightening in certain countries and areas and some relaxation in others, many countries could improve implementation by introducing a more precise legal framework for procedures such as individual action plans, reporting of independent job search and instructions from the PES, and by reforming institutional arrangements and responsibilities. Such reforms might help some more countries to embark on or prolong a virtuous circle of a trend decline in the aggregate unemployment rate accompanied by increasingly active interventions in individual spells of unemployment, such as a few OECD countries have already experienced during the 1990s.

NOTES

1. This chapter is a modified version of an article presented in September 1999 by David Grubb, OECD, to an OECD Workshop on Making Work Pay whose proceedings will appear in *OECD Economic Studies*, No. 31. Most of the information in Sections II and III and Annex 4.A has been supplied to the OECD Secretariat by countries participating in a thematic review of "Eligibility criteria for unemployment benefits and their impact on labour market outcomes". Thanks are due to all people who contributed to the thematic review. Ann-Kristin Nilsen of the Norwegian Ministry of Administration and Labour, Department of Labour Market Policy assisted in the analysis of the information, and particular thanks are due to her and to the Ministry for financing this.

2. Layard (1988) claimed "the correlation of unemployment duration with unemployment benefits is predicted by almost every known model of unemployment". Strictly speaking, unemployment benefits are predicted to increase unemployment as measured by the number of beneficiaries: to the extent that benefits discourage job search, they might reduce unemployment as measured by the standard international definition.

3. The case for excluding seasonal workers from unemployment benefit often involves considerations such as the insurance principle (foreseeable events should be excluded), need (seasonal workers may not need or merit extra help), the practical possibilities for documenting whether people are in the group or not and whether alternative work can be found for them during the slack season.

4. Unemployed people may respond to a behavioural requirement partly through substantive compliance (which increases the chance of finding work) and partly through dissimulation. Extreme behavioural requirements may have a negative impact on job-finding chances if, for example, there is a requirement for full-time participation in an active labour market programme which is inherently ineffective and reduces the time available for job search. In general models, unemployment depends upon the wage bargaining behaviour of employed workers as well as the search behaviour of the unemployed: as long as benefits provide effective insurance against unemployment, employed workers will show less restraint in wage bargaining.

5. UI legislation in Austria states that work is suitable only if it does not render a return to a person's original occupation considerably more difficult and, in practice, occupational mobility is not usually required. However entitlements to UI here are relatively short (20 to 52 weeks), and no occupational protection applies to the unemployment assistance benefit. Protection in relation to the previous wage is less common: see note 25 concerning Ireland.

6. Under much benefit legislation, people could be required to work on a job creation programme in return for continuing payment of the equivalent of their unemployment benefit (plus, perhaps, a small supplement), and the equivalent hourly wage might work out below a national minimum or standard wage rate for the activity in question. In Denmark, the list of valid reasons for refusals applies to both regular jobs and offers of programme places during the first year, then during the "active period of benefit" a shorter list applies for programme places (see also Annex 4.A).

7. In Belgium, unemployment insurance payments are in some cases, after a period of around 5 years, stopped unless the person supplies evidence that they have made exceptional and continual job-search efforts. In Spain, although the regular UI benefit has no clear search requirement, long-term unemployed workers aged over 45 with family responsibilities can apply for an "active re-employment income", which is conditional on active job search and agreeing to a personal re-employment plan, etc.

8. Continental European countries, other than the Netherlands and Switzerland, do not require frequent reporting of independent job-search. This is certainly related to a historical view of PES work in which all vacancies should be reported to the PES (many countries had, and some still do have, a legal requirement on employers to report all vacancies to the PES) and the PES should directly manage the allocation of them to the unemployed. The PES has often partly abandoned direct referral methods (*i.e.* it more often fills vacancies by advertising methods) but independent job-search requirements may still be seen as inappropriate for other reasons (*e.g.* they are regarded as oppressive and futile in situations where few vacancies are available and employers already have too many candidates).

9. In all countries examined here except Belgium, Japan, New Zealand and possibly France and Spain, behaviour or statements that deliberately discourage a potential employer can be assimilated to refusal of work and sanctioned even though no actual job offer has been made. In New Zealand, such behaviour is assimilated to an administrative infraction (which involves a smaller sanction).

10. Finn *et al*. (1998, pp. 28-31) report that many unemployed people in the United Kingdom do not know exactly what legislation requires of them, but are likely to co-operate with suggestions from PES staff because they fear that a sanction might otherwise be applied.

11. If the incidence of long-term unemployment (over 6 months and over 12 months) is modelled assuming one fixed hazard rate during the first six months and another thereafter, the expected further duration of unemployment is about 7 months at month zero and 14 months from month 6 onwards, for a country where the incidence of unemployment over 6 months is 50 per cent. Durations are typically somewhat lower in data for registered unemployment [OECD (1994*a*), Statistical Annex].

12. Some countries have sanctions for failure to report income (undeclared working), which not surprisingly are more severe than sanctions for refusal of work. But other countries appear to deal with this infraction by requiring repayment of benefits received incorrectly and also prosecuting the person when significant amounts of money are involved.

13. Clearly many benefit stops on general eligibility grounds, *e.g.* when the person becomes entitled to a disability benefit, enters employment, or simply ceases to report for unknown reasons, cannot be assimilated to sanctions.

14. In Japan, the period of sanction following a voluntary quit runs from the time of the initial application for benefit, so people who have quit work have an incentive to apply immediately despite the sanction. In New Zealand, the sanction period runs from the time of the quit irrespective of when the benefit application is made, so people who are certain that they will be sanctioned have no incentive to apply (until the end of the sanction period) and administrative statistics understate the effective number of sanctions.

15. Even though self-service is the main job-broking technique used by the PES in the United Kingdom and the United States, specialised literature also describes "case management" procedures in these countries. Their experience may indicate that a targeted use of direct referrals for a relatively limited proportion of job-seekers and vacancies can verify eligibility as effectively as a more generalised use of direct referral techniques. In the United Kingdom, two programmes involving up to six or seven (usually fortnightly) interviews with the long-term unemployed each had about 200 000 participants in a recent year [Finn *et al.* (1998), p. 82] and direct matches in this context could account for the reported number of sanctions for refusal of work.

16. Although appeal procedures are not described here, in some countries a large proportion of initial sanction decisions are appealed and are overturned or withdrawn at administrative discretion.

17. Norway has detailed guidelines describing circumstances under which the requirement for geographic mobility are relaxed (*e.g.* when the job-seeker has children of school age, who have already moved and changed school once). The existence of such guidelines tends to confirm that the general requirement for mobility is quite often applied. In some other countries, individual circumstances may be taken into account through jurisprudence, but rules developed this way may not take into account the needs of labour market policy.

18. Although sanction rates cannot always be a reliable guide to the extent of enforcement of an eligibility criterion, it does seem reasonable to interpret very low sanction rates (*e.g.* when less than one in a thousand referrals to jobs are followed by a sanction for refusal) as indicating a lack of enforcement. Increases in sanction rates over time in the Netherlands and the United Kingdom can be cited as evidence of a drive to improve enforcement. Nevertheless, in an international comparative context a 2 per cent sanction rate may enforce eligibility criteria more effectively than a 5 per cent rate: too many other things will not be equal.

19. In both Norway and Finland, the PES attempts to implement an "action plan" procedure and to monitor independent job search (*e.g.* encouraging the unemployed to keep a job-search booklet documenting the job applications they have made) without specific legislation to enforce these measures. This arrangement works reasonably well in Norway but less so in Finland. In Norway (where suitable work criteria are strict and direct referrals to vacancies are relatively frequent), the unemployed may perceive a greater incentive to co-operate with suggestions made by PES officers because the PES decides what kind of job offers will be made.

20. International variations in benefit coverage are driven by entitlement conditions more than by eligibility conditions (*e.g.* benefit coverage in the United States is low compared with European countries primarily because of the prior-work requirements and the six-month limit on benefit duration).

21. Reported regressions which explain unemployment across countries using multiple explanatory variables are usually the tip of a large iceberg of alternative specifications which were not followed up. Often the equation actually reported has an implausibly tight statistical fit, given the size of known errors in the input data and short- and medium-term fluctuations in unemployment rates. The real significance of such findings is not clear.

22. The basic eligibility requirements that the person must register for employment, be capable of work and available for work and accept suitable work, go back to the inception of unemployment benefit systems. OECD reviews of national manpower policies published between 1963 and 1977 report some detailed eligibility criteria which resemble those considered here: for example in Sweden a benefit sanction applied in the case where a person "without expressly refusing a job, has clearly acted in such a way as to prevent his employment" (OECD, 1963) and in Belgium "a job is deemed to be suitable if it corresponds to the normal job of the person concerned; where unemployment is prolonged, the requirement becomes less strict" (OECD, 1971). In some cases benefit sanctions were shorter than today, no doubt related to the fact that unemployment spells were shorter. Implementation may have varied more sharply through time than the basic criteria. In 1969, the *rapporteur*

of an OECD Working Party noted disapprovingly that "the employment office is sometimes regarded as an adjunct of the unemployment insurance system and as a legalistic institution when it becomes excessively involved in matters turning on statutory requirements such as eligibility for benefits, disqualifications for benefits, and tests of 'suitable' employment", and claimed that past experience had shown the use of compulsory powers "sets in motion counter actions which vitiate its efforts and are self defeating" [Levine (1969)]. Some other OECD publications from this period reflect this view. A detailed study and manual for the employment service issued by the ILO stated that the employment counsellor should never refer jobseekers to less qualified jobs [Ricca (1982), p. 140]. In general terms, the attention given to enforcement of eligibility criteria probably declined in the 1970s and 1980s and increased again in the 1990s.

23. The UK government elected in 1997 eased the implementation of benefit sanctions, but through the New Deal it made entry into longer-term work, training or related measures compulsory for all unemployed beyond a certain duration of unemployment.

24. MoF (1998) scores both Denmark and the United Kingdom below the OECD average in terms of the overall strictness of benefit eligibility criteria, a measure that includes the duration of benefit sanctions. It scores the Netherlands relatively high due mainly to its new sanction regime for UI (although many unemployed here receive assistance benefits, for which the sanction regime is much milder).

25. In Ireland, by late 1996, although unemployment as measured by the labour force survey had already fallen sharply from its peak, the total number of benefit claims had fallen hardly at all. Investigation of this paradox eventually led to an anti-fraud drive. At the same time, Ireland began to require some groups of unemployment beneficiaries to register with employment offices [OECD (1998), pp. 135-147]. In April 1997 existing administrative guidelines on availability were published for the first time, and in June 1998 legislation was extensively amended through new Regulations on Availability and Genuinely Seeking Work (S.I. No. 137 of 1998). These dropped earlier clauses allowing refusal of work at a rate of remuneration lower than habitually obtained [as reported in MoF (1998)] and specified, for example, that jobseekers must in the current economic climate be prepared to change occupation after 3 months of unemployment, and must show that they have taken reasonable steps to secure employment (website www.cidb.ie, items under Social welfare/Unemployment Assistance/General). In late 1998, under Ireland's Employment Action Plan young people were required, after six months of unemployment, to take up a job or training or risk loss of benefit (website *www.cidb.ie*, items under Mediascan). Despite moves in this direction, the regular checking of eligibility criteria remains less vigorous than in, for example, the United Kingdom.

26. Tight benefit eligibility criteria and implementation of them might help explain why Norway has kept unemployment low in the 1990s while Sweden and Finland succumbed to adverse shocks. Although Norway and Sweden have similarly strict suitable work requirements, they have different institutional arrangements. A recent report by Sweden's National Audit Office (RRV, 1999) concludes that institutional arrangements are a fundamental obstacle to the development of effective control mechanisms for unemployment insurance and leave room for wide fluctuations in the interpretation and application of suitable work criteria, and that the application of suitable work criteria should be overhauled as an urgent matter of national significance. In Finland, eligibility criteria are not so strict in certain respects (*e.g.* requirements for geographic and occupational mobility) and some general concerns about their effectiveness have been expressed [*e.g.* the central duties of the job-seeker arising from unemployment security "do not require him to show initiative or activity in job-seeking" and are "more appropriate for managing short-time and temporary unemployment rather than employment situation our country has today", according to Räisänen and Skog (1998), p. 150].

27. In Spain, the benefit and placement functions were for many years institutionally integrated, but responsibility for the placement but not the benefit function is currently being decentralised to regional governments.

28. Three bodies, each with specific responsibilities, are involved in the verification of eligibility conditions in France: the benefit administration ASSEDIC; the placement service ANPE; and the state SCRE. In addition to the checks initiated directly by SCRE, ASSEDIC and ANPE notify SCRE if their own checks suggest doubts about eligibility for benefit, notably the reality of job search.

29. The behaviour of programme providers may help explain the common tendency for eligibility requirements to tighten when labour market conditions improve. As the number of voluntary participants in programmes falls, providers have to take on more difficult clients and drop any opposition to compulsory referrals if they are to stay in business.

30. An employment services market which is competitive in the sense that the unemployed can select among providers, and funding follows them, has different implications from one where the PES selects among providers. In Switzerland, the unemployed can choose among UI funds and competition for business among the private sector funds may be leading them to impose fewer benefit sanctions than the public sector funds [OFDE (1999*b*)].

Annex 4.A

Some International Differences in Eligibility Criteria for Unemployment Benefits

Information in this annex refers to thirteen countries: Australia, Belgium, the Czech Republic, Denmark, Finland, France, Germany, Japan, New Zealand, Norway, Spain, Switzerland and the United Kingdom. Some errors may remain in the descriptions, particularly errors of omission (*i.e.* the cases cited may not represent a comprehensive listing of all that could be cited). The information is based on legislation and other material, in many cases as supplied for the OECD thematic review of labour market behavioural criteria for unemployment benefits.

Loss of work and its timing

Seasonal and intermittent work

Finland, and probably some other countries, pay benefits to seasonal workers without reservations. However, the authorities in many other countries appear reluctant to do this. In Denmark and France, seasonal workers may be entirely disqualified from benefit during the slack period. In Australia and Switzerland, an extended waiting period may be applied. However, no country has found a very satisfactory operational definition of seasonal work or intermittent work. Switzerland includes in the concept of self-inflicted unemployment the leaving of a job that is likely to be long-term in order to take another which the person knows, or ought to know, is likely to be short-term. Guidelines in the United Kingdom are similar.

Part-time work

In some cases, unemployment benefits are payable during short-time work (when the employment contract has not been broken, but hours of work have been reduced). Benefits are payable only if weekly working hours are reduced by at least 7.4 hours in Denmark, at least 25 per cent in Finland and at least 40 per cent in Norway. Wholly unemployed people who take part-time work can often retain beneficiary status (subject to the impact of earnings on the amount of benefit payable), but in Germany only if the work is for less than 15 hours per week and New Zealand only if it is for less than 30 hours per week.

Self-employment, unpaid family work and household production

Most countries have strict requirements for proof that a self-employment activity has terminated, or apply an additional waiting period before unemployment benefit is payable. A few countries have strict or detailed legislation about family work, unpaid work and household production: Belgium specifies several general conditions which imply that, for example, work on renovating a property with a view to selling it is incompatible with the receipt of benefits; in France, there are specific limits on the amount of agricultural land that an unemployed person can cultivate; and in Spain, benefit is incompatible with any form of self-employment (except under official schemes promoting co-operatives and business start-ups). Most countries have no such formal restrictions on the amount of household production for personal consumption during unemployment, and in the United Kingdom work on a community self-build housing project has been ruled to be compatible with the receipt of benefits.

Voluntary quits

Insofar as statistics are available, in the 13 countries considered here (in contrast to Canada and the United States) benefit sanctions following dismissal for misconduct at work are relatively rare and quit is the main form of voluntary unemployment. All countries recognise that serious misbehaviour by the employer can justify a quit. In Spain, jobs quits for any personal reason lead to loss of the entire benefit entitlement and in Japan, the only personal reason that can justify quit from a job is a decline of physical ability to do the work. But most other countries recognise a number of personal reasons why a quit which appears to be voluntary from the point of view of the employer may be involuntary from the point of view of the individual.

Suitable-work-type criteria often justify quits (*e.g.* if a change in transport facilities has made the journey to work unacceptably long, if the person has a health problem leaving them unable to continue in the current job or if the person needs to change jobs in order to permit care for relatives). Criteria for quitting are sometimes stricter than the criteria for accepting suitable work (*e.g.* voluntary quit from a job paid on commission or involving lengthy transport to work may be sanctioned even though the person in question could not be required to take such a job starting from an unemployed status).

Quit when moving home with a spouse who is taking up work in a different area is generally not sanctioned. Norway is an exception (*i.e.* an extended waiting period would normally be applied in this case), and in the United Kingdom claimants must show they have done everything reasonably possible to find employment which they will be able to start immediately in the new area.

Quit during a trial period. Voluntary quit provisions may dissuade people from taking up a new job because it may turn out to be unexpectedly unpleasant or impractical and yet the person will be sanctioned if they leave it. In France and the United Kingdom, benefit sanctions are automatically inapplicable in certain predefined cases of quits during the early months of a new job.

Availability for work

Delay before taking up work and hours available for work are tightly defined in some countries. A requirement that the unemployed must be available to start work within 24 hours and be willing to accept shift work, for example, allows the PES to guarantee (to employers) the speed of referrals and the filling of shift-work vacancies. As a general rule, the United Kingdom requires the unemployed to be able to start work immediately, but in France the unemployed can be absent from their usual residence for up to a week without informing the PES.

Family responsibilities and voluntary work may be associated with limited availability for work, or lead to a suspicion that the person does not really want market work (*i.e.* prefers to continue combining voluntary work or child care with an income from unemployment benefit). In most countries, permissible hours of voluntary work are restricted in some way, independently of any direct evidence that they reduce availability for market work. Many countries vary availability requirements in some way in the presence of child care constraints, but there is little consistency across countries. Some countries shift mothers onto a different benefit or a variant form of unemployment benefit. Thus, in Denmark and Japan people who have been in part-time work have different benefit entitlements with the availability requirement also limited to part-time work. Belgium has created a separate benefit (not requiring availability for work, with claim duration limited to five years) for people with family responsibilities, at a slightly lower benefit level. Where regular unemployment benefit is still received, availability requirements may be relaxed. People with childcare responsibilities in the United Kingdom, and sole parents or partners of beneficiaries with the oldest child aged 6 to 13 in New Zealand, can restrict their availability to part-time work. In several countries, the allowable delay before taking up work is increased for people who will need to find alternative child care. At the same time, in Australia the PES interprets receipt of a parenting allowance by the job-seeker's partner (the usual situation for an unemployed couple with young children) as a risk factor that may require increased surveillance of job search.

Suitable work

"Suitable work" here means work that a person cannot refuse without risking a benefit sanction. Many issues arise in defining it.

Working conditions and type of work

In Finland and Norway, the unemployed must generally accept shift work and night work, whereas in Belgium night work is not generally considered suitable and in New Zealand a job which requires a person to work on a Saturday or Sunday when the person has other commitments on those days may be considered unsuitable. Several countries allow people with availability restrictions (child care constraints, disability) to restrict search to jobs with a suitable schedule, and in the United Kingdom all unemployed can specify such a restriction, provided that a sufficient number of jobs will still be available after this restriction. All countries consider casual or temporary work to be suitable, although some have only recently legislated to make this explicit, sometimes also with an explicit exception for the case where the temporary job would interfere with an offer of a permanent job to start later. Most countries consider part-time work suitable as long as net income (including partial unemployment benefit) is not reduced by entering work, but in the United Kingdom the unemployed can reject jobs of less than 24 hours per week. In France, apprentice contracts are considered suitable work, though they may pay below the minimum wage. Some countries specify that work paid only on commission is not suitable. Only Australia (in the context of its action plan, the Newstart Activity Agreement) and Norway have an explicit basis for disqualifying a person who insists upon seeking dependent employment when he or she could make a living through self-employment.

Travel to work time and cost, and geographic mobility

In standard cases, work involving up to two hours per day of travel-to-work time is considered suitable in the United Kingdom, up to three hours in Australia, Germany and Denmark (first three months of unemployment), and up to four hours per day in Belgium, Denmark (after three months of unemployment) and Switzerland. Several countries cite no specific figure. In Norway, the unemployed are generally required to accept work anywhere in the country, so the question of excessive travel-to-work time does not arise. In France, Japan and Germany, relocation can be refused if family life would be unduly disturbed. In Japan it can be refused if the company provides no facilities or company housing and in Spain, if no suitable accommodation can be found. In Australia and the United Kingdom, a placement involving relocation can be considered suitable if there is little prospect of finding a job without relocation (although in neither country are the guidelines on this point very clear). In Finland, such a placement can be suitable only if the vacancy in question cannot be filled locally. New Zealand never requires relocation. However in several other countries legislation never mentions geographic relocation, and the limits on reasonable travel-to-work time presumably take precedence.

Occupational and wage protection

In France, work incompatible with the beneficiary's work specialisation or previous training is never considered suitable, although this is interpreted with some flexibility and work with wages 20 to 30 per cent lower than the previous job may be considered suitable. Work outside the usual occupation is not considered suitable during the first three months of unemployment in Denmark, Finland and the United Kingdom, and during the first six months in Belgium. In Australia, Germany, Norway and Spain, work in a different occupation is considered suitable from

the first day of unemployment. Wage protection (except in the sense that the work must be paid according to collectively bargained rates) is relatively unusual although Germany and the United Kingdom allow some wage protection for 6 months (in Germany, work paying more than 20 per cent below previous earnings during the first three months and more than 30 per cent below during the next three months is not suitable).

Conscientious and religious objections

Australia, Belgium, New Zealand and the United Kingdom state clearly that work inconsistent with sincere and genuinely-held moral or religious convictions (*e.g.* work on Sundays, arms production, etc.) is not suitable. Finland and Norway state that religious and ethical convictions are not generally grounds for refusing suitable work, and in many other countries' legislation, the person has no legal grounds for refusal because legislation never mentions the issue. Administrators tend to assert, however, that, in practice, appropriate discretion is exerted.

Labour market programmes

In most countries, general legislation requires unemployed people to accept placements into any kind of official or approved labour market programme. In the United Kingdom, the requirement applies only to a specific list of official programmes. In some countries, it is not clear that the unemployed person could object to the "suitability" of the LMP placement, but, in others, programmes must meet "suitability" criteria similar to those applying for a job placement although occasionally some particular objections (*e.g.* on the basis of travel-to-work time, during the "active period of benefit" in Denmark) are disallowed or different objections (*e.g.* that a vocational training course will not improve employment prospects) are admissible. In Belgium, France, and Japan, general legislation mentions only vocational training programmes, but subsidised work programmes in Belgium and France are designed to conform with "suitable work" criteria, so that participation can still be imposed. Belgium also has specific legislation for its Agence Locale pour l'Emploi work programme. Programmes may, of course, be filled entirely by advertising-type methods even when there exists a legal basis for making participation obligatory: as in other areas, legislation is not a reliable guide to practice.

Independent job search

General legal obligation and specific reporting requirements

Countries can be divided into those where independent job search is not normally required at all (*e.g.* Belgium, the Czech Republic and Spain, although see endnote 7), those where independent job search is required in principle but there is no requirement for recording or reporting it frequently or by a particular method (*e.g.* Denmark, Germany and Norway), and those with explicit guidelines about the reporting process (which includes France) and those which also specify a minimum acceptable frequency of job applications or other acts of job search (which includes Australia, Switzerland and the United Kingdom). New Zealand has a general requirement which is enforced only where a reporting requirement has been included in an individual action plan. In Japan, primary legislation does not refer directly to job search, but job-search activities must be stated on four-weekly declaration forms as proof that the general "willingness to work" requirement has been fulfilled during the reference period.

Contacts with the Public Employment Service (other than in relation to job offers or job search)

Legislation generally requires as a condition for benefit that the person register with the placement service, sign on or otherwise confirm the continuation of unemployment at specific intervals and in a specific way, and participate in assessments and attend interviews and collective information sessions as instructed. More unusual provisions include a requirement that the person remain contactable *e.g.* by mail (this is implicit everywhere, but often not explicit), a requirement that the claimant should formally acknowledge his or her duties as a benefit recipient (*e.g.* sign a document that lists the obligations), and the United Kingdom's specific requirement for compliance with (reasonable) written instructions from PES officers (the Jobseeker's Direction: *e.g.* if lack of a current driving licence is a barrier to placement the instruction issued might be "renew your driving licence").

Individual action plans

An individual action plan is a document negotiated between the unemployed person and a PES officer, signed by the unemployed person, describing actions to be undertaken by both parties. Australia, Belgium, Denmark, Finland, New Zealand, Norway and the United Kingdom use some such procedure. In Finland and Norway, the action plan procedure is not explicitly mentioned in benefit legislation (in Finland it is mentioned in labour market policy legislation) and failure to co-operate could only be sanctioned under some very generally-worded provisions (in Finland, a requirement for co-operation with measures intended to promote the chance of finding employment). In the other countries, the obligation to co-operate with the procedure and carry out the actions entered into the plan are explicit. However in Belgium, Finland and Norway, there is no legal basis for the PES to insist upon including, in the plan, actions that are not required under general benefit legislation. Legislation in Australia lists some additional requirements that can be included. Legislation in the United Kingdom allows the PES to include any "reasonable" action in the plan, subject to appeal.

The New Zealand *Job-seeker Contract* at initial registration often covers only general recognition of rights and duties. The UK *Jobseeker's Agreement* at initial registration defines not only actions to be undertaken but also availability for work (*i.e.* restrictions that the person wishes to place on working hours, occupation, pay, etc. must be stated and included, subject to negotiation, in the Agreement if they are to be valid). In other cases, the action plan is established only after some months of unemployment.

Variation of requirements

Older workers

Older workers can get benefit without being available for work as from the age of 50 in Belgium (if they are unemployed for 12 months), and from age 55 in France (if they are on the lowest level of benefit, otherwise $57^{1}/_{2}$), 57 (usually) in Finland, 58 in Germany, and 60 in the United Kingdom (transfer to Income Support) and Australia (if unemployed for at least nine months). In New Zealand, as from age of 55 (if unemployed for at least six months) "reasonable steps to secure employment" are still required in principle, but no specific requirements that could lead to sanctions are applied. Australia allows people aged over 50 to continue in voluntary work or in a part-time job paying at least 35 per cent of average male full-time weekly earnings without looking for any other work. Norway allows people aged over 60 to be available only for part-time work, and drops the geographical mobility requirement for them. By contrast, in Denmark unemployment benefit can be paid up to age 67 with no variation in principle of requirements for availability and suitable work (though many workers are able to transfer to an early retirement benefit). In Japan, people who are dismissed upon a reaching company retirement age are allowed to delay their application for benefit for up to a year, without loss of total entitlement.

Youth

Many countries have labour market programmes targeted on youth. For youth aged under 25 and unemployed for more than six months, Denmark has removed the right to passive unemployment benefits and other countries have specific requirements for participation in programmes (*e.g.* Mutual Obligation in Australia, the New Deal in the United Kingdom). Finland has entirely removed the right to passive benefits for youth aged under 25 without a vocational qualification, subject to the person being offered a suitable programme place.

Pilot schemes

Benefit legislation in Switzerland and the United Kingdom explicitly allows pilot (*e.g.* local) variations in eligibility regulations to be implemented subject to certain constraints

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Chapter 5

THE PARTIAL RENAISSANCE OF SELF-EMPLOYMENT

Summary

During the 1990s, self-employment grew faster than civilian employment as a whole in most OECD countries. This contrasts with the 1970s, when the share of self-employment tended to fall. At the same time, the proportion of self-employed with employees, which had been falling during the 1970s and 1980s, stabilised during the 1990s. This chapter aims to identify the areas of the economy where self-employment has increased fastest, and to investigate the forces that have caused these signs of renaissance. It also discusses the concerns that are sometimes expressed about the working conditions of the self-employed.

Self-employment growth has been concentrated in the fastest-growing parts of the economy. In some countries, an important part of its growth, particularly during the 1980s, has come from women. The structure of self-employment is thus tending to become more like that of employment as a whole. Indeed the distinction between self-employment and wage employment may have weakened, as suggested by the growth of certain forms of employment, such as franchising, which have features of both forms of employment. In addition, several countries, at different times, have seen growing numbers of self-employed people who work for just one company, and whose self-employment status may be little more than a device to reduce total taxes paid by the firms and workers involved – the phenomenon of so-called "false" self-employment. On average, the working conditions of the self-employed seem to be less favourable than those of employees doing similar work, and they are less likely to report training, or the use of computers. Nonetheless, they tend to report higher job satisfaction, especially if they are employers.

An examination of the countries where self-employment has grown fastest, including Canada, Germany and the United Kingdom, suggests there is no unique set of causes. Some of the growth in self-employment may have been generated by the opportunities it offers to pay less taxes; some stems from changes in industrial organisation, such as the increase in outsourcing; and some is no doubt simply a response to the new opportunities offered by OECD economies. Policy may also have played a role, as governments in an increasing number of countries have sought to use self-employment both to reduce unemployment and foster entrepreneurship. In connection to this, a number of governments have recently introduced special policies to facilitate entry into self-employment for women and young people.

Introduction

Self-employment has become a significant source of job growth in many OECD countries. In several it has recently grown considerably faster than civilian employment as a whole – notably in Canada and Germany. The recent picture contrasts with the 1970s, which saw the share of self-employment in total employment fall in the majority of countries. Self-employment is also an important source of entrepreneurship and small business growth – bringing with it a potential for longer-term employment growth [OECD (1998*a*)]. On the other hand, concerns have been expressed over the working conditions, training, security, and incomes of some self-employed.

A number of overlapping reasons have been put forward for these signs of renaissance in self-employment. First, there have been suggestions that it might be a reaction to overly-rigid labour and product markets and high levels of taxation. Second, some analysts have pointed to changes in industrial organisation. A greater stress on outsourcing of non-core activities may have increased the amount of work sub-contracted to the self-employed. Some networks or "clusters" of small, self-employment businesses have shown greater flexibility and speed of response than traditional firms. Third, it has been argued that the increase in the numbers of self-employed is best understood as the response by individuals to the new opportunities becoming available in OECD economies.[1]

In addition, over recent years, many governments have increased their efforts to foster self-employment. Barriers to entry, such as overly-complex or expensive procedures for setting up companies, have been addressed. Potential shortfalls in various types of capital have been tackled through policies to provide easier access to finance, training, and networks of contacts. Special attention has been given to groups under-represented in self-employment, including young people and women. However, in some countries there has been concern that taxation systems, and perhaps labour market policies as well, might have encouraged the development of "false" self-employment – people whose conditions of employment are similar to those of employees, who have no employees themselves, and who declare themselves (or are declared) as self-employed simply to reduce tax liabilities, or employers' responsibilities.

In order to illuminate the nature of the recent growth in self-employment, and the role of government policy, this chapter addresses the following questions:

- Which countries have seen the strongest growth in self-employment, and what forces lie behind this?
- What are the main structural changes in self-employment?
- How do the working conditions of the self-employed compare with those of employees? How do they compare as regards job satisfaction? How many of the population express a preference for self-employment and what types of people are they?
- What are the recent trends in labour market policies in favour of self-employment and what can be said about their effects?

According to the standard international definitions, self-employment jobs are ones where remuneration is directly dependent upon profits, and incumbents make operational decisions or are responsible for the welfare of the enterprise (see Annex 5.A for further details). Most data on self-employment come from national labour force surveys, which ask respondents to classify themselves as employees or self-employed according to their status in their main job. In general, this method gives results which correspond fairly closely to the definition required. However, there are some important exceptions, particularly owner-managers of incorporated businesses, who represent a substantial proportion of self-employment in some countries – 31.4 per cent in the United States in 1998, for example.[2] These are people who own their business and are responsible for its operation, but who are, legally, employees of the business. For labour market analysis, they are best classified as self-employed. However, because their legal status is that of an employee of their company, they may identify themselves as employees in response to a labour force survey. Annex 5.A describes what is known about national classification systems in this respect. The tables below are annotated accordingly.

Statistics on self-employment distinguish three main sub-categories: self-employed without employees, or "own-account workers"; self-employed with employees, or "employers"; and unpaid family workers. The analysis in this chapter generally excludes unpaid family workers on the grounds that, according to the international guidelines, they are not entrepreneurs, but rather the assistants of entrepreneurs. The term, "self-employed", thus generally refers to the sum of "own-account workers" and "employers". This omission probably tends to understate the true level of women's entrepreneurship. Some women classified as unpaid family workers in national statistics might better be treated as equal partners with the self-employed person who is in formal charge of the business [Felstead and Leighton (1992); Marshall (1999)]. However, in 1996, the proportion of unpaid family workers among women working outside agriculture was only 3 per cent (unweighted average for the 23 countries for which data are available).

Apart from unpaid family workers, the analysis in the chapter also excludes the agricultural sector, except where otherwise stated. This sector has a relatively high proportion of self-employed workers, but it has been declining in size in all Member countries over recent years.

The structure of the chapter is as follows. After identifying where self-employment has been growing fastest, Section I analyses the changing structure of self-employment, in particular, the proportion of the self-employed who are employers and may add to employment growth through employing others. An analysis of flow data in Section II provides evidence on the proportion of unemployed people who become self-employed, and the numbers of own-account workers who become employers. Section III discusses the working conditions of the self-employed, including newly-available information on the job-satisfaction of the self-employed, and preferences for self-employment. Section IV reports the results of econometric analyses designed to investigate the importance of some commonly-cited explanations for the development of self-employment. This leads into the final two sections, which summarise recent policy developments, and draw some conclusions.

Main findings

- Self-employment has tended to increase its share of non-agricultural civilian employment over the past three decades. Over the 1990s, its growth rate exceeded that of civilian employment in most OECD countries

and the proportion of self-employed with employees stabilised, after falling in the 1970s and 1980s.

- The growth in self-employment has been concentrated in the fastest growing sectors of the economy, notably business and community services. The strongest growth has been seen in the higher-skilled occupational groups.
- The proportion of women entering self-employment, as opposed to wage and salary employment, picked up at the beginning of the 1980s. Since then, women have increased their share of self-employment in the majority of OECD countries.
- The link between self-employment and wage and salary employment is strong. Most self-employed people were previously in wage and salary employment, and a substantial proportion of the self-employed enter (or re-enter) wage and salary employment. Franchising – an example of a form of self-employment which shares a number of the characteristics of wage employment – has been growing rapidly in many OECD countries.
- Only a very small proportion of unemployed people find employment through self-employment, as opposed to wage and salary employment. Surprisingly, this inflow appears to be relatively unaffected by recessions.
- Very few own-account workers (self-employed people without employees) become employers, over the course of a year. Most employers report no change in their status over the previous year, but those who do are as likely to have been employees as to have been own-account workers.
- The working conditions of the self-employed differ from those of employees in a number of ways, even after allowing for a number of differences in the types of jobs they do. Self-employed people tend to report poorer working conditions, including longer hours of work, and (unless they are employers) less training, less use of computers, and feelings of lower job security. Nevertheless, the self-employed consider they have greater control of their working conditions than employees, reflecting their higher degree of independence. This may be one of the main reasons why the self-employed generally report higher levels of job satisfaction than employees – especially if they are employers.
- Employees and labour market entrants display a considerable degree of interest in self-employment, particularly young men with above-average educational qualifications. However, in Europe, almost a fifth of self-employed people report wishing to change to wage and salary employment, at least in the short-term.
- An econometric investigation has failed to find a consistent set of explanatory factors across countries. One possible exception is the growing share of national income accounted for by capital. This is a development which might be expected to favour self-employment, whose income comes partly from their capital and partly from their labour.
- Governments in almost all countries have introduced schemes to assist unemployed people become self-employed. In addition, a number of countries have recently introduced programmes targeted on young people and women. In general, the absence of an "evaluation culture" in most countries makes it very difficult to assess the cost-effectiveness of these schemes. However it seems clear that schemes for unemployed people can appeal only to a small minority of the unemployed, particularly those with above-average educational qualifications and previous work experience.

I. Changes in size and structure[3]

In many countries, the growth in non-agricultural self-employment has overtaken total non-agricultural employment over the past 25 years (Tables 5.1 and 5.2). For the broad economic cycles, 1979-90 and 1990-97,[4] self-employment growth was faster than civilian employment, overall. Over the recent period its growth outstripped civilian employment growth in 15 out of 24 countries. This contrasts with the 1973-79 cycle, when the average growth rate of self-employment was considerably lower than total employment. A number of countries stand out for their particularly rapid growth in self-employment, relative to total civilian employment, over the 1990s – Canada, Germany,[5] Iceland, Mexico and the Netherlands.

Chart 5.1 shows the change in the distribution of self-employment rates for the 20 countries for which data are available for 1979, 1990 and 1997. It can be seen that the median value has risen, as has the highest value. However, there is no evidence of any convergence in the rates between the different countries. In 1997 the share of self-employment in total employment varied from 5 per cent in Norway to almost 30 per cent in Greece and Mexico.

In demographic terms, the most striking development is that the growth rate of the numbers of women self-employed has increased over the past two decades, and outstripped men in the large majority of countries (Table 5.3). The proportion of self-employed who are women has also grown. To a large extent these developments mirror the increase in the proportion of women in civilian employment as a whole. However, in addition, the

Table 5.1. Non-agricultural self-employment,[a] 1973-1998

Thousands and percentages

	1973	1979	1983	1989	1990	1994	1996	1997	1998
	Numbers								
Australia[b]	508	706	707	947	958	943	933	1 016	958
Austria[c]	294	242 |	230 |	202	208	230	235	242	254
Belgium[d]	394	397	416	460	469	508	513	517	516
Canada[d]	..	1 007	1 204	1 490	1 563	1 804	1 940	2 160	..
Czech Republic[c]	..	..	..	..	..	454	539	554	642
Denmark[e]	201 |	208	188	170	179	161	177	171	178
Finland[e]	115 |	118	146 |	194	198	183	201	201	207
France[e]	2 111	2 051	2 047	2 104 |	1 926	1 817	1 783	1 808	1 750
Germany[e]	2 259	2 024	1 821	2 037	2 092 |	2 934	3 112	3 191	3 247
Greece[e]	..	732 |	691	745	775	840	848	834	..
Hungary[d]	..	..	..	..	..	274	457	440	437
Iceland[c]	6	6	7	13	13 |	18	19	19	20
Ireland[e]	81	94	99	118	127	144	151	159	182
Italy[c]	3 583	3 234	3 683	4 229	4 296	4 117	4 280	4 245	4 279
Japan[b]	6 390	6 790	6 910	6 820	6 670	6 130	5 940	6 000	5 940
Korea[e]	..	..	..	..	3 233	3 949	4 371	4 562	4 357
Luxembourg[c]	15	14	13	13	13	..	..	..	..
Mexico[e]	..	..	..	..	3 600	5 953	6 852	7 241	7 703
Netherlands[e]	..	400 |	404 |	448	469 |	596	656	693	695
New Zealand[c]	..	106		193	193	221	246	249	266
Norway[f]	114	112	119	120	114	116	109	111	113
Poland[e]	..	..	..	..	..	1 301	1 327	1 399	1 991
Portugal[c]	307	323	539	583	640	750	781	758	..
Spain[d]	1 584 |	1 499	1 524	1 874	1 901	1 983	2 093	2 119	2 136
Sweden[e]	172	177	190 |	304	313	340	351	345	349
Turkey[e]	..	..	..	2 523	2 615	2 863	2 927	3 018	3 054
United Kingdom[e]	1 748	1 620	1 949 |	3 210	3 257	3 002	3 005	3 050	3 027
United States[b]	5 451	6 751	7 540	8 561 |	8 669 |	8 955	8 929	9 017	8 924
	Share of non-agricultural civilian employment								
Australia[b]	9.5	12.4	12.1	12.9	12.9	12.5	11.8	12.9	11.8
Austria[c]	11.7	8.9 |	8.1 |	6.6	6.6	6.6	6.9	7.0	7.4
Belgium[d]	11.2	11.2	12.3	12.9	12.9	14.1	14.1	14.1	13.9
Canada[d]	..	9.9	11.4	11.8	12.3	14.0	14.7	16.0	..
Czech Republic[c]	..	..	..	..	..	9.9	11.7	11.9	13.2
Denmark[e]	9.3 |	9.2	8.5	6.9	7.2	6.8	7.1	6.7	6.9
Finland[e]	6.4 |	6.1	7.0 |	8.7	8.8	9.9	10.3	10.0	10.0
France[e]	11.4	10.6	10.5	10.5 |	9.3	8.8	8.5	8.6	8.2
Germany[e]	9.1	8.2	7.4	7.8	7.7 |	8.5	9.0	9.2	9.4
Greece[e]	..	32.0 |	27.9	27.2	27.4	28.0	27.5	27.0	..
Hungary[d]	..	..	..	..	..	8.1	14.0	13.4	13.1
Iceland[c]	8.3	7.1	7.3	11.2	11.3 |	14.5	15.0	14.2	14.8
Ireland[e]	10.1	10.4	10.7	12.9	13.4	13.6	12.8	12.9	13.4
Italy[c]	23.1	18.9	20.7	22.4	22.2 |	22.3	23.0	22.7	22.7
Japan[b]	14.0	14.0	13.3	12.0	11.5	10.1	9.7	9.7	9.7
Korea[e]	..	..	..	..	21.8	23.0	23.8	24.4	24.9
Luxembourg[c]	11.1	9.4	8.8	7.4	7.1	..	..	..	..
Mexico[e]	..	..	..	..	19.9	24.7	25.8	26.2	25.7
Netherlands[e]	..	8.8 |	8.6 |	7.8	7.8 |	9.4	9.8	10.0	9.7
New Zealand[c]	..	9.4	-	14.7	14.6	15.8	15.7	15.7	16.9
Norway[f]	7.8	6.6	6.8	6.4	6.1	6.1	5.5	5.4	5.4
Poland[e]	..	..	..	..	..	11.7	11.4	11.6	16.0
Portugal[c]	12.7	12.1	17.0	16.4	16.7	19.2	19.8	19.1	..
Spain[d]	16.3 |	15.7	17.0	17.6	17.1	18.7	18.5	18.1	17.6
Sweden[e]	4.8	4.5	4.8 |	7.1	7.3	9.0	9.1	9.0	9.0
Turkey[e]	..	..	..	26.3	26.6	26.4	25.4	25.3	25.1
United Kingdom[e]	7.3	6.6	8.6 |	12.4	12.4	12.0	11.7	11.7	11.4
United States[b]	6.7	7.1	7.7	7.5 |	7.5 |	7.5	7.3	7.2	7.0
Unweighted average[g]		**9.8**	**9.9**	**11.2**	**11.2**	**11.8**	**11.9**	**11.9**	

.. Data not available.

Note: See Table 5.A.1 for more information on the classification of owner-managers of incorporated businesses.

a) Excluding unpaid family workers.
b) Excluding owner-managers of incorporated businesses.
c) Classification of owner-managers of incorporated businesses is unclear.
d) Including owner-managers of incorporated businesses.
e) Including most owner-managers of incorporated businesses.
f) Excluding most owner-managers of incorporated businesses.
g) Excluding Belgium, the Czech Republic, Greece, Hungary, Korea, Luxembourg, Mexico, Poland and Turkey.

Sources: OECD database on annual labour force statistics; except Canada, national submission.

Table 5.2. **Annual average growth rates of self-employment[a] and total civilian employment**

Percentages

	1973-1979		1979-1990		1990-1998	
	Self-employment	Civilian employment	Self-employment	Civilian employment	Self-employment	Civilian employment
Australia	5.6	1.0	2.8	2.4	0.0	1.1
Austria	–3.2	1.3	–1.4	1.2	2.5	1.2
Belgium	0.1	0.1	1.5	0.2	1.2	0.3
Canada[b]	..	..	4.1	2.0	4.7	0.9
Denmark	0.6	0.9	–1.4	1.0	–0.1	0.4
Finland	0.4	1.2	4.8	1.5	0.6	–1.0
France	–0.5	0.8	–0.5	0.6	–1.2	0.4
Germany	–1.8	0.0	0.3	0.8	5.6	3.2
Greece[b]	..	..	0.5	1.5	1.1	1.3
Iceland	–0.3	2.7	6.3	2.2	5.7	2.3
Ireland	2.5	2.1	2.8	0.4	4.6	4.6
Italy	–1.7	1.0	2.6	1.1	0.0	–0.3
Japan	1.0	1.2	–0.2	1.8	–1.4	0.7
Korea	..	..	..	..	3.8	2.1
Luxembourg	–1.7	1.0	–0.6	2.0	..	..
Mexico	..	..	..	..	10.0	6.5
Netherlands	–0.2	1.1	1.5	2.4	5.0	2.3
New Zealand	..	..	5.5	1.4	4.1	2.2
Norway	–0.3	2.7	0.2	0.8	–0.1	1.6
Portugal[b]	0.9	1.1	6.4	3.5	2.4	0.5
Spain	–0.9	–0.3	2.2	1.5	1.5	1.1
Sweden	0.5	1.5	5.3	0.8	1.4	–1.3
Turkey	..	..	..	..	2.0	2.7
United Kingdom	–1.3	0.3	6.6	0.5	–0.9	0.1
United States	3.6	2.7	2.3	1.8	0.4	1.3
Unweighted average[c]	**0.2**	**1.2**	**2.2**	**1.4**		
Unweighted average[d]			**2.3**	**1.4**	**1.7**	**1.0**

.. Data not available.
a) Excluding the agricultural sector and unpaid family workers. For some countries, all or part of owner-managers of incorporated businesses are excluded from self-employment. See notes to Table 5.1 and Table 5.A.1.
b) 1990-1997 instead of 1990-1998.
c) Excluding Canada, Greece, Korea, Luxembourg, Mexico, New Zealand and Turkey.
d) Excluding Greece, Korea, Luxembourg, Mexico, New Zealand and Turkey.
Sources: OECD database on annual labour force statistics; except Canada, national submission.

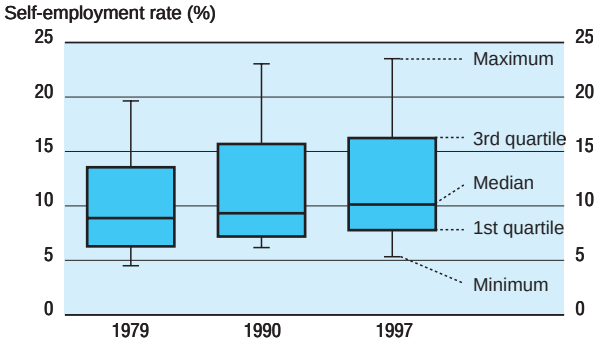
growth rate of the numbers of women in self-employment moved strongly ahead of that of women in total civilian employment in the 1980s, after lagging behind in the 1970s.[6]

The proportion of employed people in self-employment tends to increase with age. In most countries, both the better- and the less-well-educated have above-average probabilities of being self-employed [Blanchflower (1998)].

Other things being equal, the higher the proportion of employers in total self-employment, the higher the contribution of self-employment to the total number of jobs. Comparing the situation in 1997 with that in 1990, the proportion of employers in self-employment rose in over half the countries for which the comparison can be made (Table 5.4). This contrasts favourably with the period 1983 to 1990, during which the proportion of employers declined in most countries. Nevertheless, it is striking that two countries where self-employment grew particularly fast relative to civilian employment as a whole over the 1990s, Canada and Germany, both displayed sharp falls in the proportion of employers. This parallels the situation in the 1980s, when the United Kingdom displayed both the fastest growth of self-employment and the fastest drop in the proportion of employers among the self-employed (Chart 5.2). In all three cases, this suggests that a certain proportion of the growth might be attributable to "false" self-employment, in the sense outlined above.[7]

The distribution of self-employment by industry and occupation differs from that of civilian employment as a whole. Understandably, mining and quarrying, and electricity, gas and water supply, account for only a very small proportion of self-employment, much less than for employment as a whole, and there are also relatively few self-employed people in manufacturing. Outside the agricultural sector, self-employment tends to be concentrated in wholesale and retail

Chart 5.1. **Distribution[a] of self-employment rates across OECD countries[b]**

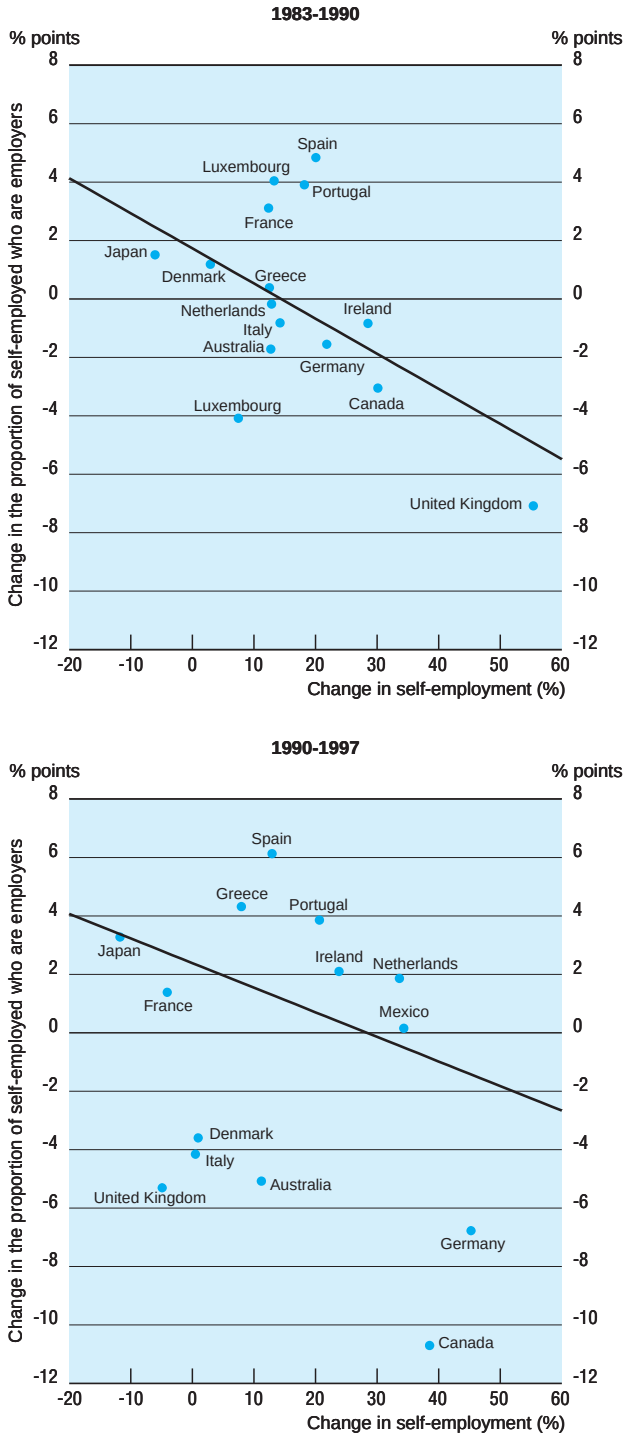


a) The boxplots show the minimum, first quartile, median, third quartile and maximum of the distribution of the self-employment rate, defined as the ratio of self-employment to civilian employment, excluding the agricultural sector and unpaid family workers.

b) Countries are those where data are available for 1979, 1990 and 1997: Australia, Austria, Canada, Denmark, Finland, France, Germany, Iceland, Ireland, Italy, Japan, the Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, the United Kingdom and the United States.

Sources: OECD database on annual labour force statistics; Canada, national submission.

Chart 5.2. **Changes in self-employment and in the proportion of the self-employed who are employers**



Note: The agricultural sector and unpaid family workers are excluded.
Sources: EU countries: EUROSTAT, European Labour Force Survey; other countries: national data.

trade and repairs, and hotels and restaurants [within the former sector, the more detailed analysis in OECD (1986) shows the importance of retail trade]. The patterns vary considerably from country to country. For occupational groups, the differences between self-employment and civilian employment are less marked. Legislators, senior officials and managers represent a larger share of the self-employed population than of civilian employment as a whole, while clerks and elementary occupations account for relatively few self-employed people.[8]

Over the 1990s, the industry sectors which tended to contribute the most to the growth in self-employment were financial intermediation, real estate, renting and business (FIRE); followed by community, social and personal services (Services). For employers, the contribution of wholesale and retail trade, hotels and restaurants was also important. The contribution of these sectors to the growth of self-employment was greater than for employment as a whole. There were distinctive patterns in some of the countries experiencing the fastest growth in self-employment over the 1990s. In Canada, own-account working grew in all sectors, including agriculture. The Netherlands stands out for the growth in the number of employers, particularly in wholesale and retail trade. While self-employment lost ground in most sectors in France, there were some gains in FIRE and Services.

The occupational groups which contributed most strongly to the growth in self-employment over the 1990s

Table 5.3. Self-employment[a] by gender: growth rate and share of self-employment

Percentages

	Women			Men		
	1973-1979	1979-1990	1990-1997[b]	1973-1979	1979-1990	1990-1997[b]
	Annual average growth rates of self-employment					
Australia	8.5	4.1	0.0	4.6	2.4	–0.2
Belgium	0.0	1.7	1.9	0.2	1.4	1.4
Canada	..	5.3	6.5	..	3.6	3.8
Denmark	..	..	..	..	..	–0.7
Finland	–2.4	4.3	0.9	2.0	5.1	0.1
France	..	..	0.6	..	..	–0.9
Germany	–3.2	–1.2	6.4	–1.1	1.0	5.0
Greece	..	–0.1	3.2	..	0.7	1.1
Ireland	..	..	5.7	..	..	2.4
Italy	–6.0	3.7	0.1	–0.3	2.3	–0.2
Japan	0.4	0.0	–2.8	1.3	–0.3	–0.8
Korea	..	..	5.2	..	..	5.0
Mexico	..	..	19.2	..	..	7.0
Netherlands	..	..	–0.2	..	..	3.6
Norway	1.5	2.6	0.4	–0.7	–0.5	–1.1
Spain	–2.3	2.9	2.6	–0.5	1.9	1.2
Sweden	7.0	5.7	1.0	–1.2	5.2	1.5
Turkey	..	..	1.3	..	..	2.1
United Kingdom	–1.9	8.9	–1.0	–1.1	5.9	–1.5
United States	5.7	4.2	1.9	2.9	1.4	–0.2
Unweighted average[c]	**0.7**	**3.4**	**1.0**	**0.6**	**2.3**	**0.5**
	Share of total self-employment					
Australia	27.5	30.5	32.9	72.5	69.5	67.1
Belgium	28.1	28.3	28.9	71.9	71.7	71.1
Canada	..	29.8	32.7	..	70.2	67.3
Finland	..	34.1	31.1	..	65.9	68.9
France	..	..	26.0	..	..	74.0
Germany	34.2	26.4	28.3	65.8	73.6	71.7
Greece	..	16.6	19.4	..	83.4	80.6
Ireland	..	..	20.1	..	..	79.9
Italy	24.5	21.9	23.4	75.5	78.1	76.6
Japan	33.6	35.5	33.9	66.4	64.5	66.1
Korea	..	..	30.3	..	..	69.7
Mexico	..	..	33.8	..	..	66.2
Netherlands	..	..	32.8	..	..	67.2
Norway	21.3	23.5	28.3	78.7	76.5	71.7
Spain	25.2	24.7	26.8	74.8	75.3	73.2
Sweden	22.3	27.3	25.7	77.7	72.7	74.3
Turkey	..	..	6.8	..	..	93.2
United Kingdom	20.4	23.9	24.8	79.6	76.1	75.2
United States	27.2	32.9	37.0	72.8	67.1	63.0
Unweighted average[c]	**26.4**	**28.1**	**29.2**	**73.6**	**71.9**	**70.8**

.. Data not available.

a) Excluding the agricultural sector and unpaid family workers. For some countries, all or part of owner-managers of incorporated businesses are excluded from self-employment. See notes to Table 5.1 and Table 5.A.1.

b) 1996 for Belgium, Greece and the United Kingdom.

c) Excluding Canada, Denmark, Finland, France, Greece, Ireland, Korea, Mexico, the Netherlands and Turkey.

Sources: OECD database on annual labour force statistics; Canada: national submission; Denmark, France, Ireland and the Netherlands: EUROSTAT, European Labour Force Survey.

Table 5.4. **Proportion of employers in self-employment, 1983, 1990, 1997** [a]

Percentages

	1983		1990		1997	
	Employer	Own-account	Employer	Own-account	Employer	Own-account
Australia [b]	37.9	62.1	36.2	63.8	31.1	68.9
Austria	..	..	..	..	68.8	31.2
Belgium	13.9	86.1	11.7	88.3	10.3	89.7
Canada	51.5	48.5	48.4	51.6	37.7	62.3
Czech Republic	..	..	..	..	34.2	65.8
Denmark [c]	52.6	47.4	53.8	46.2	50.1	49.9
Finland	..	..	..	..	42.3	57.7
France	45.2	54.8	48.3	51.7	49.7	50.3
Germany	61.4	38.6	59.8	40.2	53.0	47.0
Greece	24.1	75.9	24.5	75.5	28.8	71.2
Hungary	..	..	..	..	20.0	80.0
Ireland	38.7	61.3	37.8	62.2	39.9	60.1
Japan	20.5	79.5	22.0	78.0	25.3	74.7
Mexico	..	..	18.2	81.8	18.3	81.7
Netherlands	..	..	35.5	64.5	37.4	62.6
Portugal [d]	..	..	31.8	68.2	35.6	64.4
Spain [d]	..	..	23.5	76.5	29.6	70.4
Sweden	..	..	..	..	41.0	59.0
United Kingdom	38.2	61.8	31.1	68.9	25.8	74.2
United States	..	..	..	..	21.1	78.9
Unweighted average [e]	**38.4**	**61.6**	**37.4**	**62.6**		
Unweighted average [f]			**34.5**	**65.5**	**33.8**	**66.2**

.. Data not available.

a) Excluding agricultural sector and unpaid family workers. For some countries, all or part of owner-managers of incorporated businesses are excluded from self-employment. See notes to Table 5.1 and Table 5.A.1.

b) 1985 instead of 1983.

c) 1984 instead of 1983.

d) 1986 instead of 1983.

e) Excluding Austria, the Czech Republic, Finland, Hungary, Mexico, the Netherlands, Poland, Spain, Sweden and the United States.

f) Excluding Austria, the Czech Republic, Finland, Hungary, Sweden and the United States.

Sources: EU countries: EUROSTAT, European Labour Force Survey; other countries: national data.

were professionals, and technicians and associated professionals. The largest contribution to the growth in the number of employers came from the category of legislators, senior officials and managers. The growth in both the numbers of own-account workers and employers was more concentrated by occupation than was the growth of employment as a whole (where a substantial contribution came also from the category of Service workers and shop and market sales workers).[9]

Over recent years, there are a number of indications that the borders between self-employment and wage salary employment are becoming more blurred. For example, in large companies, it can be argued that one of the main thrusts of human resource management policy has been to give employees more of the independence and personal accountability that characterise self-employment. This is seen in higher levels of responsibility for the quality of individual output and career development, at the same time as market-type relationships have become more important within enterprises, and hierarchical ladders have been reduced [OECD (1999*a*)].

In addition, there have been changes in the numbers and types of jobs which lie on the borders of wage and salary employment and self-employment [Burchell and Rubery (1992)]. Contractors working in a dependent relationship with just one enterprise may have little or no more autonomy than employees, even when classified as self-employed. For Australia, Wooden and Van den Heuvel (1995) report that, in 1994, 40 per cent of self-employed contractors were dependent only on their current employer, and that their numbers had grown during the 1990s. For the United Kingdom, Freedman and Chamberlain (1997) argue that the grey area between employee and self-employment status has been growing, drawing particular attention to workers whose business consists of providing only personal services without providing any equipment or taking on their own employees. These workers are considered to be present in significant numbers in the oil, construction, and computer industries and among homeworkers and teleworkers, actors, television workers and journalists. In a number of other countries, including Belgium, Germany and Italy, the growth in the numbers of self-employed contractors working for

Box 1. Trends in franchising*

According to the standard international definitions, franchisees are distinguished by having certain types of contracts with franchisors, who own certain means of production (land, buildings, machinery, trade marks, etc.). The contracts specify, to a significant extent, how the business is operated, and require the payment of part of total sales. Franchising has become an increasingly important avenue into self-employment. It can provide ready-made expertise to run a business in a particular area. When the franchisor offers a well-known brand name, it may also provide the customer base.

The degree of independence of franchisees varies considerably. In general, according to Felstead (1992), many franchisors seek inexperienced franchisees who are more likely to remain dependent upon them. The role of the franchisees is seen as furnishing finance and labour. It is up to the franchisors to shape these raw materials into a trading business. The interests of franchisors and franchisees are sometimes at variance, because franchisors are generally remunerated on the basis of sales turnover, rather than profits. Franchisors may reserve the right to take over franchises if performance is not at a sufficiently high level. They may also choose to locate new franchises close to existing ones if their interests are served by so doing. Over the longer-term the franchisor may maintain control over marketing and sales promotion, product supplies, and product and service development.

The table next page, presenting several indicators of franchising intensity, has been derived from a number of sources. They generally show consistent results. Where there are differences, this may signal a need for particular care in interpreting the figures. The underlying source rests with franchise associations and, as some franchises may have escaped the net, the figures should be treated as lower bounds.

The largest numbers of franchisors and franchisees are found in the United States. However, bearing in mind the comparative sizes of the countries concerned, franchising is particularly well-represented in Japan and Canada. France may have the largest number of franchisees of the large European countries. Franchising appears to represent two per cent or more of GDP in a number of countries, including France and the Netherlands. For a number of other countries, sales turnover figures are around 1 per cent of GDP – including Belgium, Denmark, Finland, Italy, Mexico, and Portugal. Franchising is estimated to represent 6 per cent of total retail and service markets in France, 18 per cent. of retail volume in Norway and 15 per cent of the fast food and restaurant sector in Portugal.

According to US Department of Commerce (1999), there have been rapid increases in franchising over recent years in almost all Member countries (with the exception of some Eastern European countries, where the market is still to be developed). Prospects for expansion are expected to be good. The average annual growth rate expected for Germany over the period 1999 to 2001 was in the 10 to 15 per cent range, and strong increases were expected for a number of other countries.

* This box has been compiled with the assistance of Mr. David Purdy of the International Franchise Research Centre, University of Westminster, United Kingdom.

just one company has led to policy concerns over "false self-employment" (see Section V). Many homeworkers fall into this latter category [Schneider de Villegas (1990); Felstead (1996)]. Franchisees are another important group on the borders of dependent and self-employment. Their numbers have been growing quite rapidly in the 1990s (Box 1).

II. Flow analyses

Further insights into the changing characteristics of self-employment can be obtained from data on flows between self-employment and other labour market states. This allows an examination of the patterns of inflow into self-employment over time, particularly from unemployment and from wage and salary employment. A more detailed analysis reveals the extent to which own-account workers transform themselves into employers over time. Finally, the data allow a crude comparison of the stability of the states of self-employment and wage and salary employment. The main data source used for analysis is the retrospective information provided by the European Union Labour Force Survey (EULFS), described in Annex 5.A. It must be noted that information of this kind is subject to large reporting errors and is, in general, suitable only for indicating broad trends over time.[10]

The results of the analysis of flow data for a number of European Union countries,[11] shown in Tables 5.5, 5.6 and 5.7 and Chart 5.3, coupled with a more detailed analysis of the underlying data, suggest that:

- The large majority of inflows into self-employment come from paid employment in both the European Union (Table 5.5) and Canada [Lin *et al.* (1999)]. Only a small proportion of inflows into self-employment come from unemployment – with the exceptions of

Indicators of franchising intensity

	Number of franchisors by source				Number of franchisees by source			
	European Franchising Federation		Worldwide	US Dept. of Commerce	European Franchising Federation		Worldwide	US Dept. of Commerce
	1992/93	1995/96	1993/94	1997/98	1992/93	1995/96	1993/94	1997/98
	Numbers				Numbers			
Austria	190	210	200	302	3 000	3 000	3 000	3 630
Australia and New Zealand	..	..	600	..	..	..	26 000	..
Belgium	225	170	150	..	3 500	3 500	3 083	..
Canada	..	..	1 000	..	..	..	65 000	..
Czech Republic	40	..	35	..	80	..	100	..
Denmark	42	98	68	..	500	2 000	1 210	..
Finland	..	..	70	..	..	..	900	..
France	450	470	520	517	25 700	25 750	30 000	28 851
Germany	500	530	500	598	20 000	22 000	18 000	28 000
Hungary	150	220	200	..	1 000	5 000	10 000	..
Ireland	..	..	..	113	..	..	..	864
Italy	370	436	400	..	18 650	21 390	18 500	..
Japan	..	..	714	..	..	..	139 788	..
Mexico	..	..	375	400	..	..	18 724	..
Netherlands	341	345	341	350	11 975	11 910	11 975	12 000
Norway	..	..	185	185	..	..	3 500	3 500
Portugal	70	220	70	236	–	2 000	..	..
Spain	280	288	280	550	23 000	13 161	18 500	..
Sweden	200	230	200	..	9 000	9 150	9 000	..
Switzerland	..	..	170	..	..	..	..	..
United Kingdom	396	474	414	..	24 900	25 700	26 400	..
United States	..	..	3 000	..	..	..	250 000	..

	Annual sales turnover by source			Numbers employed [a]	
	European Franchising Federation		US Dept. of Commerce	European Franchising Federation	
	1992/93	1995/96	1997/98	1992/93	1995/96
	Billion ECU		Billion US$	Thousands	
Austria	..	1.6	..	..	40
Belgium	3.7	2.4	..	27	29
Czech Republic	0.8	..	..	0.8	..
Denmark	..	1.0	2.7	..	40
Finland	..	..	2.1	..	..
France	31.0	9.2	3.4	319	356
Germany	11.5	14.6	18.5	..	230
Hungary	..	2.6	0.9	10	45
Ireland	..	..	0.5	..	..
Italy	8.1	12.0	..	46	50
Mexico	..	..	5.1	..	..
Netherlands	7.9	9.2	10.0	78	100
Norway	..	..	8.5	..	..
Portugal	..	1.0	..	..	35
Spain	..	6.8	..	..	69
Sweden	5.0	5.7	..	55	71
United Kingdom	6.4	8.9	..	189	223

.. Data not available.

a) Includes full and part-time staff in franchised and company-owned outlets, as well as at the franchisor's headquarters.

Sources: European Franchising Federation 1995/96 data taken from EFF (1997); 1992/93 data taken from correspondence between Mr. David Purdy and the British Franchise Association; "Worldwide" data extracted by Mr. David Purdy from Swartz (1995); US Department of Commerce (1999).

Chart 5.3. **Flows between unemployment and self-employment, 1983-1997**

Thousands

a) Inflows and outflows are not available for 1991.
b) Data refer to western Germany before 1991, and to Germany after 1991. 1991 data are not available.
Source: EUROSTAT, European Labour Force Survey.

Finland and Spain, and Germany during the period of rapid growth in self-employment since 1994 (when perhaps one in four of the newly self-employed were previously unemployed).[12]

- Conversely, when unemployed people find work, this is comparatively rarely through self-employment, even after taking account of the proportion of self-employment jobs in total employment (Table 5.6).
- A detailed analysis of the outflows from self-employment (Table 5.5 and underlying data) indicates that they are chiefly into paid employment and out of the labour force, a result also found for Canada by Lin et al. (1999). In well over half of the countries for which a relatively long time series is available, there is an upward trend in outflows from self-employment over the last ten to fifteen years. The source of this tends to be an increased outflow from self-employment to paid employment. No such common pattern is seen in the inflows.
- The proportion of self-employed people reporting no change in their status since the same date in the preceding year is slightly lower than for employees. Disaggregating into those with and without employees, employers are roughly as stable, in this sense, as employees, while own-account workers are considerably less stable (Table 5.7).[13]
- In European Union countries, there is no consistent correlation between inflows from unemployment to self-employment and the level of the unemployment rate (Chart 5.3). In some countries, there may be signs that the inflows into self-employment move counter-cyclically, tending to increase, sometimes after a lag, when unemployment rises: in no European country is the opposite pattern evident. However,

Table 5.5. **Flows into and out of self-employment**[a]

Average annual flows over years indicated
Percentages of self-employment

		Inflows to self-employment from:			Outflows from self-employment to:		
		Employees	Unemployed	Out of the labour force	Employees	Unemployed	Out of the labour force
Austria	1995-1997	10.4	0.9	3.4	10.7	0.8	2.2
Denmark	1983-1989	4.0	0.9	0.7	2.8	1.6	2.3
	1990-1997	5.1	2.0	1.0	3.1	1.8	2.5
Finland	1995-1997	2.1	3.0	3.0	2.0	2.0	1.9
France	1983-1989	6.6	2.1	2.3	3.7	1.5	3.6
	1990-1997	6.2	1.9	2.4	3.9	1.8	3.3
Germany	1983-1990	7.7	0.6	1.4	4.8	0.6	1.7
	1992-1997	12.3	1.3	2.4	6.6	0.8	2.0
Greece	1983-1989	2.7	0.8	1.9	1.4	0.8	1.5
	1990-1997	2.4	0.8	1.3	1.4	0.7	1.6
Ireland	1983-1989	2.5	2.2	1.6	3.0	2.0	1.2
	1990-1997	3.3	1.7	1.9	4.6	1.7	1.6
Italy	1983-1992	3.5	1.4	2.7	4.3	0.6	2.3
	1993-1997	5.5	2.1	3.6	4.1	0.8	3.1
Portugal	1986-1989	7.3	1.0	1.4	2.0	0.6	2.0
	1990-1997	6.8	1.1	1.9	3.4	0.7	1.8
Spain	1987-1989	3.3	2.8	2.6	2.9	1.2	2.1
	1990-1997	3.5	2.6	2.4	2.1	1.5	2.7
Sweden	1996-1997	2.8	1.2	1.8	1.8	1.0	1.8
United Kingdom	1983-1989	8.5	3.3	4.1	3.9	2.5	2.2
	1990-1997	7.5	2.8	3.4	4.8	3.3	2.7
Unweighted average	**1983-1989**	**5.1**	**1.7**	**2.1**	**3.2**	**1.2**	**2.1**
	1990-1997	**5.7**	**1.8**	**2.4**	**4.0**	**1.4**	**2.3**

a) Excluding the agricultural sector and unpaid family workers. For some countries, all or part of owner-managers of incorporated businesses are excluded from self-employment. See notes to Table 5.1 and Table 5.A.1.

Source: OECD calculations on the basis of data provided by EUROSTAT from the European Labour Force Survey.

Table 5.6. **Current status of those unemployed a year earlier**

Agricultural sector excluded, percentages

		Employee	Unemployed	Out of the labour force	Self-employed
Austria	1995-97	31.2	43.3	23.1	1.9
Belgium	1983-89	19.0	69.8	9.8	1.3
	1990-97	21.9	50.8	25.6	1.6
Denmark	1983-89	42.8	39.3	16.7	1.0
	1990-97	33.6	36.8	27.9	1.5
Finland	1995-97	25.3	45.9	27.2	1.5
France	1983-89	29.7	50.7	17.6	1.8
	1990-97	30.5	51.6	16.2	1.4
Germany	1983-90	15.9	52.4	30.8	0.8
	1992-97	24.0	49.6	25.0	1.3
Greece	1983-89	30.3	59.9	6.1	3.3
	1990-97	24.1	61.4	11.5	2.5
Ireland	1983-89	16.8	68.2	13.5	1.4
	1990-97	17.7	58.2	22.7	1.4
Italy	1983-92	23.1	54.2	19.0	2.8
	1993-97	18.5	47.4	30.2	2.8
Portugal	1986-89	31.9	50.7	15.4	1.7
	1990-97	32.4	41.8	22.4	3.0
Spain	1987-89	26.3	66.1	5.1	1.9
	1990-97	26.9	63.6	7.2	1.8
Sweden	1996-97	26.5	52.0	18.6	2.9
United Kingdom	1983-89	28.3	52.4	15.6	3.6
	1990-97	28.8	49.3	17.4	4.2
Unweighted average	**1983-89**	**26.4**	**56.4**	**15.0**	**2.0**
	1990-97	**26.3**	**50.1**	**21.1**	**2.1**

Note: Rows do not sum exactly to 100% because of the exclusion of unpaid family workers.
Source: As Table 5.5.

for Canada, Lin *et al.* (1999) find a significant but small negative correlation between the unemployment rate and self-employment entries.

The absence of a consistent positive correlation between the unemployment rate and inflows into self-employment from unemployment fails to support the so-called "unemployment push" hypothesis: that people tend to move into self-employment in greater numbers in recessions due to the absence of wage employment [see Meager (1991) for a summary of this debate]. Nevertheless, the data show that inflows from unemployment into self-employment show little or no tendency to decline in recessions.

A further analysis of flows into the employer status (Table 5.8) shows that employers have not necessarily moved on from being own-account workers – the proportion of employers saying they were own-account workers the year before is slightly less than the proportion saying they were employees. On average, over a year, only roughly one in thirty own-account workers become employers in Europe.

III. Working conditions of the self-employed, job satisfaction and preferences

A. Working conditions

Earnings

Earnings are one of the most important components of the working conditions of the self-employed. Unfortunately, direct comparisons of the earnings of the employed and self-employed populations are extremely difficult. Data on the incomes of the self-employed are both harder to obtain and less reliable than those for wage and salary workers [OECD (1992)]. On the definitional side, there are three areas where the determination

of self-employment incomes is particularly uncertain: the overlap between personal consumption expenditures and business expenditures, production for own consumption, and capital accruals. In addition, there are severe measurement problems. By comparison with wage and salary workers, the self-employed have a much greater opportunity to understate their incomes to avoid taxation. Taking National Accounts estimates as the basis of comparison, self-employment earnings appears to be subject to much greater under-reporting in household income surveys than employee earnings [Sullivan and Smeeding (1997)]. It is therefore prudent to restrict international studies of self-employment earnings to comparisons of trends over time and the situation of different population groups, such as men and women. It may also be possible to make comparisons of the degree of inequality found in the distributions of the earnings of employees and self-employed people. At the same time, it must also be remembered that many households obtain their income from a combination of wage and self-employment earnings. For Canada, Leckie (1997) shows that the proportion of such households has been rising.

The OECD (1992) analysis of trends in the earnings of the self-employed, covering six countries over the late 1980s, found no uniform pattern in changes in the ratio between the median earnings of the self-employed and of the civilian employed. The direction of change varied according to the country and gender concerned. This contrasted with the conclusion of OECD (1986), for five countries over the late 1970s and early 1980s, that median earnings of the self-employed had been declining over time relative to those of employees.

For the 1990s, there is again no evidence of clear patterns:

- For Austria, trends in wage and self-employment incomes appear to be similar over the period 1985-96.[14]
- For Canada, Leckie (1997) finds that mean annual earnings of the self-employed grew considerably faster than corresponding wage earnings over the period 1985 to 1995.
- For France, Cordellier (1998) concludes that there was a widespread decline in the real earnings of the self-employed from 1986 to 1996, a period in which real wages grew. Even where the real earnings of the

Table 5.7. **Stability of self-employment**[a]

Percentage of persons who were in the same status a year earlier, average of years shown

		Self-employed		Employee
		Own account	Employer	
Austria	1983-1989	83.4	85.5	90.0
Denmark	1983-1989	92.5	98.1	89.2
	1990-1997	93.6	96.8	91.3
Finland	1983-1989	73.1	95.8	85.7
France	1983-1989	80.4	83.7	90.2
	1990-1997	80.8	84.6	91.2
Germany	1983-1990	75.8	80.9	91.1
	1992-1997	85.2	85.8	94.8
Greece	1983-1989	93.8	92.4	92.9
	1990-1997	93.3	92.5	91.9
Ireland	1983-1989	89.4	94.3	89.7
	1990-1997	90.1	95.9	90.9
Portugal	1986-1989	86.0	91.2	93.0
	1990-1997	88.1	89.8	93.3
Spain	1987-1989	88.5	91.1	85.6
	1990-1997	88.9	92.3	84.9
Sweden	1983-1989	80.8	96.1	92.2
United Kingdom	1983-1989	80.9	84.4	90.5
	1990-1997	77.4	85.6	89.0
Unweighted average	**1983-1989**	**84.1**	**90.3**	**90.0**
	1990-1997	**87.2**	**90.4**	**90.9**

a) Unpaid family workers and the agricultural sector are excluded.
Source: As Table 5.5.

Table 5.8. **Flows into and out of employer status**[a]

Percentages of employers

		Inflows to employer status from:				Outflows from employer status to:			
		Employee	Unemployed	Out of the labour force	Own account worker	Employee	Unemployed	Out of the labour force	Own account worker
Denmark	1983-1989	4.3	0.6	0.4	0.3	2.4	1.3	1.5	0.9
	1990-1997	3.2	0.5	0.5	0.3	2.3	1.4	1.9	0.5
Finland	1995-1997	1.9	0.6	1.3	1.2	1.3	0.9	2.0	1.2
France	1983-1989	6.0	0.9	1.2	6.2	3.8	0.9	3.0	5.5
	1990-1997	6.1	1.0	1.3	7.4	4.0	1.2	2.8	6.4
Germany	1983-1990	8.1	0.3	0.6	4.8	3.7	0.4	1.4	2.4
	1992-1997	12.0	0.6	1.1	5.1	5.9	0.5	2.0	3.2
Greece	1983-1989	2.7	0.4	0.9	3.3	1.4	0.7	1.1	2.1
	1990-1997	2.4	0.4	0.6	3.9	1.5	0.4	1.2	2.9
Ireland	1983-1989	1.8	0.7	0.6	1.1	4.9	0.8	1.1	2.0
	1990-1997	2.6	0.5	0.6	2.0	7.8	0.8	1.3	2.2
Portugal	1986-1989	6.5	0.3	0.8	2.5	0.9	0.5	1.4	2.6
	1990-1997	4.5	0.4	0.8	3.1	2.1	0.4	1.2	3.0
Spain	1987-1989	2.4	0.5	1.2	3.3	3.8	0.7	1.3	1.7
	1990-1997	2.7	0.9	1.2	3.8	2.0	0.7	1.8	2.4
Sweden	1996-1997	2.1	0.6	0.6	0.7	1.7	1.0	2.0	1.6
United Kingdom	1983-1989	5.5	1.2	1.5	6.0	3.4	1.5	2.0	4.3
	1990-1997	5.3	0.8	1.2	8.1	3.1	1.5	2.2	5.4
Unweighted average	**1983-1989**	**4.6**	**0.6**	**0.9**	**3.4**	**3.1**	**0.9**	**1.6**	**2.7**
	1990-1997	**4.3**	**0.6**	**0.9**	**3.6**	**3.2**	**0.9**	**1.8**	**2.9**

a) Unpaid family workers and the agricultural sector are excluded.
Source: As Table 5.5.

self-employed increased or stagnated up to 1990, they usually declined afterwards.

- For the United Kingdom, Robson (1997) reports a decline in the average earnings of the self-employed relative to employees over the whole period since 1979, attributing it mainly to the reduction in the level of capital per self-employed worker.
- For the United States, Devine (1994) finds that median real earnings of full-time year-round self-employed men declined between 1975 and 1990, while the real earnings of similar employees were relatively flat. The earnings of self-employed women improved over time, relative to the earnings of self-employed men, but the gains lagged behind those seen in the wage-and-salary sector.

The OECD (1992) analysis of the inequality of self-employment earnings, relative to employee earnings, found evidence that the distribution of the incomes of the self-employed tended to be less equal than that of wage and salary employees. This is confirmed by a number of recent studies, including Sullivan and Smeeding (1997), covering 15 OECD countries; Bradbury (1996), on the basis of expenditure data for Australia; Leckie (1997) for Canada; Pfeiffer and Pohlmeier (1992) for Germany; and Parker (1997, 1999), who reviews a number of recent studies for the United Kingdom, finding evidence for a rise in the inequality of self-employment income over the period 1976 to 1995, paralleling that for employees. In addition, a number of studies, including Bradbury (1996) and Leckie (1997), point to the relatively large variation in self-employment incomes from year to year.

Conditions at work

Secretariat analysis of the 1996 Second European Survey on Working Conditions [see European Foundation (1997*a*) and Annex 5.A] shows that the working conditions of the self-employed tend to differ from those of employees in a number of important respects. These differences tend to persist after allowing for a number of ways in which the jobs of self-employed people and employees tend to differ.[15]

Not surprisingly, self-employed people tend to report greater autonomy than employees on a number of dimensions, including the ability to choose their rate and methods of

work, the order in which they perform tasks, and the pattern of breaks and holidays that they take. They are also less likely to complain of working under time pressure, and are more likely to indicate that they "have enough time to get the job done". In addition, in most occupational groups, own-account workers are less likely than employees to agree that they are "working to tight deadlines" or "working at very high speed". Employers, by contrast, report these types of work pressure as often as employees. On the other hand, the self-employed are rather more likely than employees to say that their pace of work is "dependent upon direct demands from people such as customers, passengers, pupils and patients". Such differences are present in each sector and for each occupation group. There is no evidence of additional differences by gender.

The well-known tendency for self-employed people to report longer hours of work than employees is confirmed by this survey. Own-account workers reported an average of 45 hours a week and employers 52 hours, as opposed to the 39 hours reported by employees.[16] Women own-account workers reported working longer hours than women employees, but considerably shorter hours than male own-account workers (male and female own-account workers were found to work, on average, 46 and 40 hours, as opposed to 41 and 33 hours for employees). Men and women employers were found to average around the same number of hours.

Table 5.9 shows the results of applying a logit analysis to a number of other dimensions of working conditions. The figures show the probability that own-account workers and employers respond positively to the questions on the topics mentioned, relative to employees, after controlling for the effects of age, gender, country, education, occupation and industry. These are important dimensions of jobs, although they do not exhaust all of the differences between the jobs done by employees and self-employed people. With this *caveat*, the results suggest that:

- While the self-employed claim that they are more able to adjust instruments and equipment for their own comfort, they are nevertheless less likely to report wearing protective equipment and more likely to work in painful positions. They are more likely to report working at night and at weekends.
- The self-employed report considerably lower levels of training than employees. In addition, own-account workers (but not employers) report lower levels of use of computers.
- The self-employed, particularly own-account workers, are less likely to agree that they have a secure job than employees.

This last finding is not in line with the findings of Manski and Straub (1999) for the United States, that self-employed workers tend to perceive less chance of job loss

Table 5.9. **Working conditions of the self-employed: results of a logistic regression model**

	Probability that the statement applies to the self-employed as a ratio of the probability it applies to employees[a]	
	Self-employed	
	Own-account workers	Employers
	Percentages	
Wearing protective equipment	59***	91
Working in painful positions	117***	117**
Able to adjust to their own comfort instruments/equipment	150***	158***
Working shift and/or irregular hours	148***	145***
Working Saturdays (at least once a month)	118***	122***
Working at night (at least once a month)	131***	182***
Working Sundays (at least once a month)	156***	186***
Dealing directly with outside people	106***	108***
Training in the last 12 months	41***	61***
Working with computers at least 1/4 of the time	68***	103
Think job is secure	80***	96*

***, **, and *, significant at the 0.1%, 1% and 5% level respectively.

a) The table should be read as follows: own-account workers are 59% as likely to be wearing protective equipment as employees, etc. The calculations are based on the case of a 40 year old man in Belgium, who left education between the ages of 16 and 20, working in wholesale and retail trade as a service or sales worker.

Source: OECD calculations from the *Second European Survey on Working Conditions*, excluding the agricultural sector.

than those who work for others. However, these results refer to possible job loss over the next twelve months, probably a relatively short time in the life of a self-employed business, while the European question made no reference to any time period.

B. Job satisfaction by employment status, gender and hours

The self-employed tend to indicate greater satisfaction with their jobs than employees. For the European Union, Secretariat analysis of the 1996 Second European Survey on Working Conditions shows that 38 per cent of own-account workers and 45 per cent of employers reported being "on the whole, very satisfied" with their main jobs, as opposed to 30 per cent of employees. Blanchflower (1998) reports similar results for a number of other surveys covering Europe and the United States. The differences tend to persist even after the inclusion of a number of variables to control for the type of job.

Table 5.10 compares the job satisfaction of employees and self-employed people according to gender and hours of work. There are some striking differences in the pattern of job satisfaction by gender. Male employees tend to report increasing job satisfaction with lengthening hours of work, while female employees do not. However, for men and women own-account workers the patterns differ less – in both cases the peak satisfaction occurs in jobs of around 40 hours a week. Nevertheless, women own-account workers with low weekly hours also tend to report quite high levels of job satisfaction, possibly because this allows them to combine work and family life.

In sum, taken at face value, the evidence suggests that the self-employed are more content with their lot than employees. The poorer working conditions and longer hours associated with self-employment are presumably compensated by other factors.

C. Employees in very small businesses

In considering the working conditions associated with self-employment, it is also important to examine the working conditions of employees in businesses run by the self-employed. The necessary information, which would need to include earnings data, is scarce. However, a number of indications can be gleaned from the Second European Survey on Working Conditions, referring to the working conditions in firms with between one and nine employees.[17] There is a substantial overlap between these firms and the firms of self-employed people.

While employees in companies with between one and nine employees do not report above-average exposure to

— Table 5.10. **Job satisfaction[a] of the self-employed, by hours and gender, European Union, 1995/96** —

Percentages

	Men							Women							Men and women
	Usual hours of work in main job							Usual hours of work in main job							
	Less than 10 hours	10-29 hours	30-39 hours	40-44 hours	45-59 hours	More than 60 hours	All hours	Less than 10 hours	20-29 hours	30-39 hours	40-44 hours	45-59 hours	More than 60 hours	All hours	All hours
Total employment															
Very satisfied	12	25	29	29	35	36	31	35	35	33	32	35	37	34	32
Other[b]	88	74	71	71	64	64	69	64	65	67	66	65	63	66	53
Own-account workers															
Very satisfied	..	23	53	36	32	33	35	43	37	48	49	42	38	44	38
Other[b]	..	77	47	64	67	67	65	57	63	52	51	58	62	56	61
Employers															
Very satisfied	..	..	..	..	..	..	42	..	..	..	..	..	..	52	45
Other[b]	..	..	..	..	..	..	58	..	..	..	..	..	..	48	55
Employees															
Very satisfied	..	27	27	28	35	34	29	35	36	32	29	28	28	32	30
Other[b]	..	73	73	71	64	66	71	64	64	68	69	72	72	67	69

.. Estimate unavailable because of inadequate sample size. Sample size restrictions are also the reason for the slightly different decomposition of hours used for men and for women.

a) Data refer to satisfaction with main job.

b) Including responses: "fairly satisfied", "not very satisfied" and "not at all satisfied". Figures do not always add to 100 because of small numbers of "don't knows".

Source: As Table 5.9.

adverse ambient factors, they are more likely to say they work in painful positions, or move heavy loads. They are more likely to work long hours, and on Saturdays, but not nights or on Sundays. They are less likely to say they work to tight deadlines. However, they report lower levels of autonomy than employees in larger firms, and are less likely to regard their jobs as complex, or involving precise quality standards, or requiring job rotation. They are much less likely than employees in general to report having undergone training in the last 12 months, or using computers. Regarding their compensation, they are less likely to receive special payments for overtime, unsocial working hours, or poor working conditions. They are also less likely to enjoy family-friendly benefits, such as maternity leave, sick child leave, parental leave or child day care, over and above those stipulated in national legislation. They are slightly less likely than average to think their job is secure. However, they report being as satisfied with their jobs, if not more so, than workers in companies of other sizes.

D. Preferences for self-employment

Recent survey evidence for Europe suggests a considerable, latent interest in self-employment. Table 5.11, taken from an analysis of the "Employment Options of the Future" survey [Bielenski (1999) and Annex 5.A], shows the numbers of people, either currently employed or intending to become employed within the next five years, who indicate that their desired employment state is self-employment. Taken at face value, the figures suggest that the proportion of currently employed people who would prefer self-employment is 26 per cent – just under twice the figure currently seen in Europe. These figures should, of course, be regarded with considerable caution, as most dependent employees have no experience of self-employment. At the same time, there is some indication of "involuntary self-employment" – 18 per cent of those currently self-employed said they would prefer to work as an employee.[18]

A detailed analysis of these data by Huijgen (1999) shows that preferences for self-employment are considerably stronger among men than women – indeed, differences by gender were more important than any other variable included in the survey. Twenty-two per cent of male employees and labour market entrants, as against 15 per cent of women, indicated a preference for self-employment (and 33 per cent of men, as opposed to 45 per cent of women, said they regarded it as unacceptable). Preferences for self-employment decline gradually with age. They increase with the level of educational qualifications. The strongest preferences for self-employment are expressed by young men with above-average educational qualifications entering the labour market.

Differences in preferences by gender are also found for the United Kingdom by Hakim (1998). Using 1991 Census data to examine the narrowly defined profession of pharmacist, in which men and women are roughly equally represented, and which, she argues, offered a relatively unconstrained choice of the type of working, she concludes that women pharmacists show a strong tendency to prefer employee jobs (often part-time) while men consistently prefer self-employment (almost always full-time). For the United States, Devine (1994) argues that the self-employment decision for women is based on different factors to that for men. For Canada, Menzies (1998) reports survey evidence that men are more likely than women to choose self-employment for the independence it offers (47 per cent of men cited this reason compared with 32 per cent of women): women are more likely to say that it offers a chance to work from home (13 per cent of women compared with virtually no men).

— Table 5.11. **Preferences for self-employment and dependent employment, European Union, 1998** —

Percentages

	Desired status		
	Employee	Self-employed	No preference/ don't know/no answer
Current status			
Employed (sum of employees and self-employed)	69	26	5
Intend or wish to take up paid work in the next five years [a]:			
Young entrants	58	26	16
Women returners	70	15	15
Unemployed	65	16	20

a) Defined as people, aged 16 and over, not currently employed, who want to be working in 5 years' time. Young entrants are pupils or students intending to take up their first "real" job on completion of their studies. Women returners are women who want to take up paid work again after a break in their career.

Source: Bielenski (1999), analysis of the "Employment Options of the Future" survey, covering the EU and Norway.

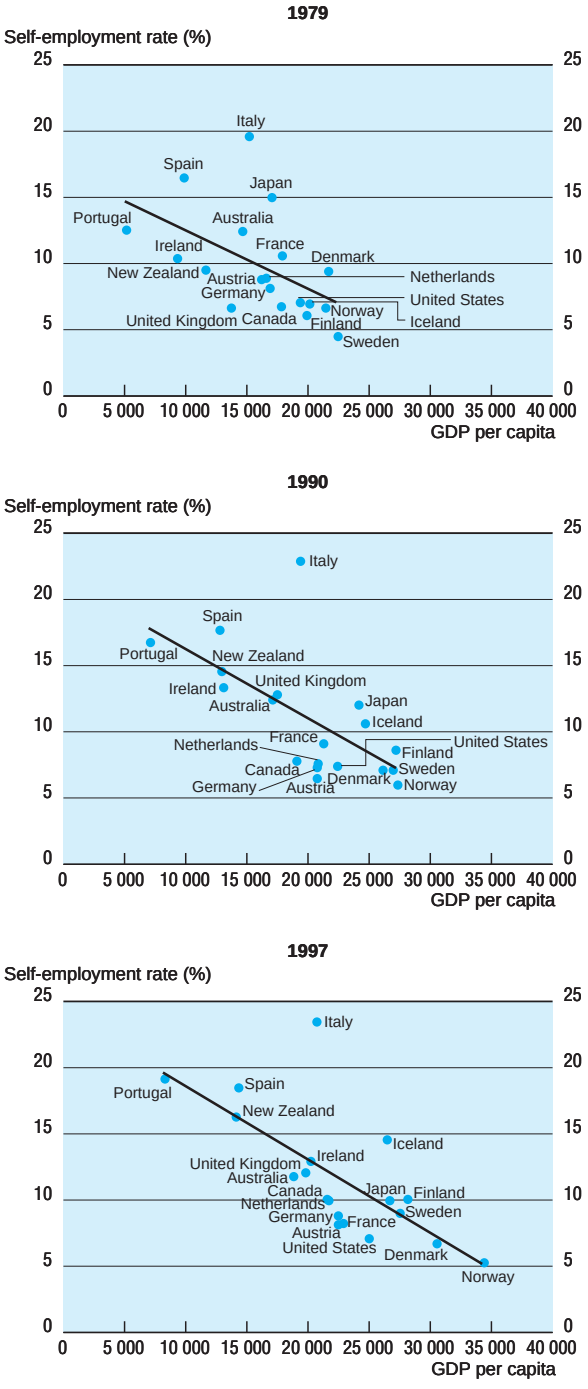
IV. Exploring the correlates of self-employment

From a cross-sectional viewpoint, there is a strong negative correlation between the level of GDP per capita and the share of self-employment in total, non-agricultural civilian employment, as shown in Chart 5.4 (which includes only those countries for which data are available for all of the years). The statistical relationship is very similar in each of the years. However, other factors are at work – if GDP *per capita* were the only influence, self-employment would have tended to decline in all countries. This section reviews a number of multivariate analyses of the correlates of self-employment, including recent analyses by the Secretariat.

Previous international time-series analyses, including Acs, Audretsch and Evans (1994), Staber and Bogenhold (1993) and Robson and Wren (1999) have used a variety of explanatory variables for the self-employment rate, including unemployment, output per capita, proportion of women in the labour force, share of GDP contributed by the services sector, average tax rates, and marginal tax rates. The sign for the coefficient on the unemployment rate is uncertain, *a priori*, and estimates vary from study to study. The proportion of women in the labour force is expected to have a negative coefficient, that of the proportion of services sector GDP a positive one (though these results are not always found). Average tax rates might be expected to have a positive coefficient, as higher average tax rates provide more incentive to find ways of avoiding and evading income tax through self-employment. This result is found by some but not all analyses, including that of Robson and Wren (1999). They also find a negative relationship with marginal tax rates.[19]

The Secretariat analysis, which broadly followed the approach of Robson and Wren (1999), is described in Annex 5.B. The list of variables is shown in Table 5.12. It should be noted that neither this, nor indeed any of the analyses just quoted can claim to incorporate a "model" of the decision to become self-employed. Such an approach would require an analysis using individual, rather than aggregate level. However, it can be seen that the first four variables used by the Secretariat relate to the development of and broad structural change in the economy, while the last five are relevant to the likely advantages accruing to self-employment, relative to wage and salary employment. The new variables, by comparison with earlier studies, are the proportion of value added accounted for by capital (SCVA) and the average unemployment benefit replacement rate (REPR). SCVA might be expected to have a positive sign, in so far as it reflects the rate of return to capital as opposed to labour – self-employment earnings include a component accruing to capital as well as one accruing to labour. REPR might be expected to have a negative sign:

Chart 5.4.
Self-employment rate and GDP per capita,[a] 1979, 1990 and 1997



a) The self-employment rate is defined as the ratio of self-employment to civilian employment, excluding the agricultural sector and unpaid family workers. Countries shown are those where data are available for 1979, 1990 and 1997. GDP per capita is in US$ and exchange rates of 1990.
Sources: OECD database on annual labour force statistics; OECD database on national accounts.

— Table 5.12. **Explanatory variables used in the OECD Secretariat's time series regression analyses** —

Variable Code	
SER	Self-employment rate: ratio of self-employment to civilian employment
SE	Self-employment
EMP	Civilian employment
GDP	Real GDP per capita
FEM	Proportion of women in labour force
MAN	Proportion of manufacturing in value added
SERV	Proportion of services in value added
SCVA	Proportion of value added accounted for by capital
UNR	Unemployment rate
MTR	Ratio of general government gross liabilities to GDP
ATR	Average tax rate (proxied by ratio of general government outlays to GDP)
REPR	Average unemployment benefit replacement rate

an increase should tend to increase the attractiveness of wage employment.

A number of other variables of possible importance could not be included. For example, outsourcing has been suggested as one of the main reasons for the rapid growth in self-employment, for example in the United Kingdom in the 1980s [Meager (1998)] and Canada in the 1990s [Leckie (1997)]. There is evidence of recent increases in outsourcing from a number of national studies, including Morehead *et al.* (1997) for Australia, Ekos Research Associates Inc. (1998) for Canada, and Cully *et al.* (1999) for the United Kingdom. Secretariat analysis of the 1996 EPOC survey [European Foundation (1997*b*)], found managers reporting initiatives in favour of outsourcing over the previous three years in all ten European countries covered. The percentage of workplaces involved ranged from 8 per cent in Spain to 23 per cent in Ireland. However, the data are insufficient to include in a time series regression model. Data limitations were also the reason for the exclusion of the level of employers' social security contributions, the strictness of employment protection legislation (EPL), and the availability of financial capital.

While cultural factors are not amenable to time-series analysis, Wilderman *et al.* (1999) find that, on a cross-country basis, certain cultural variables have a stronger explanatory power than standard economic variables.[20] For the United Kingdom, a number of commentators have discussed whether or not the sharp rise in self-employment in the United Kingdom in the 1980s might have been due, at least in part, to a renewal of interest in entrepreneurial activity within the national culture [OECD (1992); Blanchflower and Freeman (1994); Robson (1998)].

Table 5.13 summarises the results obtained by the Secretariat, from both individual and pooled regressions. The specification of the two models is given in Annex 5.B (the models differ only in the treatment of the independent variable, which is separated into its two components, the numbers of self-employed and the numbers in civilian employment, in the second model). Only variables found to be significant at the 10 per cent level were retained in the model. Few of the variables perform consistently well. The "best" variable, in the sense of consistent, significant coefficients, is the proportion of value added accounted for by capital. This has the expected sign. The average taxation variable is often significant in first-difference terms, but does not have the sign expected. The same is true of the variable for the proportion of GDP accounted for by services [a similar result was found by Robson and Wren (1999)]. While GDP per capita gives mixed results when used in the regressions for individual countries, it has a negative sign in the pooled regressions, perhaps reflecting the tendency for countries with higher levels of this variable to have lower levels of self-employment (Chart 5.2). A separate analysis using the limited information on EPL found no evidence of a correlation between it and the self-employment rate.[21, 22]

In summary, the analyses presented here have failed to find a consistent set of explanatory variables for self-employment on a time-series basis across countries.

V. Policy considerations

Particularly since the beginning of the 1980s, governments in most OECD countries have adopted a range of policies to support self-employment, both in its own right, and as part of attempts to foster entrepreneurship [OECD (1998*a*)]. This has taken place in the context of a general trend toward deregulation in many labour and product markets and the persistence of high unemployment [Meager (1994)]. Policy intervention has been justified by

Table 5.13. **Summary of time-series regression analyses for the self-employment rate**

	Model 1 (dependent variable SER)						Model 2 (dependent variable SE)					
	Canada	Germany	Italy	Japan	United Kingdom	Pooled	Canada	Germany	Italy	Japan	United Kingdom	Pooled
Variable[a]												
$LnSER_{t-1}$	–0.46**	–0.27**	–0.35**	–0.16**	–0.21**	–0.23**	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
$LnSE_{t-1}$	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	–0.72**	–0.62**	–0.68**	–1.29**	–0.24**	–0.33**
$\Delta lnEMP_t$	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	–2.34**	0.26*	2.70**	1.10**	1.93**	1.17**
$lnEMP_{t-1}$	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	0.50**	–0.51**	2.00**	2.00**	–0.69**	0.64**
$\Delta lnGDP_t$		1.79**	0.72*						–1.01**	–0.21**	1.09**	
$lnGDP_{t-1}$	0.30**				0.08**	–0.63**		–2.13**	–0.95**	–0.23**	0.12**	–1.04**
$\Delta lnFEM_t$		2.68**	1.14*		–2.35*			6.43**	–1.30**	–0.49**		2.14**
$lnFEM_{t-1}$			0.43**					2.60**		–1.65**		2.14**
$\Delta lnMAN_t$												
$lnMAN_{t-1}$	–0.13**	0.08**		0.37**				1.00**				
$\Delta lnSERV_t$	–1.52**	–3.34**				–0.56**		–1.64**		0.11*	–0.94**	–0.11**
$lnSERV_{t-1}$	0.28**			–0.32**		–0.11**		0.63**		0.19**	–0.15**	
$\Delta lnSCVA_t$	0.34**			0.70**				0.69**	0.78**	0.59**		
$lnSCVA_{t-1}$	0.60**	0.57**		–0.15**	0.38**	0.24**	–0.41**	1.21**	0.82**	1.12**		0.35**
$\Delta lnUNR_t$					0.07*		–0.40**			0.08**	0.07**	
$lnUNR_{t-1}$			–0.17**		0.05**					0.27**		
ΔMTR_t							0.38*					
MTR_{t-1}							0.30**					
ΔATR_t								1.15**	–1.63*	1.70**		
ATR_{t-1}				–1.08**		–0.50*	–2.40**		–2.26**	2.72**		–1.23**
$\Delta lnREPR_t$	–0.32**						–0.28**					
$lnREPR_{t-1}$										–0.15**		
Number of observations	33	33	34	34	34	70	33	33	34	34	34	70
Adjusted R^2	0.83	0.67	0.48	0.90	0.53	0.63	0.79	0.96	0.69	0.98	0.61	0.68

** significant at 5% level, * significant at 10%.
n.a. not applicable.
a) Δ indicates that the variable was used in first difference form. See Annex B for details of the specifications of the OECD Secretariat model.

the presence of barriers to entry into self-employment, including the existence of capital market failures; administrative burdens associated, particularly, with requirements to report to a number of different administrations; and the lower social security protection of the self-employed relative to wage earners. To counteract these barriers as well as to help people find a job, governments have put in place different programmes and schemes to stimulate self-employment and the creation of new enterprises. They have also tried to reduce the rate of failure of self-employed businesses, where this is judged to be due to the lack of necessary skills, particularly managerial skills.

As concluded by a recent Joint US-EU Seminar on Entrepreneurship [US Department of Labor (2000)], public policy can help entrepreneurship in several ways, although success in business creation must always depend on individual entrepreneurs. Self-employment depends on "conditions" (*e.g.* access to finance; administrative burdens; taxation; social policies like health, social insurance and pensions), "skills" (human capital, managerial skills) and "spirit" (or personal choice). Policy intervention should take all these dimensions into account. However, whereas governments can intervene to shape the general framework formed by the "conditions" and the "skills" in order to increase opportunities, the "spirit" rests on personal choices, vision, determination and willingness to take risks. These are conditioned by the culture, and by family and local traditions, and are not easy to modify. In fact, self-employment is also an imitative phenomenon. Since a culture that supports risk-taking and individual reward associated to effort plays an important role in supporting entrepreneurial activities, several governments have recently tried to promote a culture of entrepreneurship [OECD (1999*b*)]. One important avenue has been through initiatives in partnership with non-governmental institutions through the education system, to integrate education or vocational training and self-employment opportunities (*via* school or university projects).

Rather than attempt to review all policies designed to foster entrepreneurship, this section concentrates on policies, concerned with the self-employed as individuals, which can be considered to fall into the category of national active labour market policies. More precisely, the list of areas under consideration is as follows:

- policies to help self-employed people develop their businesses, and in particular take on employees when appropriate;
- policies directed against "false" self-employment;
- policies to assist unemployed people to enter self-employment;
- policies to help young people and women enter self-employment.

However, it must be noted that the uneven information about the measures taken in different countries and the lack of evaluations in most cases, limit the extent to which it is possible to judge the cost-effectiveness of policies, making very difficult to draw hard-and-fast conclusions about what works in these areas.

Policies to help self-employed people develop their businesses

The analysis above has noted the lower levels of training and the higher levels of employment instability of own-account workers, compared with employees. This may provide arguments for governments to facilitate access by the self-employed to appropriate training programmes, which might help to sustain the viability of their businesses and avoid unnecessary failure [Metcalf (1998)]. Unless the self-employed are able to organise themselves appropriately, they will fail to enjoy the economies of scale that are possible when training is conducted in larger companies. However, it would appear that only a few countries have adopted such programmes. They include the following:

- Italy, where, since 1996, Law 608/96 offers special training courses (eight weeks) for the self-employed with a component aimed at vocational guidance and analysis of entrepreneurial abilities and another component aimed at training and technical assistance.
- Belgium, where the EU National Action Plan for 1998 includes the promotion of vocational training outside normal working hours for the self-employed.
- Spain, where the "*Plan integral de Fomento Empresarial de Autónomos*", launched in 1999, aims to offer the self-employed counselling and advice to help them design their strategic business plan and improve competitiveness, by training in areas such as bookkeeping, marketing, financing, foreign trading, information and technology.

The analysis in Section II suggests that the proportion of own-account workers who become employers is quite low. Conversely, employers are no more likely to have come from the ranks of own-account workers than from employees. In some ways this is surprising, as own-account workers presumably have many of the skills needed by employers. However, the lack of management skills and experience of employing staff may act as a barrier to own-account workers transforming themselves into employers.

While most governments encourage SMEs in hiring new employees by reducing social contributions though a range of different programmes, few countries direct such

help specifically to the self-employed. Among those that have done so are:

- France, where the 1989 programme *Exoneration totale des cotisations patronales de Sécurité Sociale pour l'embauche d'un premier salarié* (extended to managers of *Sociétés à responsabilité limitée* in 1990 and to other associations, co-operatives and *mutuelles* in 1992) offered new employers exoneration from social security contributions for up to 2 years. According to an evaluation of the programme made by the French Ministry of Employment and Solidarity [DARES (1999*a*)], the average number of beneficiaries during the period 1990-98 was 70 000, with a peak around 90 000 in 1994 and in 1998. The net effect on employment of this measure has been estimated at around 20 per cent [DARES (1996)].
- Belgium, where the 1988 programme *Plus un, plus deux* offered a reduction of the employers' social security contributions for the first three employees, declining over a period of three years.
- Finland, where the 1998 reform reduced and simplified employers' social security contributions in businesses with less than five employees.
- Ireland, where the County Enterprise Board promotes the development of micro-businesses at local level, providing an employment grant (of up to IEP 5 000) for each new full-time job created.

Policies to combat false self-employment

At the same time as introducing policies to encourage self-employment, a number of governments have been concerned with the possible growth of "false" self-employment (work situations which are classed as self-employment primarily in order to reduce tax liabilities). A primary objective is to reduce the level of tax avoidance. While the main policy instruments involved are fiscal ones, labour market policies are also important, because incentives for "false" self-employment may also stem from overly strict labour protection laws. In addition, it has been suggested, for Germany, that policies to encourage self-employment, particularly those which encourage unemployed people to enter self-employment (see below), may encourage the development of self-employed businesses with relatively low levels of resources and that part of these might be classed as a form of false self-employment [Pfeiffer (1999)].

Recently, special measures were introduced in Germany to control false self-employment. As noted above, a high proportion of the very large increase in self-employment in the 1990s was accounted for by own-account workers. Further analysis showed that many of them appeared to be working for just one employer. According to estimates from the Federal Employment Office, in 1995, between 12 and 27 per cent of all self-employed without employees may have been "false" self-employed[23] [Pfeiffer (1999)]. To limit the tendency for wage workers to slide into the category of "false" self-employed, the German government laid down in 1999, more stringent conditions for a person, previously classified as an employee, to become classified as self-employed for social security purposes. According to the new regulation,[24] a person is classed as an employee if any three of the following five conditions are fulfilled:

- The person does not employ other workers at wages above DEM 630 per month (including family members).
- The person depends strongly upon one employer over a long time.
- The person is employed with tasks for which his/her employer or a comparable employer usually employs dependent workers.
- The person does not act as an entrepreneur.
- The person is employed with the same tasks by the same employer for whom he or she previously worked as an employee.

Similar policies have been introduced in a number of other countries, including:

- Greece, where concern over the growing incidence of false self-employment spurred the August 1998 Law on Industrial Relations according to which work agreements between self-employed persons and companies must be notified in writing to the Ministry of Labour within eight days, failing which the work will be regarded as falling within a dependent employment relationship.
- Belgium, where concern that false self-employment was present in all sectors [Ministère de l'Emploi (1995)] led the government to introduce a new procedure, through the Arrêté Royal of 25th January 1991, for monitoring the work relations of people entering self-employment from wage and salary working.
- Italy, where, in the context of limiting the informal economy, efforts to encourage enterprises and workers to "rise to the surface" have been continued in Law 196/97 and particularly by wage realignment contracts. These *contratti di riallineamento* provide for social security contributions to be progressively aligned to normal levels, and concern nearly 90 000 workers since 1997, the majority of whom worked in the agricultural sector.

Policies to help unemployed people enter self-employment

While flows from unemployment to self-employment are relatively small, the analysis above suggests that they are comparatively little affected by cyclical downturns and may provide a small, but valuable source of employment in recessions. Particularly when unemployment is high, it seems reasonable that a certain proportion of the unemployed will have the skills that are needed to begin and run successful businesses, but they may need to overcome considerable barriers in doing so. Over the years, governments in an increasing number of OECD countries have introduced policies to encourage these flows, by converting unemployment benefits into various forms of grants, to help unemployed people become self-employed.

Expenditure on such policies, as a percentage of total public spending on active labour market policies (ALMPs), varies from almost zero (Belgium) to 5 per cent (Greece) over the most recent period (Table 5.14). The number of participants in these schemes varies between almost zero (Belgium) to over 6 per cent (Sweden) of the numbers of unemployed. Over the whole period shown in the table, 1985 to 1998, there were increases in expenditures and in participants in around half the countries and decreases in the others. Particularly sharp increases were seen in Australia, Canada, Germany and Sweden while large declines were recorded in the Czech Republic, Spain and the United Kingdom. However, these schemes are too small to influence the overall movement of self-employment, and indeed no correlation was found between trends in self-employment and expenditures on these schemes.

While the general approach of the schemes for the unemployed, listed in Table 5.15, is the same in all countries, there are a number of important differences, as follows:

- *Eligibility:* in most countries, eligibility is broad enough to cover all registered unemployed receiving unemployment benefits. In France, people receiving the minimum reinsertion benefits (RMI) or the single-parent allowance (API) can also apply, and in Canada people having received parental or maternity benefits during the last five years who want to re-enter the labour market by creating their own business, are also eligible. Some countries fix a minimum length for the unemployment duration like Denmark (five months), France (six months) or Luxembourg (eight months), and others (Ireland, Portugal) give priority to the long-term unemployed.
- *Mode of financing and payment duration*: here a distinction can be made between two different models. The allowance is paid weekly or monthly at a rate equal to the unemployment benefit in Australia, Austria, Belgium, Canada, Denmark, Finland, Germany, Greece, Hungary, Ireland,

Table 5.14. **Public support for unemployed persons starting enterprises in selected OECD countries**

	Spending on such measures as percentage of spending on ALMPs [a]			Average annual inflows of participants			Ratio of inflows of participants to total unemployed		
	1985-1989	1990-1994	1995-1998 [b]	1985-1989	1990-1994	1995-1998 [b]	1985-1989	1990-1994	1995-1998 [b]
Australia	0.5	2.6	3.9	886	3 203	8 244	0.2	0.4	1.1
Belgium	0.7	0.3	0.2	1 881	439	284	0.4	0.1	0.1
Canada	..	2.2	4.1	..	6 347	12 904	..	0.4	0.9
Czech Republic	..	7.0	1.8	..	11 025	975	..	6.9	0.4
Denmark	1.8	6.4	3.5	2 153	5 887	3 124	1.1	2.2	1.7
Finland	1.8	2.2	2.1	3 075	7 000	6 050	2.7	2.3	1.7
France	5.1	2.5	1.1	67 367	59 568	50 006	2.8	2.3	1.6
Germany	0.4	0.3	2.1	7 150	24 000	84 800	0.3	0.9	2.3
Greece	4.4	8.7	5.1	4 983	7 533	5 775	1.7	2.3	1.3
Hungary	..	7.8	0.9	..	8 633	3 600	..	1.8	1.0
Ireland [c]	3.4	1.4 |	1.0	3 453	2 229 |	1 067	1.6	1.1 |	0.6
New Zealand	2.8	5.0	2.6	2 400	2 852	2 961	2.4	1.8	2.2
Portugal	5.8	5.7	2.7	4 603	15 481	6 731	1.6	6.8	2.0
Spain	24.5	17.6	4.9	63 438	69 177	33 333	2.3	2.5	1.0
Sweden	0.4	1.5	3.7	2 000	10 300	19 767	2.5	4.0	6.3
Switzerland	..	0.2	0.6	..	300	850	..	0.2	0.3
United Kingdom	4.8	2.9	0.7	80 000	37 400	6 000	4.6	1.6	0.3

a) Active labour market programmes (ALMPs) cover public employment services and administration, labour market training, youth measures, subsidised employment and measures for the disabled.
b) 1997 for Australia, Canada, Greece and the United Kingdom. 1996 for Ireland and Portugal.
c) Break in series.
Sources: OECD database on labour market programmes; OECD database on annual labour force statistics.

Table 5.15. Self-employment assistance for the unemployed

Countries	Programme	Date introduced	Eligibility criteria	Main features
Australia	*New Enterprise Incentive Scheme (NEIS)*	1985	Unemployed.	The assistance includes an income support allowance, for up to 52 weeks, equivalent to the basic rate of unemployment benefits. It also includes training in small business management, business skills and business plan development, business advice and mentor support during the first year of the business operation.
Austria	*Business Start-up Programme (UGP)*	1998	Unemployed claiming unemployment insurance or unemployment assistance.	The assistance includes an allowance that equals the unemployment benefits during a period of 9 months. Aid in counselling and training is also offered in the preparation phase and, under certain conditions, an allowance of ATS 63/day (USD 5/day) for the social insurance contributions can also be offered during the realisation phase.
Belgium		1992	Unemployed (from the first day). Young unemployed people can apply even without entitlement to an allowance.	The system consists of loans (of BEF 800 000, around USD 22 040) for start ups, subject to certain conditions.
Canada	*Self Employment Assistance*	Replaced SEI in 1992, reformed in 1996	Unemployed claiming (or having claimed within the last three years) unemployment insurance benefit as well as people having received maternity or parental benefits within the last five years.	Applicants must be legally entitled to work in Canada, have not participated previously in self-employment activity through a similar programme, must have attended an orientation session provided by the delivery agent and must have completed a self-evaluation on suitability for self-employment. They also have to agree to work full time (30 hours or more) and must also make a previously determined personal equity contribution to their self-employment business. Participants may not work on commission, but partnerships, limited companies, worker co-operatives and franchises are permitted subject to some conditions. If all those prerequisites are satisfied applicants can receive a weekly taxable allowance (initially for 52 weeks, but the period has been reduced since 1996) instead of unemployment insurance.
Denmark	*Enterprise Allowance Scheme*	1985 to 1998	Any insured person, unemployed for five months during the last eight.	Consists of a grant of 50% of unemployment benefits (in 1997 it was around DKK 70 000 per year, around USD 10 400), paid on a monthly basis during 2.5 years.
Finland	*Start-up grant*	1984	Unemployed.	The monthly allowance equals the employment subsidy but can be increased up to a maximum of 80% (that means by 2 500 to FIM 4 500 per month or between 450 and USD 840). The allowance is paid for up to 10 months and to receive it, training or experience in entrepreneurship is required.
France	*ACCRE Scheme*	1977, reformed in 1994 and 1997	Since 1997 directed to the unemployed (with or without benefits), and to people receiving the minimum reinsertion wage (RMI), or the single parent allowance (API).	Initially the financial assistance was set between 16 168 and FRF 43 000, but the maximum lump sum was reduced to FRF 32 000 in 1994 (around USD 5 750 of 1994) and finally eliminated in 1997 (if the business failed after 6 months the recipient had to repay the money). Since 1997 the main assistance has consisted of an exemption from social security contributions for one year (prior to 1997 it was for the first 6 months of activity). Applicants must demonstrate the likely viability of the project.
Germany	*Bridging Allowance*	1986, reformed in 1994	Unemployed.	The allowance equals the unemployment benefit or assistance, and is paid for up to 6 months. The administration assesses the sustainability of the planned new activity, which has to be at least 18 hours of work a week. This assessment is to ensure that the unemployed person, after a starting phase, is able to earn a gross monthly income equal to at least ⅔ of the average income of an employed person in a similar job. The social insurance contributions to be paid on these benefits are paid by the employment office. The scheme also involves a micro-finance loan component.

Table 5.15. **Self-employment assistance for the unemployed** *(cont.)*

Countries	Programme	Date introduced	Eligibility criteria	Main features
Hungary	*Self-employment assistance*		Unemployed.	A series of monthly payments equal to the regular unemployment compensation benefit (which can be extended 6 months beyond the UC one-year eligibility period). Support may also include reimbursement of up to half the cost of professional entrepreneurship counselling, and half the cost of training courses required.
Ireland	*Back to Work Allowance Scheme (BTWAS)*	1993	Unemployed.	Replaced the Area Enterprise Allowance Scheme (AEAS), introduced at the local level in 1992 for the long-term unemployed. The BTWAS is at national level and offers support for three years at a rate of 75% of the previous level of welfare income for the first year, 50% for the second one, and then 25%.
Italy	*Subsidised Loan (Act 608/96)*	1996	Unemployed in crisis areas, beginning with craft and manufacturing businesses.	Consists of grants from public funds of up to USD 30 000 (60% from non refundable grants and 40% from low interest loans to meet capital and operating costs). Investment projects are evaluated and selected according to their viability. Once the project is selected, applicants are "tutored" by specialised consultants and must undergo special training of up to eight weeks.
Netherlands	*Assistance to Self-employed Decree (BBZ)*	1985, reformed in 1998	Unemployed.	The programme allows for a loan for working capital (up to NLG 42 000 or around USD 21 150) and/or temporary income support up to 18 months. Since 1998 there is a trial period for unemployed starters to examine their potential markets and develop a business plan; an allowance for guidance and advice; an increase in the amount of credit; an extension of the period to award supplementary income support; the possibility of taking account of income from other sources (another job, partner's income) when deciding on the viability of a plan; and special provisions for persons who are handicapped or with care obligations.
Norway	*Benefit establishing own-business*	1990	Unemployed.	The allowance equals the unemployment benefit for up to 9 months (3 months are considered necessary for the start-up phase and 6 months for the development one). Commercial assessments are required from the municipality (or from another competent body) to start and maintain the new enterprise.
Poland	*Self-Employment Assistance*		Selected registered unemployed.	Consists of a lump sum provided through a loan programme from the Labour Fund, with immediate repayment required if the business is not started. The maximum support is 20 times the national average wage and interest rates are at market rates. An incentive to businesses to survive at least 2 years is provided by a 50% reduction of the repayment of the principal.
Portugal	*Support grant for self-employment (CPE)*	1989	Unemployed.	Recipients are given the total amount of their unemployment benefits in the form of a grant for to creating their own business. An additional non-refundable grant for planning, setting up and operating the project is also provided. The maximum grant is 12 x the minimum wage and may be increased by 20% for beneficiaries more than 45 years old and unemployed for more than 1 year. A viable business plan is a requirement.
Spain	*Unemployment benefit capitalisation*	1985, reformed in 1992	Since 1992, only owned-workers have been eligible.	The programme was initially directed to the unemployed entitled to unemployment benefits, but since 1992 has been restricted to unemployed people wanting to create co-operatives or limited companies of workers. It consists of an advance payment of the full unemployment benefit to start-up the business. It can also be accompanied by a partial reduction of social security contributions during two years, and an income tax exemption (up to one million of ESP, around USD 6 690).
	Promotion of autonomous workers		Unemployed registered at National Employment Service.	Consists of loans for investment in fixed capital at subsidised interest rates (up to ESP 500 000) as well as subsidies for technical assistance (up to 100% of the cost).

Table 5.15. **Self-employment assistance for the unemployed** *(cont.)*

Countries	Programme	Date introduced	Eligibility criteria	Main features
Sweden	*Start-up grants*	1987	Unemployed aged above 20.	Grants are available for applicants presenting a viable project. The grant equals the benefit that would have been paid from the insurance fund (it can also be provided for people not entitled to such benefits) and it is payable for a maximum of 6 months (in some cases for 12).
United Kingdom	*Business Start Up Scheme (BSUS)*	1993	Unemployed for at least 6 weeks.	Replaced the Enterprise Allowance Scheme (EAS) of the 1980s. It consists of an allowance of GBP 40 (USD 66) per week paid for one year. More emphasis is now given to likely business survival.
United States	*Self-Employment Assistance*	1994	Unemployed.	Only seven states introduced SEA. The programme paid weekly allowances to participants and provided support services for business start-ups. SEA participants were limited to no more than 5% of those receiving regular unemployment insurance benefits.

USD values are calculated with the 1998 average daily nominal exchange rate of the different currencies *vis-à-vis* the USD.
Sources: Country submissions and reviews by the European Commission.

Sweden, the United Kingdom and the United States. It is given in the form of a lump-sum grant during the start-up phase of the new businesses in France, Italy, Luxembourg, Poland, Portugal and Spain.[25] Only the Netherlands seems to offer the possibility to choose between the two models, leaving applicants to decide if they prefer a loan to provide working capital, or temporary income support, or a mixture of the two.

- *Controls on the viability of the self-employment business*: some countries, including Canada, France, Germany, the Netherlands, Portugal, Spain and Sweden require a business plan to be presented and approved by the competent authorities. To be eligible for the German Bridging Allowance, participants must show that the proposed self-employed activity can generate at least two-thirds of the gross monthly income received by an employed person for the same kind of job. By contrast, the United Kingdom Enterprise Allowance Scheme (EAS), now replaced by the Business Start-Up Scheme (BSUS), places no restriction on the potential wage level. Overall, the trend across OECD countries appears to be towards greater stress on a viable business plan.
- *Availability of counselling and training*: several countries include this as a component of their schemes, but do so in different ways. For example, in France, self-employed people creating firms through the programme *Aide aux Chômeurs Créateurs d'Entreprise* (ACCRE) can receive a number of *Chèques-Conseil* to spend on counselling at the beginning of the creation of the firm and during the following year. In Denmark, a subsidy of DKK 7 000 is offered to cover consultancy fees for start-ups. In the United Kingdom, the Training for Work Programme, set up in 1993, allows for an increase in the weekly BSUS allowance received by the unemployed when undergoing training. Overall, the importance attached to training and counselling in these programmes appears to be increasing.

Despite all the experience gained with these schemes over the years, few evaluations are yet available. While one explanation for this is a lack of a "scientific" evaluation culture in many European countries, another relates to the difficulty of assessing the size of the deadweight, substitution and displacement effects arising from such schemes. Deadweight effects occur, for example, when someone intending to set up as self-employed becomes unemployed for a period simply in order to become eligible for a grant which is not strictly needed. Substitution effects occur when a self-employment opportunity which would have been taken up by one person is taken by another, simply because the second person is eligible for a grant. Displacement effects occur when new self-employment businesses, supported by grants, drive unsubsidised businesses out of the market; such effects are very difficult to measure unless the population of businesses likely to be affected is well-defined.

Evaluation of the recent Canadian Self-Employment Assistance programme (SEA) indicated benefits to participants both in terms of increased earnings, and increased confidence in the use of skills in the labour market. On the other hand, it was also concluded that it applied only to a narrow group of the potential self-employed, and took some time to recoup its funding. These findings are echoed by most studies, which report a generally positive international experience of success of self-employment assistance programmes in increasing participant's income and reducing dependency on unemployment insurance, though they apply only to a small group of highly motivated individuals [Martin (2000); Wong *et al*. (1998)]. As the grants are in lieu of unemployment benefits, the cost of the programmes tends to be low, even after allowing for likely deadweight effects.

One crucial question is the *survival rate* of the businesses concerned. This seems to depend very considerably on the severity of the criteria applied to the business plan. For example, in Germany, where the criteria are particularly stringent, a study by the *Institut für Arbeitsmarkt und Berufsforschung* of a sample of newly created businesses since 1994 set up by unemployed people who received the "Bridging Allowance" found that, three years after receiving the support, 70 per cent were still self-employed and that on average each recipient had taken on one employee. A very similar result was found in the Netherlands. In Sweden, four years after having received the Start-up allowance, 59 per cent of the unemployed were still in business [Okeke (1999)] whereas in France 51 per cent of the enterprises created by the unemployed under the ACCRE scheme were still in place three years after having received the aid, compared with a survival rate of 42 per cent for those enterprises created by the unemployed without aid, and 61 per cent for the enterprises created by workers [DARES (1999*b*)]. In other countries, *e.g*. Ireland, Norway and the United Kingdom, anecdotal evidence suggests that only a relatively small share of subsidised enterprises showed good longer term survivability [OECD (1996)].

However, high levels of survival need to be interpreted carefully before one can assume that the programme in question worked well. High survival rates can be associated with "creaming" – the programme assures success by accepting only the very best candidates. In turn, this raises the likelihood of deadweight costs – such candidates

might very well have created their own business anyway [O'Leary (1998)]. Lower survival rates do not necessarily imply that a higher proportion of the money spent has no long-term effect. Some studies suggest that a higher percentage of programme participants than non-participants succeed in finding long-term employment, even if their businesses do fail [OECD (1998*b*)].

Self-employment policies for young people and women

Young people

Section III showed that the expressed preferences for self-employment among young people are relatively high (especially among well-qualified young men). However, as noted above, the incidence of self-employment increases with age, and the relative incidence among young people is low [see, for example, Blanchflower (1998)]. The reason for this low incidence is no doubt to be found in the lower levels of capital (both financial and human) of most young people. Enterprises begun by young people generally tend to be less successful, and have higher failure rates than those begun by older people. Government policies to encourage young people to enter self-employment are thus likely to receive a high degree of interest, but may also require a comparatively high investment of resources and provide uncertain returns.

Over recent years, a number of countries have introduced self-employment policies specially tailored for young people (see Table 5.16). None of the schemes have yet been subjected to careful evaluation, as far as known. By comparison with policies to assist self-employment in general, special emphasis is always laid on training. However, in many other respects, the schemes take rather different approaches:

- The Italian Law 44/86 scheme stresses help in the development of business plans, and involves the use of a mentor firm to provide part of the technical training and support to the new enterprise.
- The French *Encouragement au Développement d'Entreprises Nouvelles* scheme is principally directed to young people already eligible for employment contracts (*emplois jeunes*), offering them a reimbursable interest-free loan.
- The Canadian Graduate Employment/Self-employment Initiative aims at helping relatively well-qualified young people to set up businesses in growth sectors, offering them a range of training programmes, including distance education.
- The United Kingdom New Deal offers since 1999 to young people who have found it difficult to find work, a programme that includes a special course designed to help potential participants decide if self-employment is suitable for them. If they join the self-employment option, they receive an allowance and can get advice and support from training providers for up to six months. The programme also offers the opportunity to train towards an approved qualification.

Women

In almost all countries, the numbers of women in self-employment have begun to increase considerably. However, women employees and labour market entrants still tend to express considerably lower preferences for entering self-employment than men. In addition, the type of self-employment sought by many women tends to be different. For example, some women tend to seek forms of self-employment which fit in with family activities, in particular self-employment which can be done at home, and for relatively short hours. Differences between women self-employed and men can be due to many factors, ranging from differences in cultural attitudes towards entrepreneurship, risk-taking, and women's role in society, as well as to the prevailing economic structure and the availability or affordability of family services. Personal characteristics such as family size, marital status, and the ages of children also play an important role for many women in the decision to become self-employed [Williams (1998)].

Women considering entry to self-employment may face barriers which are additional to those faced by men [OECD (1999*c*)]. These stem partly from their comparative lack of a track record as entrepreneurs. Women face also extra difficulties due to different characteristics in the way they start and manage their business. In general, women tend to start with lower capital than men, and tend to favour less ambitious projects, smaller investment and smaller loans. The positioning in the market is also different because women have in general less market connections from their previous job than do men, and have less mobility due to child-care obligations [OECD (1999*d*)]. Female self-employed are less likely than men to have employees and are more likely to establish service sector firms, whose main assets are intangibles, which are difficult and costly to evaluate, increasing the risks perceived by lenders. Extra difficulties in attracting finance can also arise from the weight of social values that may make financial intermediaries see women as less capable of running a business.

For these reasons, and also as part of equal employment and gender mainstreaming strategies, a number of countries have introduced programmes to encourage women's self-employment. As can be seen from the partial list in Table 5.17, one strong emphasis is on the provision of loans, to counteract the fact that women may face additional difficulties in obtaining finance. In addition, some of the

Table 5.16. **Programmes to promote self-employment among youth in selected OECD countries**

Countries	Programme	Date introduced	Eligibility criteria	Main features
Australia	*Self-Starter*	1985	Young unemployed between 18-25 years old.	An extension of the New Enterprise Incentive Scheme (NEIS). The support consists of a grant (up to AUD 3 000, around USD 1 880) and is accompanied by the provision of appropriate business skills and financial assistance.
Belgium		1992	Young unemployed, even without entitlement to an unemployment allowance.	An extension of the support system for the unemployed. The support consists of subsidised loans of BEF 800 000 (USD 22 040) for starts-up under certain conditions.
Canada	*The Graduate/ Self Employment Initiative*	1994	Young graduates.	Supports new business by encouraging graduates to become self-employed in growth sectors. Support includes a training allowance of CAD 800 (USD 540) and a distance education programme.
	Sectoral Youth Internship Program		Young people.	Offers partial financial support for a period of up to 18 months to help subsidise on-the-job training for self-employment.
	Young Entrepreneur Financing Program	1996	Young people between 18-34 years old.	The programme offers a loan (up to CAD 25 000, around USD 16 850) for the start-up phase, with a duration of 4-7 years, and is complemented by 50 hours of management support. It also gives access to professional business management counselling as part of a tailor-made business plan.
France	*Youth Initiative Departmental Funds*	1985-1993	Young people.	Programme offering low-cost advice (legal, financial, administrative, etc.) in the form of grant aid (between FRF 10 000-100 000, around USD 1 695-16 950). The programme was later extended to other age groups and finally merged into a broader system of aid to entrepreneurship.
	EDEN Scheme	1997	Young people eligible for "emplois jeunes". Also for people receiving the minimum reinsertion wage (RMI), or the single parent allowance (API) as well as workers buying out the enterprise.	The scheme gives exemption from social insurance contributions and a reimbursable advance payment (consisting of a loan free of interests up to a maximum of FRF 40 000 or USD 6 780). The granting of the payment is subject to the recipient obtaining additional financial support at least half the sum of the advance. Counselling, training and support activities may also be subsidised.
Greece	*Programme for new professionals*	1988	Unemployed between 18 and 30 years old.	A subsidy is offered, up to 12 months, to young unemployed people to start their new business, of up to GDK 250 000 (USD 850) for business in the trade and service sectors and up to GDK 350 000 (USD 1 185) in the manufacturing sector. A viability plan is required.
Italy	*Act 44/86*	1986	Youths under 36 years old.	Provides monetary subsidies (90% of investment and operating cost in the South and 60% in the rest of Italy) and technical assistance during the initial years of activity, for youth starting a business in the agriculture, crafts or manufacturing sectors in areas supported by EU funds.
	Act 236/93	1993	Unemployed under 35 years old.	Offers monetary subsidies and technical assistance co-financed by EU Funds to start up new firms or co-operatives providing services in certain sectors (environmental, tourism, cultural and agricultural) in Southern Italy (extended to other "crisis areas" in 1997).
Portugal	*Support for entry into self-employment (ACPE)*	1995	Young persons between 18 and 25 years (until 30 years in the region of Madeira).	Offers a non-refundable installation grant corresponding to 12 times the minimum wage as well as assistance in drawing up the viability plan after a training course of six weeks in organisation and management. This programme is also available for long-term unemployed qualified for independent professions, including handicrafts, sector for which an additional aid may be available.

Table 5.16. **Programmes to promote self-employment among youth in selected OECD countries** *(cont.)*

Countries	Programme	Date introduced	Eligibility criteria	Main features
United Kingdom	*New Deal*	1999	Young people 18-24 years old.	After a short course (one day a week for four weeks) to help decide whether self-employment is a suitable choice for them, participants receive further information and training in order to produce a business plan. The self-employment option for participants in the New Deal for Young People offers an allowance plus a grant of up to GBP 400 (USD 660) paid in equal weekly or fortnightly instalments. The profits earned by the business during the six first months can be reinvested or put in a bank account until the period of the option has ended.

USD values are calculated with the 1998 average daily nominal exchange rate of the different currencies *vis-à-vis* the USD.
Sources: Country submissions and reviews of the European Commission.

Table 5.17. **Programmes to promote self-employment among women in selected OECD countries**

Countries	Programme	Date introduced	Eligibility criteria	Main features
Canada	*Women Enterprise Initiative Loan Program*		Women wanting to start-up their own business.	Offers access up to a maximum of CAD 100 000 (around USD 67 400) in debt financing to finance a start-up or expand an existing business.
Finland	*Kera loans for women entrepreneurs*	1997	Unemployed women.	Designed to the creation, development and growth of firms up to five employees. It offers a loan up to USD 16 000 at an interest rate of 3.6% The programme also includes advice (regarding the business potential and entrepreneurial capacity of the applicants) and a follow-up of the business.
Germany	*Business Start-up Programme (ERP)*	1969	Women wanting to start their own business.	Offers a maximum amount of DEM 2 million (USD 1 140 000) for 20 years and at an interest rate of 4.5%.
Italy	*Positive actions for female entrepreneurs (Act 215/92)*	1997	Women wishing to become entrepreneurs.	Provides access to reduced rate financing by banks. It also offers capital grants (up to 50% of capital and up to 60% in disadvantaged areas) to create or modernise a business and grants of operating costs (up to 30% and up to 40% in disadvantaged areas).
Norway	*Network Credit, Rural Development Support Scheme*		Female entrepreneurs with no more than one part-time employee.	Micro-loan (up to USD 5 000) granted as a revolving fund to a group of 5-7 women entrepreneurs who have applied together for the loan. The group members are obliged to undergo preliminary training and make use of advisory services.
Sweden	*Women's loans, Network Bank*	1994	Unemployed women.	Concessionary loans (up to SEK 50 000 per person, around USD 6 300) to promote business start-ups. Loans are given for a duration of three years and have a monthly repayment requirement.

USD values are calculated with the 1998 average daily nominal exchange rate of the different currencies *vis-à-vis* the USD.
Sources: Country submissions and reviews of the European Commission.

schemes feature special training and counselling. While these schemes are relatively new, and full evaluations are not available, a number of them have reported success rates, in terms of the creation of viable enterprises, equal to, or only just below, the rates usually obtained by male participants in general schemes to support self-employment. This is, for example, the case for Sweden, where the Swedish National Labour Market Board [Okeke (1999)] reports that gender had no incidence on the survival rate of the enterprises created by the self-employed with public support. Even while not having specific programmes to support female self-employment, a similar result was found for France with the ACCRE programme [DARES (1999*b*)].

Conclusions

Over the past twenty-five years, self-employment has taken a larger place in total non-agricultural employment in a number of OECD countries. The growth rate of self-employment, which generally lagged behind total employment growth in the 1970s, outstripped it over the 1990s in most OECD countries, notably in Canada and Germany. In addition, for the OECD as a whole, the proportion of self-employed with employees, which had been tending to fall in most countries over the 1970s and the 1980s, tended to stabilise during the 1990s.

The causes of these developments are not yet well understood. At the national level, the reasons for the rapid growth in self-employment in Canada and Germany in the 1990s, and even that in the United Kingdom in the 1980s, are still not clear, though it is noticeable that in all these cases, the growth was concentrated on self-employed without employees. In addition, in both Germany and the United Kingdom the growth was accompanied by substantial government programmes designed to encourage self-employment and foster a climate of entrepreneurship. At the international level, the clearest statistical relationship is the tendency for self-employment to be lower in countries with higher GDP per capita. As GDP per capita has been rising in all countries, including those where self-employment is rising, other factors are clearly at work. However, an econometric investigation has failed to find a consistent set of explanatory factors across countries. One possible exception is the growing share of national income accounted for by capital in many countries, a development which might be expected to favour self-employment, whose income comes partly from their capital and partly from their labour.

At the same time, the distinction between self-employment and wage and salary employment may have weakened, as suggested, for example, by the growth of certain forms of self-employment which offer working relationships close to those of an employee. This applies to many forms of franchising, which has been growing in importance in many countries over the 1990s. While the responsibility of the franchisor for the franchisee is generally less than that of an employer for an employee, the freedom of action of a franchisee may be hardly any greater than that of an employee, despite the financial responsibility that he or she carries. In addition to Canada, Germany and the United Kingdom, several countries, at different times, have seen growing numbers of self-employed people who work for just one company, and whose self-employment status may be little more than a device to reduce total taxes paid by the firms and workers involved – the phenomenon of so-called "false" self-employment.

Concerns have sometimes been expressed about the quality of self-employment jobs, particularly in terms of their working conditions and their earnings. The results presented in this chapter show that own-account workers (self-employed people without employees) tend to report poorer working conditions than employees, including longer hours of work. In addition, almost a fifth of self-employed people in the European Union say that they would prefer to work as employees, and more own-account workers than employees say they feel their jobs are insecure. Nevertheless, the self-employed also feel that they are in greater control of their working conditions. This is one facet of the greater independence they enjoy. This, in turn, may help to explain why they generally display higher levels of job satisfaction than employees in similar types of job.

The evidence also shows that the degrees to which own-account workers engage in training and use computers are markedly less than those of employees. To some extent this may be due to the nature of self-employment jobs and the lack of opportunities that most self-employed people have to engage in training, particularly in view of their long working hours. However, it may be a serious problem when the self-employed people in question lack skills, particularly management skills, which are vital for their businesses.

The working conditions of employers (self-employed with employees), appear to be better than those of self-employed people without employees. Their job satisfaction is even higher. However, the working conditions of their employees need also to be taken into consideration. While precise evidence is not available, the analysis above, referring to firms with under 10 employees, notes that employees in such companies tend to report lower levels of autonomy and job complexity than other employees, and are less likely to have received training in the last 12 months, or to use computers. They are also less likely to receive compensation for unsocial hours of work and to benefit from family-friendly leave and working-time policies, and are slightly

less inclined than employees in larger firms to think their job is secure. However, their reported job satisfaction is as high, if not higher, as that of workers in larger companies.

Policies to help unemployed people enter self-employment have been in place in several countries for many years, and considerable experience has been gained in applying them. Generally, what evaluations exist suggest they have enabled a number of unemployed people to enter self-employment, and it has been argued that this experience may be positive even if their businesses fail. However, it seems clear that the number of unemployed people who can benefit from such schemes is small, and tends to be restricted to the relatively well-educated with previous work experience.

A number of governments have recently introduced policies to facilitate entry into self-employment for women and young people. Policies for young people are likely to be difficult to implement successfully – while young people tend to show considerable interest in self-employment, relatively few have the work experience and skills which seem necessary for success. Unfortunately, there are still very few rigorous evaluations of the cost-effectiveness of these and other policies to support self-employment.

In conclusion, the growth in self-employment seems to offer signs of a partial renaissance, not simply because of the rapid surges in self-employment seen in a small number of OECD countries, but also in the fact that increases in the proportion of self-employment have been seen in such a wide range of countries. The available econometric evidence provides weak grounds for concluding that these increases are due to high levels of unemployment, or to labour market rigidities. However, it is likely that, in some countries, part of the growth represents a transfer of work from wage and salary to self-employment in order to reduce tax liabilities. Another factor behind increases in self-employment may be changes in industrial organisation, including the higher levels of sub-contracting and outsourcing which are apparent in many OECD countries. In addition, the fact that the main growth in self-employment is seen in the fastest growing sectors of the service economy suggests that the growth in self-employment is also a response to the new opportunities offered by OECD economies.

NOTES

1. This paragraph draws on Barbieri (1999).
2. The figure refers to the proportion of self-employed, including owner-managers of incorporated enterprises, who are owner-managers of incorporated enterprises.
3. As noted above, this analysis excludes the agricultural sector and unpaid family workers.
4. The period 1990-97 is not a complete cycle. The choices of 1979 and 1990 as peak years are based on OECD analyses of cyclical trends provided in http://interprod.oecd.org/std/li2.htm. As country peaks differ slightly, they were chosen on a majority basis.
5. There were increases in the numbers of self-employed in both the western and eastern Länder. In absolute terms, between 1991 and 1998, self-employment increased from 2.69 million to 3.05 in the western Länder and from 0.35 million to 0.54 million in the eastern Länder.
6. In the 1990s, however, the growth rates of self-employment and civilian employment were the same for women.
7. Meager (1991) shows that a substantial part of the rise in self-employment in the United Kingdom in the 1980s occurred in the construction industry, where arrangements involving "false" self-employment were common. The recent data show that the fall in the proportion of employers in self-employment in the United Kingdom continued after the increase in self-employment came to an end.
8. The statistical information on which this and the following two paragraphs are based is available from the Secretariat.
9. Can the concentration of self-employment growth in the fastest-growing areas of employment growth explain the fact that self-employment growth has tended to be faster than total civilian employment growth, in a number of countries? A shift-share analysis, at the 1-digit level, for occupation and industry (not reported), showed that the patterns of self-employment by industry and occupation could account for all of the excess growth of self-employment over total civilian employment in Mexico, but very little of that in Canada and Germany.
10. On the other hand, few available longitudinal surveys have a large enough sample size to allow analysis of the self-employed population, particularly employers.
11. Some European Union countries were excluded from the analysis because of deficiencies in the data.
12. Communication from Dr. Friedhelm Pfeiffer.
13. These figures refer to the stability of the state of being employed, or self-employed. They do not imply that individual self-employment jobs tend to last for a shorter period than employee jobs.
14. Based on a communication from the Austrian Federal Ministry of Labour, Health and Social Affairs.
15. As before, the calculations exclude the agricultural sector.
16. Reported data on working hours need to be treated with caution. In particular, self-employed people, especially those working at home, may tend to carry out work and other activities at the same time. Some time-use studies have concluded that survey data over-estimate self-employed working hours by comparison with employees, but there is little doubt that self-employed hours are considerably longer.
17. See Annex 5.A for details of the question used.
18. These preferences are likely to be relatively reliable, in the sense that many self-employed have previous experience of wage or salary employment. It should be noted, however, that a substantial proportion of the 18 per cent said they would like to return to self-employment later in their careers.
19. The explanation given by Robson and Wren (1999) is that the pre-tax level of remuneration in self-employment is likely to be more closely related to the level of individual effort than in the case of dependent employment. Part of the attraction of self-employment may thus be the extra income that can be obtained by extra effort. High levels of marginal tax rates, which reduce the return from extra effort in self-employment, may thus, the argument goes, reduce the attraction of self-employment relative to dependent employment.
20. The "cultural" variables comprised Schumpeter's competitiveness index, Mauro's bureaucratic efficiency index, the cultural indices of Hofstede and of Hoppe (power distance, uncertainty avoidance, individualism and masculinity), and indices of dissatisfaction with life and democracy, derived from the Eurobarometer surveys. The economic variables were GDP per capita, the female labour share, the share of labour income in GDP, the unemployment rate and population density. The strongest correlations were found with the indices of dissatisfaction.
21. EPL data are available only for the late-1980s and late-1990s [OECD (1999*a*)]. A number of previous studies, including OECD (1992), Grubb and Wells (1993), and OECD (1999*a*) have found positive correlations between the strictness of EPL and the self-employment rate. However, the first two studies were simple bivariate analyses and, while the 1999

study included a range of control variables, self-employment was not its primary focus. A re-examination of the issue by Robson (2000) has resulted in the conclusion that the positive correlations observed in previous analyses are not robust to changes in specification. More precisely, when the agricultural sector is excluded and when GDP per capita is included as an independent variable, as standard in all analyses specifically directed towards explaining the development of self-employment, the correlations observed in OECD (1999*a*) tend to disappear or become insignificant.

22. A further study of possible links between self-employment and macro variables was made by Parker (2000) using co-integration techniques, which are designed to discover whether a set of non-stationary variables move together over time in a stable, long-term relationship. Unlike standard regression techniques, they are not able to determine whether the influence of one variable on another is positive or negative. The results suggest that self-employment bears a stable long-term relationship with a wide range of explanatory variables including GDP per capita, the unemployment rate, value added in services as a percentage of GDP, the average rate of personal taxation, payroll taxes, and the unemployment benefit replacement rate.

23. The survey conducted in 1995 by the Federal Employment Office considered that a "false" self-employed was a person whose main job was done as self-employed but who was dependent on an employer (in the sense of someone who could be considered to be part of the staff of the firm, or used material from the employer, or worked with other employees of the same employer).

24. The rules for the "false" self-employed, *Regelungen gegen Scheinselbständigkeit* (Law on false self-employment), were introduced in 1998, as part of a general labour market reform programme but the definition of "false" self-employment was changed in 1999 in the *Gesetz zur Förderung der Selbtständigkeit* (Law to promote self-employment).

25. Meager (1994) suggests that, in principle, the form of financing may influence the number and the type of people entering the scheme as well as the kind of activity they engage in. While there can be little difference between those two models in terms of budget costs, economic theory suggests that as capital markets are rarely perfect, the impact of a model that reduces the capital constraints on entry to self-employment may be different from another that increases the stream of income during the initial period of self-employment.

Annex 5.A

Definitions and Data Sources

Definitions

Most current information on self-employment, and the bulk of the data used in this chapter, come from household interview surveys of the labour force. Two basic methods are used. In the first, the respondent is asked to assess his or her own status by selecting one out of a list of possible categories. In the second, the interviewer poses a number of questions about the employment circumstances of the respondent and then makes the assessment on the basis of the replies. The two methods can of course be combined, and the interviewer may or may not be asked to give guidance to the respondent on the meaning of the term, "self-employment" (Table 5.A.1).

For all OECD countries, the labour force survey definitions for self-employment form part of the definitions of the "economically active" population adopted by the Thirteenth International Conference of Labour Statisticians, convened by the International Labour Office in Geneva in October 1982, and amplified by the resolution on the International Classification of Status in Employment (ICSE-93), adopted by the Fifteenth International Conference of Labour Statisticians, convened by the International Labour Office in Geneva in January 1993.* ICSE-93 classifies jobs with respect to the type of explicit or implicit contract of employment of the person with other persons or organisations. It contains the following groups:

1. employees;
2. employers;
3. own-account workers;
4. members of producers' co-operatives;
5. contributing (or unpaid) family workers;
6. workers not classifiable by status.

Employee, or "paid employment" jobs are those jobs where the incumbents hold explicit or implicit employment contracts which give them a basic remuneration which is not directly dependent upon the revenue of the unit for which they work. Some or all of the tools, capital equipment, information systems and/or premises used by the incumbents may be owned by others, and the incumbents may work under direct supervision of, or according to strict guidelines set by, the owner(s) or persons in the owners' employment. Persons in paid employment jobs are typically remunerated by wages and salaries, but may be paid by commission from sales, by piece-rates, bonuses, or in-kind payments such as food, housing or training.

Self-employment jobs, on the other hand, are those jobs where the remuneration is directly dependent upon the profits derived from the goods and services produced. The incumbents make the operational decisions affecting the enterprise, or delegate such decisions while retaining responsibility for the welfare of the enterprise (in this context, "enterprise" includes one-person operations.)

Owner-managers of incorporated enterprises are workers who hold a job in an incorporated enterprise, in which they: *a)* alone, or together with other members of their families or one or a few partners, hold controlling ownership of the enterprise; and *b)* have the authority to act on its behalf as regards contracts with other organisations and the hiring and dismissal of persons in the "paid employment" of the same organisation. For labour force analysis they are normally best classified as self-employed, either as own-account workers or, more often, employers. However, for taxation purposes they are generally counted as employees, and this is also the classification in the System of National Accounts. Separate identification facilitates international comparisons, but relatively few countries are able to do this, as shown in Table 5.A.1.

Data sources

Data on flows into and out of self-employment

Data on flows taken from the European Union Labour Force Survey are obtained from retrospective questions. Respondents are asked to give both their current employment status (unemployed, employee, self-employed, etc.) and their status one year previously. Thus, it is possible to obtain information on the reported status, one year ago, of people who are currently self-employed. This allows a calculation of the net inflows into self-employment over the year. For example, if the information comes from the Labour Force Survey of 1992, it will allow the calculation of the net inflows into self-employment over the period 1991 to 1992. The full range of responses to the questions on current and retrospective status provides the current status of all people who said their status was self-employed the year before. This allows an estimate of the outflows over the year in question.

* The information set out below draws heavily on the Resolutions of the International Conferences of Labour Statisticians.

Table 5.A.1. **Classification of owner-managers of incorporated businesses (OMIBs) in labour force surveys**

	Procedure [a]	If Procedure A		Verbal guidance by interviewer?	Written guidance?	Separate identification of OMIBs	Classification of OMIBs in the statistics used in this chapter [b]
		Number of categories in survey	Who makes classification?				
Australia	C	4	Interviewer	No	No	No	Employees
Austria	C	8	..	Yes	Yes	No	Unclear
Belgium	B	6	Interviewer	Yes	Yes	Yes	Self-employed
Canada	C	3	Respondent	Yes	Yes	Yes	Self-employed
Czech Republic	A	5	Interviewer	Yes	No	No	Unclear
Denmark	A	4	Respondent	Yes	Yes	No	Mainly self-employed
Finland	B	3	..	Yes	Yes	No	Mainly self-employed
France	A	8	Interviewer	Yes	Yes	Yes	Mainly self-employed
Germany	A	10	Respondent	Yes	Yes	No	Mainly self-employed
Greece	A	4	Respondent	Yes	Yes	No	Mainly self-employed
Hungary	A	11	Interviewer	Yes	Yes	Yes	Self-employed
Iceland	A	5	Interviewer	Yes	Yes	No	Unclear
Ireland	A	4	Respondent	Yes	Yes	Yes	Mainly self-employed
Italy	A	11	Respondent	Yes	No	No	Unclear
Japan	A	8	Respondent	No	Yes	No	Employees
Korea	A	6	Interviewer	Yes	No	No	Mainly self-employed
Luxembourg	A	4	Interviewer	Yes		No	Unclear
Mexico	A	7	Respondent	Yes	Yes	Yes	Mainly self-employed
Netherlands	C	4	Interviewer	No	No	No	Mainly self-employed
New Zealand	A	4	Interviewer	Yes	Yes	No	Unclear
Norway	C		..	..	Yes	No	Mainly employees
Poland	A	3	Respondent	Yes	Yes	No	Mainly self-employed
Portugal	A	5	Interviewer	Yes	No	Yes	Unclear
Spain	A	9	Interviewer	Yes	Yes	No	Self-employed
Sweden	A	3	Respondent	Yes	Yes	No	Mainly self-employed
Switzerland	C		..	Yes	Yes	Yes	Self-employed
Turkey	A	5	Interviewer or respondent	Yes		No	Mainly self-employed
United Kingdom	C	4	Interviewer	Yes	Yes	Yes	Mainly self-employed
United States	C	4	Interviewer	No	Yes	Yes	Employees

.. Data not available.

a) Procedure A means that the respondent or interviewer classifies jobs by selection between a predetermined set of categories.
Procedure B means that the classification is based on the replies to a number of questions put by the interviewer about the employment contract.
Procedure C means that the method used is a combination of A and B.

b) It is assumed that when the procedure is self-assessment alone, OMIBs will mainly classify themselves as self-employed.

Sources: Elias (1997) and further information from the ILO survey on self-employment classifications supplied to the Secretariat by the ILO; except last two columns: information submitted to EUROSTAT and OECD by national authorities.

It must be noted that information of this kind is subject to large reporting errors and is, in general, only suitable for indicating broad trends over time. A check on the data quality by matching information from the retrospective questions to actual changes in the numbers of self-employed from year to year found only a relatively poor correspondence between them.

Data on working conditions and preferences

The second European survey on working conditions

This survey is described in European Foundation (1997*a*). It was conducted in the fifteen countries of the European Union (Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal, Spain, Sweden and the United Kingdom) between 27 November 1995 and 19 January 1996, in close collaboration with Eurostat and National Statistical Institutes, many of which conduct similar surveys on a national basis. The survey is also known as Eurobarometer 44.2. It was specifically designed to monitor working conditions as perceived by respondents, rather than attempting to define them objectively.

The multi-stage random sampling design was designed to be representative of the employed population (employed and self-employed, including people with jobs from which they were temporarily absent). All people aged 15 and over were included in the sampled population, with the exception of retired, unemployed people and housewives. The target number of interviews was 1 000 cases per country, with the exceptions of 500 for Luxembourg, 1 000 for the former west Germany and 1 000 for the former east Germany. The figures achieved were close to these targets, giving a total of just under 16 000 interviews for Europe as a whole. The samples were found to over-represent Services and Public

Administration, while under-representing Agriculture, as well as some Industry sub-sectors, causing the grouping of NACE categories "Mining and quarrying" and "Manufacturing".

Comparisons by the Secretariat between the numbers of self-employed people, as estimated by the survey, and national estimates of the proportion of self-employed in total employment show that, for most countries the figures are quite close – once the agricultural sector has been excluded from both sets of estimates. On the unweighted average for the 13 countries for which data from both sources are available, the proportion of self-employment is 16.7 per cent according to the survey as opposed to 15.5 per cent according to the national statistics published in OECD *Labour Force Statistics*. The main discrepancies occur for Italy and Portugal.

The information relating to company size was derived from the question, "How many people are employed in total in your country by the company/organisation where you work? (none, 1 to 9, 10 to 49, 50 to 99, 100 to 499, 500 or more, don't know)".

The Employment Options of the Future survey

This survey, carried out in 1998, was a survey into potential labour supply, launched and managed by the European Foundation for the improvement of Living and Working Conditions. The sample size of the survey was 30 557 interviews and its coverage the 15 European Union Member States, and Norway. It focussed on those either employed or aspiring to be employed within the next five years. During the course of 2000-2001 a range of publications with further analysis of the survey data will be disseminated by the Foundation (see *http://www.eurofound.ie* or contact *dmp@eurofound.ie*. for further details).

Annex 5.B

Macroeconomic Determinants of Self-employment: An Analysis for Five OECD Countries

This annex reports the results of Secretariat analyses to investigate the determinants of self-employment for five countries. As the data available for each country were subject to restrictions, the results for individual countries were supplemented by a pooled regression. The countries selected were as follows: Japan (steady fall in the self employment rate over recent decades); Italy (persistently high self-employment rate); United Kingdom, Canada and Germany (rapid increases in self-employment over the 1980s or 1990s).

Two regression models for the self-employment rate

Two types of regression model were used to reflect alternative ways of modelling the self-employment rate. Each was used for the regressions by country and the pooled regressions, in turn:

Model 1: the log of the non-agricultural self-employment rate, SER, was regressed on the explanatory variables listed in Table 5.B.1 below.

Table 5.B.1. **Variable specifications and sources**

Variable Code	Variable Name	Source
SER	Self-employment rate calculated as self-employment as a percentage of civilian employment.	OECD Labour Force Statistics database.
SE	Self-employment, except unpaid family workers and excluding the agricultural sector.	OECD Labour Force Statistics database.
EMP	Civilian employment	OECD Labour Force Statistics database.
GDP	GDP per capita, US$ and exchange rates of 1990.	OECD National Accounts database.
FEM	Proportion of women in total employment, except unpaid family workers and excluding the agricultural sector.	OECD Labour Force Statistics database.
MAN	Share of manufacturing industries in GDP value added.	OECD National Accounts database.
SERV	Share of services in GDP value added.	OECD National Accounts database.
SCVA	Share of capital in value added, calculated as GDP evaluated on cost basis minus compensation of workers, expressed as proportion of GDP evaluated on cost basis.	OECD National Accounts database.
UNR	Unemployment rate, national definition.	OECD Analytical database.
ATR	Average tax rate, proxied by ratio of general government outlays to GDP.	OECD National Accounts database.
MTR	Ratio of general government gross liabilities to GDP	OECD Analytical database.
REPR	Benefit replacement rates; averages over average and ⅔ of earnings of "Average Production Worker".	OECD database on Benefit Entitlements and Gross Replacement Rates. Data are not available for each year and missing observations were supplied from a spline function.

Model 2: the log of the self-employment rate was decomposed in the following way:

$$\text{Ln SER} = \text{Ln SE-Ln EMP} = \beta'_1.\mathbf{x_1} + \varepsilon:$$

$$\text{Ln SE} = \beta'_2.\mathbf{x_2} + \varepsilon,$$

where SE is the number of self-employed and EMP the total number of employed. The list of independent variables, $\mathbf{x_2}$, thus includes EMP as well as the variables listed in Table 5.B.1. The regressions by country were based on a comparatively small number of observations. In order to have comparable data for the five counties included in the analysis on both an individual and pooled basis, observations were restricted to the period up to 1994. Special attention was given to the breaks in series occasioned by the German reunification of 1990.

Proxies were required for the tax variables, because alternative sources of data were not available for a sufficiently long run of consecutive years. The ratio of general government outlays to GDP as a proxy for average tax rates has a straightforward rationale and has been used by many authors. The ratio of general government gross liabilities to GDP, included as a supplementary indicator of tax pressure, was used by Robson and Wren (1999) to instrument the marginal tax rate.

Regressions by country

The regression model used was a so-called "error correction" model (ECM), designed to allow short- and long-run effects to be distinguished. The equation has the form

$$\Delta y_t = \alpha + \beta'.\,\Delta\mathbf{x_t} - y_{t-1} + \delta'.\mathbf{x_{t-1}} + \varepsilon_t \qquad (1)$$

where y is the natural logarithm of the non-agricultural self-employment or self-employment rate; **x** is a matrix of observations of the explanatory variables (used in logarithmic form, with the exception of the marginal and average tax rates); α is a constant term and ε the error term.

The β's can be interpreted as estimates of the short-run impact of changes of the explanatory variables on the dependent variable (the rate of non agricultural self-employment) and the δ's as the long-run impact.

Pooled regressions

The pooled regressions were estimated in a similar way, over the same period, using an ECM specification with a set of time and country dummies, **T** and **C**:

$$\Delta y_t = \alpha + \beta'.\,\Delta\mathbf{x_t} - y_{t-1} + \delta'.\mathbf{x_{t-1}} + \lambda'.\mathbf{T} + \tau'.\mathbf{C} + \varepsilon_t \qquad (2)$$

The other variables are exactly the same as in the individual country regressions.

The model selection was based partly on the minimum AIC, BIC and C(P) criteria [AIC, BIC and C(P) provide an indication of the minimum sum of squares of the residuals, taking account of the number of variables and of observations] and partly on the results of forward and backward stepwise regressions. Where there were signs of residual autocorrelation a Cochrane-Orchutt transformation was applied.

The results reported in Table 5.13 contain only those variables found to be significant at the 10 per cent level. Other variables were discarded from the regressions. Further details of the results are available from the Secretariat.

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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*, 1979-1999 (forthcoming), and the OECD *Labour Market Statistics* CD-ROM (forthcoming). Users can refer to notes and sources published in OECD, *Labour Force Statistics*, 1978-1998.

Sources and definitions are otherwise specified at the bottom of each table.

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.

Table A. **Standardized unemployment rates in 25 OECD countries**

As a percentage of total labour force

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Australia	7.0	9.6	10.8	10.9	9.7	8.5	8.6	8.5	8.0	7.2
Austria	..	..	..	4.0	3.8	3.9	4.4	4.4	4.5	3.7
Belgium	6.7	6.6	7.2	8.8	10.0	9.9	9.7	9.4	9.5	9.0
Canada	8.1	10.3	11.2	11.4	10.4	9.4	9.6	9.1	8.3	7.6
Czech Republic	..	..	..	4.4	4.4	4.1	3.9	4.8	6.5	8.8
Denmark	7.7	8.4	9.2	10.1	8.2	7.3	6.8	5.6	5.2	5.2
Finland	3.2	6.7	11.6	16.4	16.7	15.3	14.6	12.7	11.4	10.3
France	9.0	9.5	10.4	11.7	12.3	11.7	12.4	12.3	11.9	11.3
Germany [a]	4.8	4.2	4.5	7.9	8.5	8.2	8.9	9.9	9.4	8.7
Greece	6.4	7.0	7.9	8.6	8.9	9.2	9.6	9.8	10.7	..
Hungary	..	..	9.9	12.1	11.0	10.4	10.1	8.9	8.0	7.1
Ireland	13.4	14.8	15.4	15.6	14.4	12.3	11.7	9.9	7.6	5.8
Italy	9.0	8.6	8.8	10.2	11.2	11.6	11.7	11.7	11.9	11.4
Japan	2.1	2.1	2.2	2.5	2.9	3.2	3.4	3.4	4.1	4.7
Luxembourg	1.7	1.7	2.1	2.6	3.2	2.9	3.0	2.8	2.7	2.3
Netherlands	6.2	5.8	5.6	6.6	7.1	6.9	6.3	5.2	4.0	3.3
New Zealand	7.8	10.3	10.3	9.5	8.2	6.3	6.1	6.7	7.4	6.8
Norway	5.3	5.6	6.0	6.1	5.5	5.0	4.9	4.1	3.3	3.3
Poland	..	..	..	14.0	14.4	13.3	12.3	11.3	10.6	..
Portugal	4.6	4.0	4.2	5.7	7.0	7.3	7.3	6.8	5.2	4.5
Spain	16.3	16.4	18.4	22.7	24.1	22.9	22.2	20.8	18.8	15.9
Sweden	1.7	3.1	5.6	9.1	9.4	8.8	9.6	9.9	8.3	7.2
Switzerland	..	2.0	3.1	4.0	3.8	3.5	3.9	4.2	3.5	..
United Kingdom	7.1	8.9	10.0	10.5	9.6	8.7	8.2	7.0	6.3	6.1
United States	5.6	6.8	7.5	6.9	6.1	5.6	5.4	4.9	4.5	4.2
European Union [b]	8.1	8.4	9.1	10.7	11.1	10.7	10.8	10.6	9.9	9.2
OECD Europe [b]	8.0	8.2	8.9	10.7	11.0	10.5	10.5	10.3	9.7	9.2
Total OECD [b]	6.1	6.8	7.4	8.2	8.1	7.7	7.7	7.4	7.1	6.8

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, U.S. 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.

a) Up to and including 1990, western Germany; subsequent data concern the whole of Germany.

b) For above countries only.

Source: OECD (2000), *Quarterly Labour Force Statistics*, No. 1.

Table B. Employment/population ratios, activity rates and unemployment rates by sex for persons aged 15-64 years[a]

Both sexes

Percentages

	Employment/population ratio						Labour force participation rate						Unemployment rate					
	1990	1995	1996	1997	1998	1999	1990	1995	1996	1997	1998	1999	1990	1995	1996	1997	1998	1999
Australia	67.9	67.5	67.3	66.3	67.2	68.2	73.0	73.5	73.6	72.4	73.0	73.6	7.0	8.1	8.5	8.5	7.9	7.3
Austria	..	68.4	67.3	67.2	67.4	68.2	..	71.5	71.1	70.9	71.3	71.6	..	4.4	5.3	5.2	5.5	4.7
Belgium	54.4 |	56.3	56.3	57.0	57.3	58.9	58.7 |	62.1	62.2	62.6	63.2	64.6	7.3 |	9.4	9.5	9.0	9.4	8.7
Canada	70.3	67.6	67.3	68.0	68.9	70.1	76.6	74.7	74.6	74.9	75.2	75.9	8.2	9.5	9.7	9.2	8.4	7.6
Czech Republic	..	69.4	69.3	68.7	67.5	65.9	..	72.3	72.1	72.1	72.2	72.2	..	4.0	3.9	4.8	6.5	8.7
Denmark	75.4 |	73.9	74.0	75.4	75.3	76.5	82.4 |	79.5	79.5	79.8	79.3	80.6	8.5 |	7.0	6.9	5.4	5.1	5.2
Finland	74.1	61.0	61.9	62.8	64.0 |	66.0	76.6	72.3	72.5	72.1	72.4 |	73.6	3.2	15.6	14.7	12.8	11.6 |	10.3
France	59.9	59.0	59.2	58.8	59.4	59.8	66.0	66.8	67.4	67.1	67.4	67.8	9.2	11.7	12.2	12.4	11.9	11.8
Germany	64.1 |	64.7	64.4	64.0	64.4	64.9	68.4 |	70.5	70.7	71.0	71.0	71.2	6.3 |	8.2	8.9	9.9	9.3	8.7
Greece	54.8 |	54.5	54.9	54.8	55.6	..	59.1 |	60.1	61.0	60.8	62.5	..	7.2 |	9.3	9.9	9.8	11.0	..
Hungary	..	52.9	52.7	52.7	53.8	55.7	..	58.9	58.5	57.8	58.4	59.9	..	10.2	9.9	8.7	7.8	7.0
Iceland[b, c]	79.9	80.5	80.4	80.0	82.2	84.2	82.1	84.7	83.6	83.1	84.5	85.9	2.7	5.0	3.7	3.8	2.7	1.9
Ireland	52.3	53.8	54.8	56.1 |	59.8	62.5	60.2	61.5	62.3	62.7 |	65.0	66.3	13.2	12.4	12.0	10.5 |	7.9	5.8
Italy	53.9 |	50.5	50.6	50.5	51.8	52.5	59.8 |	57.3	57.7	57.7	59.0	59.6	9.9 |	11.9	12.3	12.5	12.3	11.8
Japan	68.6	69.2	69.5	70.0	69.5	68.9	70.1	71.5	72.0	72.6	72.6	72.4	2.2	3.3	3.5	3.5	4.2	4.9
Korea	61.2	63.7	63.8	63.7	59.5	59.7	62.8	65.1	65.1	65.4	64.0	63.9	2.5	2.1	2.1	2.7	7.0	6.5
Luxembourg	59.1 |	58.5	59.1	59.9	60.2	61.6	60.1 |	60.3	61.1	61.5	61.9	63.1	1.6 |	2.9	3.3	2.5	2.8	2.4
Mexico[c]	58.0	58.2	59.1	61.1	61.4	61.2	59.9	61.8	61.9	63.3	63.2	62.5	3.1	5.8	4.5	3.5	3.0	2.1
Netherlands	61.1 |	64.2	65.4	67.5	69.4	70.9	66.2 |	69.2	69.9	71.5	72.6	73.6	7.7 |	7.2	6.5	5.6	4.4	3.6
New Zealand	67.3	70.0	71.1	70.5	69.5	70.0	73.0	74.7	75.8	75.6	75.2	75.2	7.8	6.3	6.2	6.7	7.6	6.9
Norway[b]	73.1	73.5 |	75.3	77.0	78.3	78.0	77.1	77.4 |	79.2	80.2	80.9	80.6	5.3	5.0 |	4.9	4.0	3.2	3.2
Poland	..	58.1	58.4	58.8	58.9	..	..	67.4	66.9	66.4	66.1	..	..	13.7	12.7	11.5	10.9	..
Portugal	67.5 |	63.2	63.6	64.7 |	66.4	67.3	70.9 |	68.4	68.9	69.8 |	70.1	70.6	4.9 |	7.6	7.7	7.2 |	5.2	4.6
Spain[b]	51.1	47.4	48.2	49.5	51.2	53.8	60.9	61.4	62.0	62.5	63.1	63.9	16.1	22.9	22.1	20.7	18.8	15.9
Sweden[b]	83.1 |	72.2	71.6	70.7	71.5	72.9	84.6 |	79.5	79.5	78.7	78.1	78.5	1.8 |	9.3	10.2	10.4	8.4	7.1
Switzerland[c]	79.6	78.1	78.3	78.1	79.3	79.7	81.1	80.8	81.3	81.5	82.3	82.2	1.8	3.4	3.8	4.2	3.7	3.1
Turkey	54.5	52.7	52.5	50.2	50.5	51.9	59.4	56.8	56.0	53.7	54.0	56.2	8.2	7.1	6.3	6.6	6.6	7.7
United Kingdom[b]	72.4	69.3	69.8	70.8	71.2	71.7	77.8	75.9	76.1	76.2	75.9	76.3	6.8	8.7	8.2	7.1	6.2	6.1
United States[b]	72.2	72.5	72.9	73.5	73.8	73.9	76.5	76.9	77.1	77.4	77.4	77.2	5.7	5.6	5.5	5.0	4.5	4.3
European Union[d]	61.6 |	60.1	60.3	60.6 |	61.5 |	62.6	67.3 |	67.4	67.7	67.9 |	68.3 |	69.0	8.4 |	10.8	10.9	10.8 |	10.0 |	9.3
OECD Europe[d]	61.2 |	59.6 |	59.7	59.6 |	60.3 |	61.5	66.6 |	66.4 |	66.5	66.3 |	66.6 |	67.5	8.2 |	10.3 |	10.2	10.1 |	9.5 |	8.9
Total OECD[d]	65.2 |	64.3 |	64.5	64.9 |	65.1 |	65.9	69.4 |	69.5 |	69.7	69.8 |	69.9 |	70.4	6.0 |	7.4 |	7.3	7.0 |	6.9 |	6.4

\| Indicates break in series.

a) Ratios refer to persons aged 15 to 64 years who are in employment or in the labour force divided by the working age population, or in unemployment divided by the labour force.

b) Refers to persons ages 16 to 64.

c) The year 1990 refers to 1991.

d) For above countries only.

Source: OECD, *Labour Force Statistics, 1979-1999,* Part III, forthcoming. For Austria, Belgium, Denmark, Greece, Italy, Luxembourg and the Netherlands data are from the European Labour Force Survey.

Table B. Employment/population ratios, activity rates and unemployment rates by sex for persons aged 15-64 years[a] *(cont.)*

Men

Percentages

	Employment/population ratio						Labour force participation rate						Unemployment rate					
	1990	1995	1996	1997	1998	1999	1990	1995	1996	1997	1998	1999	1990	1995	1996	1997	1998	1999
Australia	78.5	76.1	75.9	74.7	75.2	76.5	84.4	83.2	83.3	81.8	82.1	82.7	6.9	8.6	9.0	8.7	8.4	7.5
Austria	..	77.6	76.1	75.9	75.9	76.7	..	80.8	80.4	80.0	80.2	80.5	..	4.0	5.4	5.1	5.4	4.7
Belgium	68.1 |	66.9	66.8	67.1	67.0	67.5	71.3 |	72.3	72.2	72.2	72.5	73.0	4.6 |	7.4	7.4	7.1	7.6	7.5
Canada	77.8	73.5	73.1	73.8	74.3	75.5	84.9	81.6	81.3	81.4	81.4	82.0	8.3	9.9	10.1	9.4	8.7	7.9
Czech Republic	..	77.9	78.1	77.4	76.3	74.3	..	80.6	80.7	80.5	80.3	80.2	..	3.4	3.3	3.9	5.0	7.3
Denmark	80.1 |	80.7	80.5	81.3	80.2	81.2	87.1 |	85.6	85.3	85.2	83.5	85.0	8.0 |	5.7	5.6	4.6	3.9	4.5
Finland	76.7	63.1	64.3	65.2	66.8 |	68.4	79.6	75.0	75.1	74.6	75.1 |	75.9	3.6	15.9	14.4	12.5	11.1 |	9.8
France	69.7	66.6	66.7	66.2	66.5	66.8	75.0	73.9	74.5	74.3	74.1	74.4	7.0	9.8	10.5	10.9	10.3	10.3
Germany	75.7 |	73.8	72.9	72.2	72.5	73.1	80.1 |	79.5	79.5	79.6	79.6	79.7	5.4 |	7.2	8.4	9.3	8.8	8.3
Greece	73.4 |	72.2	72.6	71.9	71.6	..	76.8 |	77.2	77.4	76.9	77.1	..	4.4 |	6.4	6.2	6.4	7.2	..
Hungary	..	60.2	60.2	60.3	60.6	62.6	..	67.9	67.4	66.6	66.3	67.8	..	11.4	10.7	9.5	8.5	7.5
Iceland[b, c]	85.2	84.0	84.3	84.2	86.0	88.2	87.3	88.4	87.3	87.1	87.9	89.4	2.4	5.0	3.4	3.3	2.3	1.4
Ireland	67.8	66.3	66.6	67.6 |	71.4	73.5	77.7	75.8	75.8	75.6 |	77.8	78.3	12.8	12.5	12.1	10.6 |	8.2	6.1
Italy	72.0 |	65.7	65.3	65.0	66.7	67.1	77.0 |	72.4	72.3	72.2	73.7	73.7	6.5 |	9.3	9.7	9.8	9.6	9.0
Japan	81.3	81.9	82.1	82.4	81.7	81.0	83.0	84.5	85.0	85.4	85.3	85.3	2.1	3.1	3.5	3.5	4.3	5.0
Korea	73.9	77.2	76.7	76.0	71.7	71.5	76.2	79.0	78.6	78.2	77.8	77.1	3.0	2.3	2.4	2.8	7.9	7.3
Luxembourg	76.4 |	74.3	74.4	74.3	74.6	74.4	77.4 |	75.9	76.3	75.7	76.0	75.7	1.3 |	2.1	2.5	1.9	1.9	1.7
Mexico[c]	84.1	81.5	82.7	84.7	84.8	84.8	86.4	86.4	86.4	87.2	87.1	86.4	2.6	5.7	4.3	2.8	2.6	1.8
Netherlands	75.2 |	75.0	75.7	77.9	79.6	80.3	79.7 |	79.9	80.0	81.4	82.4	82.6	5.7 |	6.2	5.3	4.4	3.4	2.7
New Zealand	76.1	78.6	79.0	78.4	77.1	77.3	83.0	83.8	84.2	84.1	83.5	83.2	8.3	6.3	6.2	6.7	7.7	7.1
Norway[b]	78.6	78.1 |	80.0	81.7	82.8	82.1	83.4	82.4 |	84.1	85.0	85.6	85.0	5.8	5.2 |	4.8	3.9	3.2	3.4
Poland	..	64.7	65.2	66.1	65.8	..	..	73.9	73.5	73.2	72.8	..	..	12.5	11.3	9.8	9.5	..
Portugal	80.1 |	72.1	72.0	72.5 |	75.3	75.5	82.8 |	77.3	77.3	77.5 |	78.6	78.7	3.3 |	6.8	6.9	6.4 |	4.1	4.0
Spain[b]	71.0	63.0	63.6	64.9	67.0	69.6	80.4	76.8	77.1	77.2	77.7	78.3	11.8	18.0	17.4	15.9	13.7	11.1
Sweden[b]	85.2 |	73.5	73.2	72.4	73.5	74.8	86.7 |	81.7	81.7	81.0	80.7	80.9	1.8 |	10.2	10.7	10.8	8.8	7.5
Switzerland[c]	90.0	87.4	86.8	85.9	87.2	87.2	91.1	90.1	89.8	89.9	90.1	89.6	1.2	2.9	3.4	4.4	3.2	2.7
Turkey	76.9	74.6	74.5	74.0	73.6	71.7	83.6	80.5	79.8	78.8	78.8	77.9	8.0	7.3	6.6	6.2	6.6	8.0
United Kingdom[b]	82.1	76.1	76.3	77.4	78.1	78.4	88.3	84.7	84.6	84.4	83.9	84.1	7.1	10.2	9.8	8.2	6.9	6.8
United States[b]	80.7	79.5	79.7	80.1	80.5	80.5	85.6	84.3	84.3	84.2	84.2	84.0	5.7	5.6	5.4	4.9	4.5	4.1
European Union[d]	74.7 |	70.4	70.3	70.4 |	71.3 |	72.0	80.0 |	77.8	77.9	77.8 |	78.1 |	78.4	6.7 |	9.5	9.8	9.6 |	8.7 |	8.2
OECD Europe[d]	75.3	70.7 |	70.7	70.7	71.4	72.2	80.7	77.9 |	77.9	77.7	77.9 |	78.4	6.8	9.2 |	9.2	8.9	8.3 |	8.0
Total OECD[d]	78.2 |	75.5 |	75.6	75.9 |	76.0 |	76.6	82.7 |	81.1 |	81.2	81.1 |	81.2 |	81.5	5.4 |	7.0 |	6.9	6.5 |	6.4 |	6.0

\| Indicates break in series.

a) Ratios refer to persons aged 15 to 64 years who are in employment or in the labour force divided by the working age population, or in unemployment divided by the labour force.

b) Refers to persons ages 16 to 64.

c) The year 1990 refers to 1991.

d) For above countries only.

Source: OECD, *Labour Force Statistics, 1979-1999,* Part III, forthcoming. For Austria, Belgium, Denmark, Greece, Italy, Luxembourg and the Netherlands data are from the European Labour Force Survey.

Table B. Employment/population ratios, activity rates and unemployment rates by sex for persons aged 15-64 years[a] *(cont.)*

Women

Percentages

	Employment/population ratio						Labour force participation rate						Unemployment rate					
	1990	1995	1996	1997	1998	1999	1990	1995	1996	1997	1998	1999	1990	1995	1996	1997	1998	1999
Australia	57.1	58.9	58.7	57.8	59.2	59.9	61.5	63.7	63.8	63.0	63.9	64.5	7.2	7.6	8.0	8.1	7.3	7.2
Austria	..	59.2	58.6	58.5	59.0	59.7	..	62.3	61.8	61.8	62.5	62.7	..	4.9	5.3	5.3	5.6	4.8
Belgium	40.8 |	45.4	45.6	46.7	47.5	50.2	46.1 |	51.7	52.0	52.9	53.8	56.0	11.5 |	12.3	12.4	11.6	11.7	10.3
Canada	62.7	61.7	61.5	62.2	63.6	64.7	68.3	67.8	67.9	68.3	69.1	69.8	8.1	9.1	9.3	8.9	8.0	7.3
Czech Republic	..	61.0	60.6	59.9	58.7	57.4		64.1	63.6	63.7	64.0	64.1	..	4.8	4.7	6.0	8.2	10.5
Denmark	70.6 |	67.0	67.4	69.4	70.3	71.6	77.6 |	73.3	73.6	74.2	75.1	76.1	9.0 |	8.6	8.4	6.5	6.4	5.9
Finland	71.5	58.9	59.4	60.4	61.2 |	63.5	73.5	69.5	69.9	69.5	69.7 |	71.2	2.7	15.2	15.0	13.1	12.1 |	10.8
France	50.3	51.5	51.7	51.5	52.3	52.9	57.2	59.8	60.3	60.1	60.8	61.3	12.1	13.9	14.3	14.2	13.9	13.7
Germany	52.2 |	55.3	55.5	55.4	56.0	56.5	56.4 |	61.1	61.5	62.0	62.3	62.3	7.5 |	9.5	9.7	10.7	10.0	9.3
Greece	37.5 |	38.0	38.5	39.1	40.3	..	42.6 |	44.3	45.8	46.0	48.5	..	12.0 |	14.1	15.8	15.1	16.8	..
Hungary	..	45.9	45.5	45.5	47.3	49.0	..	50.3	49.9	49.3	50.8	52.3	..	8.7	8.8	7.7	6.9	6.3
Iceland[b, c]	74.5	76.8	76.5	75.6	78.3	80.2	76.8	80.9	79.8	79.1	80.9	82.3	3.0	5.0	4.1	4.4	3.3	2.5
Ireland	36.6	41.2	43.0	44.6 |	48.2	51.3	42.6	47.0	48.8	49.7 |	52.1	54.3	14.0	12.3	11.9	10.4 |	7.5	5.5
Italy	36.4 |	35.6	36.1	36.2	37.1	38.1	43.2 |	42.5	43.3	43.6	44.5	45.6	15.8 |	16.3	16.6	16.8	16.7	16.4
Japan	55.8	56.4	56.8	57.6	57.2	56.7	57.1	58.4	58.9	59.7	59.8	59.5	2.3	3.4	3.6	3.6	4.2	4.7
Korea	49.0	50.6	51.1	51.6	47.4	48.1	49.9	51.5	51.9	52.8	50.4	50.8	1.9	1.7	1.6	2.4	5.8	5.3
Luxembourg	41.4 |	42.2	43.6	45.4	45.6	48.5	42.5 |	44.1	45.7	47.1	47.6	50.2	2.5 |	4.4	4.7	3.7	4.2	3.3
Mexico[c]	34.2	36.5	37.4	39.7	40.0	39.6	35.7	38.9	39.3	41.7	41.5	40.7	4.3	6.1	4.9	4.7	3.6	2.7
Netherlands	46.7 |	53.2	54.8	56.9	58.9	61.3	52.4 |	58.3	59.6	61.3	62.5	64.4	10.9 |	8.7	8.1	7.2	5.8	4.9
New Zealand	58.5	61.7	63.4	62.7	62.1	63.0	63.2	65.8	67.5	67.2	67.1	67.4	7.3	6.4	6.1	6.7	7.4	6.6
Norway[b]	67.2	68.8 |	70.4	72.2	73.6	73.8	70.7	72.1 |	74.1	75.3	76.1	76.1	4.9	4.7 |	4.9	4.1	3.3	3.0
Poland	..	51.8	51.8	51.8	52.2	..	..	61.0	60.5	59.9	59.7	..	..	15.1	14.3	13.5	12.6	..
Portugal	55.4 |	54.8	55.6	57.2 |	58.0	59.4	59.6 |	59.9	60.9	62.2 |	62.0	62.8	7.0 |	8.6	8.8	8.2 |	6.6	5.3
Spain[b]	31.6	32.0	33.0	34.3	35.7	38.3	41.8	46.2	47.0	48.0	48.7	49.9	24.4	30.8	29.8	28.4	26.7	23.2
Sweden[b]	81.0 |	70.8	69.9	68.9	69.4	70.9	82.5 |	77.2	77.1	76.3	75.5	76.0	1.8 |	8.4	9.6	9.9	8.0	6.7
Switzerland[c]	68.7	68.3	69.3	69.8	71.0	71.8	70.6	71.1	72.3	72.7	74.2	74.5	2.6	4.0	4.2	4.0	4.3	3.6
Turkey	32.9	31.5	31.0	27.2	28.0	32.0	36.0	33.7	32.8	29.4	30.0	34.4	8.7	6.7	5.5	7.7	6.7	6.9
United Kingdom[b]	62.8	62.5	63.3	64.0	64.2	64.9	67.2	67.1	67.5	68.0	67.8	68.4	6.5	6.9	6.3	5.8	5.3	5.1
United States[b]	64.0	65.8	66.3	67.1	67.4	67.6	67.8	69.7	70.1	70.7	70.7	70.7	5.6	5.7	5.5	5.1	4.7	4.4
European Union[d]	48.7 |	49.8	50.3	50.7 |	51.6 |	53.1	54.6 |	56.9	57.5	57.9 |	58.5 |	59.5	10.8 |	12.4	12.5	12.4 |	11.8 |	10.9
OECD Europe[d]	47.2 |	48.4 |	48.7	48.5 |	49.3 |	50.8	52.7 |	54.9 |	55.1	54.9 |	55.5 |	56.6	10.3 |	11.8 |	11.7	11.7 |	11.1 |	10.2
Total OECD[d]	52.5 |	53.3 |	53.7	54.1 |	54.4 |	55.4	56.4 |	58.0 |	58.3	58.7 |	58.8 |	59.5	6.9 |	8.1 |	8.0	7.8 |	7.6 |	6.9

\| Indicates break in series.

a) Ratios refer to persons aged 15 to 64 years who are in employment or in the labour force divided by the working age population, or in unemployment divided by the labour force.

b) Refers to persons ages 16 to 64.

c) The year 1990 refers to 1991.

d) For above countries only.

Source: OECD, *Labour Force Statistics, 1979-1999,* Part III, forthcoming. For Austria, Belgium, Denmark, Greece, Italy, Luxembourg and the Netherlands data are from the European Labour Force Survey.

Table C. Unemployment, labour force participation rates and employment/population ratios by age and sex
Both sexes

Percentages

		1990			1996			1997			1998			1999		
		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	Unemployment rates	13.2	5.1	5.4	14.8	6.8	7.7	15.9	6.6	7.2	14.5	6.3	6.1	13.9	5.7	5.6
	Labour force participation rates	70.4	79.9	44.1	70.1	80.2	45.8	66.8	79.6	45.1	67.6	80.0	46.6	70.6	80.0	46.9
	Employment/population ratios	61.1	75.8	41.8	59.7	74.7	42.3	56.2	74.4	41.9	57.8	75.0	43.7	60.8	75.4	44.3
Austria	Unemployment rates	..	..	..	6.9	5.1	4.6	7.6	4.8	5.2	7.5	5.0	6.4	5.9	4.5	4.8
	Labour force participation rates	..	..	..	59.6	83.5	30.8	58.4	83.9	30.0	58.5	84.7	29.9	58.4	85.1	30.7
	Employment/population ratios	..	..	..	55.5	79.3	29.4	54.0	79.9	28.5	54.2	80.4	28.0	54.9	81.3	29.2
Belgium	Unemployment rates	14.5	6.5	3.5	20.5	8.6	4.5	21.3	7.9	4.7	20.4	8.4	5.3	22.6	7.4	5.7
	Labour force participation rates	35.5	76.7	22.2	32.8	80.8	22.8	32.0	81.0	23.1	32.6	81.2	23.8	32.9	82.5	26.2
	Employment/population ratios	30.4	71.7	21.4	26.1	73.9	21.8	25.2	74.6	22.0	26.0	74.4	22.5	25.5	76.4	24.7
Canada	Unemployment rates	12.4	7.3	6.0	15.3	8.7	7.9	16.2	7.8	7.6	15.1	7.1	6.9	14.0	6.4	5.9
	Labour force participation rates	69.7	84.2	49.3	62.3	83.4	47.2	61.5	83.9	48.2	61.9	84.3	48.6	63.5	84.6	49.9
	Employment/population ratios	61.1	78.0	46.3	52.7	76.1	43.5	51.5	77.3	44.5	52.5	78.3	45.3	54.6	79.2	46.9
Czech Republic	Unemployment rates	..	..	..	7.2	3.2	3.6	8.6	4.1	3.6	12.4	5.5	3.8	17.0	7.5	4.8
	Labour force participation rates	..	..	..	49.3	88.6	38.7	48.3	88.7	39.7	49.1	88.5	38.6	48.3	88.6	39.4
	Employment/population ratios	..	..	..	45.8	85.8	37.3	44.2	85.0	38.3	43.0	83.7	37.1	40.1	81.9	37.5
Denmark	Unemployment rates	11.5	7.9	6.1	10.6	6.0	6.1	8.1	4.8	5.1	7.2	4.6	5.1	10.0	4.3	4.2
	Labour force participation rates	73.5	91.2	57.1	73.8	87.5	50.6	74.2	87.0	54.1	71.6	87.5	53.1	73.3	88.2	56.6
	Employment/population ratios	65.0	84.0	53.6	66.0	82.2	47.5	68.2	82.8	51.4	66.4	83.4	50.4	66.0	84.4	54.2
Finland	Unemployment rates	9.4	2.1	2.7	27.9	12.2	21.0	25.3	10.7	15.0	23.8	9.5	14.0	21.5	8.4	10.2
	Labour force participation rates	57.5	89.7	43.8	41.3	87.5	45.1	44.6	86.8	42.0	45.8	87.1	42.0	49.4	87.7	43.9
	Employment/population ratios	52.2	87.9	42.6	29.8	76.8	35.6	33.3	77.5	35.7	34.9	78.9	36.2	38.8	80.3	39.2
France	Unemployment rates	19.1	8.0	6.7	26.3	11.0	8.4	28.1	11.1	8.5	25.4	10.8	8.7	26.6	10.7	8.7
	Labour force participation rates	36.4	84.1	38.1	29.2	86.4	36.6	28.0	86.0	36.7	28.0	86.2	36.1	28.4	86.2	37.4
	Employment/population ratios	29.5	77.4	35.6	21.5	76.9	33.5	20.1	76.4	33.6	20.9	76.8	33.0	20.8	77.0	34.2
Germany	Unemployment rates	5.6	5.7	11.6	9.3	8.0	13.9	10.2	8.9	15.3	9.1	8.4	14.8	8.5	7.9	13.9
	Labour force participation rates	59.8	78.0	41.6	52.0	83.6	44.2	51.1	84.3	45.2	51.1	84.7	44.8	51.2	84.9	44.7
	Employment/population ratios	56.4	73.6	36.8	47.1	76.9	38.0	45.9	76.8	38.3	46.4	77.6	38.2	46.8	78.2	38.5
Greece	Unemployment rates	23.3	5.1	1.6	31.2	7.7	3.0	31.0	7.7	3.2	29.7	9.0	3.2	..	..	..
	Labour force participation rates	39.4	72.2	41.5	36.9	75.3	41.9	35.5	75.5	42.1	40.0	76.8	40.4	..	..	..
	Employment/population ratios	30.3	68.5	40.8	25.4	69.5	40.7	24.5	69.7	40.7	28.1	69.9	39.1	..	..	..
Hungary	Unemployment rates	..	..	..	18.0	8.7	5.6	15.9	7.5	5.7	13.5	6.8	4.8	12.4	6.2	2.7
	Labour force participation rates	..	..	..	37.1	77.1	18.4	37.3	75.9	18.3	40.8	75.4	17.4	40.7	77.1	19.9
	Employment/population ratios	..	..	..	30.4	70.4	17.4	31.3	70.2	17.3	35.3	70.3	16.6	35.7	72.3	19.4
Iceland [a, b]	Unemployment rates	4.9	2.2	2.1	8.4	2.6	3.8	7.7	3.0	3.1	6.0	2.1	1.6	4.4	1.4	1.4
	Labour force participation rates	59.5	90.1	87.2	59.9	91.7	87.1	60.3	91.0	86.4	65.5	90.8	88.1	68.1	92.1	87.1
	Employment/population ratios	56.6	88.1	85.4	54.8	89.3	83.8	55.7	88.2	83.7	61.6	88.9	86.7	65.1	90.9	85.9

Table C. **Unemployment, labour force participation rates and employment/population ratios by age and sex** *(cont.)*

Both sexes

Percentages

		1990			1996			1997			1998			1999		
		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	17.6	12.4	8.4	18.2	11.0	6.8	16.1	9.5	6.0	11.5	7.3	5.1	8.5	5.3	4.2
	Labour force participation rates	50.4	68.7	42.2	43.9	74.5	43.2	45.5	74.4	42.6	48.6	76.4	43.8	50.7	77.3	45.7
	Employment/population ratios	41.5	60.2	38.6	35.9	66.3	40.3	38.1	67.3	40.1	43.0	70.9	41.6	46.4	73.2	43.8
Italy	Unemployment rates	28.9	6.6	1.8	34.1	9.3	4.3	33.6	9.6	4.4	33.8	9.8	4.7	32.9	9.5	4.9
	Labour force participation rates	46.8	72.8	32.5	38.5	72.2	28.5	38.0	72.4	28.6	38.4	73.4	29.0	38.1	73.9	28.9
	Employment/population ratios	33.3	68.0	32.0	25.4	65.5	27.3	25.2	65.5	27.3	25.4	66.2	27.7	25.5	66.9	27.5
Japan	Unemployment rates	4.3	1.6	2.7	6.7	2.7	4.1	6.6	2.8	3.9	7.7	3.4	5.0	9.3	4.0	5.4
	Labour force participation rates	44.1	80.9	64.7	48.3	81.8	66.3	48.6	82.2	66.9	48.3	82.1	67.1	47.2	81.9	67.1
	Employment/population ratios	42.2	79.6	62.9	45.0	79.6	63.6	45.3	79.9	64.2	44.6	79.2	63.8	42.9	78.7	63.4
Korea	Unemployment rates	7.0	1.9	0.8	6.1	1.6	0.6	7.7	2.1	1.1	16.0	6.3	4.0	14.2	5.8	4.5
	Labour force participation rates	35.0	74.6	62.4	35.3	76.1	63.7	34.4	76.6	64.4	31.3	75.0	61.5	31.3	74.7	60.9
	Employment/population ratios	32.5	73.2	61.9	33.2	74.8	63.3	31.7	75.0	63.7	26.3	70.3	59.0	26.8	70.4	58.1
Luxembourg	Unemployment rates	3.7	1.4	0.8	9.2	2.7	0.0	7.3	2.1	0.9	6.4	2.5	0.6	6.8	2.0	1.0
	Labour force participation rates	44.7	72.8	28.4	40.7	75.2	22.6	37.4	76.0	24.0	35.3	76.7	25.1	34.0	78.3	26.5
	Employment/population ratios	43.1	71.8	28.2	36.9	73.2	22.6	34.7	74.4	23.7	33.1	74.7	25.0	31.7	76.7	26.3
Mexico [b]	Unemployment rates	5.4	2.2	1.0	7.7	3.3	2.1	6.3	2.5	1.1	5.3	2.2	1.0	3.4	1.8	0.8
	Labour force participation rates	52.2	65.9	54.6	53.1	68.4	53.2	53.5	70.1	56.1	54.0	69.8	54.4	52.5	69.1	55.7
	Employment/population ratios	49.3	64.4	54.1	49.0	66.2	52.1	50.1	68.4	55.4	51.1	68.3	53.9	50.8	67.8	55.2
Netherlands	Unemployment rates	11.1	7.2	3.8	11.4	5.6	4.0	9.7	4.8	3.9	8.8	3.7	2.3	7.4	3.0	2.7
	Labour force participation rates	59.6	76.0	30.9	61.1	80.3	31.2	63.1	81.8	32.7	66.1	82.3	33.8	67.7	83.0	36.3
	Employment/population ratios	53.0	70.6	29.7	54.1	75.8	30.0	56.9	77.8	31.4	60.3	79.3	33.0	62.7	80.6	35.3
New Zealand	Unemployment rates	14.1	6.0	4.6	11.8	4.9	3.7	13.1	5.3	4.0	14.6	6.1	4.6	13.7	5.4	5.0
	Labour force participation rates	67.9	81.2	43.8	67.4	82.4	55.9	66.9	82.1	56.8	65.2	81.8	58.4	63.3	82.1	59.9
	Employment/population ratios	58.3	76.3	41.8	59.4	78.4	53.9	58.1	77.8	54.5	55.7	76.8	55.7	54.6	77.6	56.9
Norway [a]	Unemployment rates	11.8	4.2	2.1	12.4	3.9	2.2	10.6	3.0	1.9	9.1	2.4	1.8	9.6	2.4	1.1
	Labour force participation rates	60.5	85.9	63.1	59.7	87.1	66.0	61.6	87.7	67.3	63.8	87.9	68.4	63.9	87.6	68.0
	Employment/population ratios	53.4	82.3	61.8	52.3	83.7	64.6	55.1	85.0	66.0	57.9	85.8	67.2	57.8	85.5	67.3
Poland	Unemployment rates	..	..	..	28.5	10.8	5.9	24.7	10.0	5.3	23.2	9.5	5.9	..	..	..
	Labour force participation rates	..	..	..	39.0	83.6	35.0	38.3	82.9	35.5	37.3	82.9	34.3	..	..	..
	Employment/population ratios	..	..	..	27.9	74.6	33.0	28.8	74.7	33.6	28.6	75.0	32.3	..	..	..
Portugal	Unemployment rates	9.6	3.8	2.1	16.3	6.4	4.8	14.6	6.0	5.2	10.2	4.4	3.3	8.7	4.0	3.1
	Labour force participation rates	60.7	81.5	48.1	44.4	84.1	48.5	45.9	84.4	50.0	47.6	83.9	51.7	47.3	84.1	52.4
	Employment/population ratios	54.9	78.4	47.1	37.1	78.7	46.2	39.2	79.3	47.4	42.7	80.2	50.0	43.2	80.8	50.8
Spain [a]	Unemployment rates	30.1	13.1	8.1	39.8	19.2	11.6	37.1	18.1	11.3	34.1	16.5	10.3	28.5	13.9	9.9
	Labour force participation rates	54.9	70.3	40.0	46.7	74.7	37.3	46.6	75.3	37.8	46.4	75.6	38.8	47.4	76.2	38.7
	Employment/population ratios	38.3	61.1	36.8	28.1	60.3	33.0	29.3	61.6	33.5	30.6	63.1	34.8	33.9	65.6	34.9

Table C. **Unemployment, labour force participation rates and employment/population ratios by age and sex** *(cont.)*

Both sexes

Percentages

		1990			1996			1997			1998			1999		
		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 [a]	Unemployment rates	4.5	1.3	1.5	22.5	8.7	8.2	22.5	9.2	8.0	16.8	7.6	6.6	14.2	6.2	6.6
	Labour force participation rates	69.1	92.8	70.5	51.1	89.4	69.0	50.2	88.6	68.1	50.0	88.0	67.5	51.1	88.0	68.6
	Employment/population ratios	66.0	91.6	69.4	40.3	81.8	63.4	39.6	80.6	62.7	41.6	81.3	63.0	43.8	82.6	64.0
Switzerland [b]	Unemployment rates	3.2	1.6	1.2	4.7	3.7	3.3	6.0	4.1	2.9	5.8	3.3	3.4	5.6	2.6	2.6
	Labour force participation rates	71.6	85.9	72.0	66.4	86.8	73.1	67.0	86.9	72.8	67.2	87.8	73.8	68.6	87.5	73.6
	Employment/population ratios	69.3	84.5	71.1	63.3	83.6	70.7	62.9	83.4	70.7	63.3	84.9	71.3	64.7	85.2	71.7
Turkey	Unemployment rates	16.0	5.4	3.1	12.9	4.4	1.7	14.4	4.4	1.4	13.8	4.7	1.9	14.6	6.0	1.9
	Labour force participation rates	54.7	65.1	44.1	47.1	63.0	42.5	44.5	60.9	40.3	43.6	61.3	41.9	49.9	61.5	43.4
	Employment/population ratios	45.9	61.6	42.7	41.0	60.2	41.8	38.1	58.2	39.7	37.6	58.4	41.1	42.6	57.8	42.6
United Kingdom [a]	Unemployment rates	10.1	5.8	7.2	14.7	7.0	7.1	13.5	5.9	6.3	12.3	5.0	5.3	12.3	4.9	5.1
	Labour force participation rates	78.0	83.9	53.0	70.7	83.3	51.4	70.5	83.3	51.7	69.5	83.3	51.0	69.3	83.8	52.1
	Employment/population ratios	70.1	79.0	49.2	60.3	77.5	47.7	61.0	78.4	48.5	61.0	79.1	48.3	60.8	79.7	49.4
United States [a]	Unemployment rates	11.2	4.6	3.3	12.0	4.3	3.4	11.3	3.9	2.9	10.4	3.5	2.6	9.9	3.2	2.7
	Labour force participation rates	67.3	83.5	55.9	65.5	83.8	57.9	65.4	84.1	58.9	65.9	84.1	59.3	65.5	84.1	59.3
	Employment/population ratios	59.8	79.7	54.0	57.6	80.2	55.9	58.0	80.9	57.2	59.0	81.1	57.7	59.0	81.4	57.7
European Union [c]	Unemployment rates	15.8	6.8	6.5	21.0	9.4	9.2	20.5	9.3	9.5	18.7	8.7	8.9	17.2	8.1	8.6
	Labour force participation rates	54.8	78.8	41.0	47.2	81.1	40.3	46.7	81.3	40.8	47.2	81.7	40.7	47.8	82.2	41.4
	Employment/population ratios	46.2	73.4	38.3	37.3	73.5	36.5	37.2	73.8	36.9	38.4	74.5	37.1	39.5	75.5	37.8
OECD Europe [c]	Unemployment rates	15.5	6.6	5.9	19.4	8.8	8.0	19.0	8.6	8.2	17.6	8.2	7.8	16.3	7.7	7.5
	Labour force participation rates	55.1	77.4	41.9	46.7	79.5	40.2	45.9	79.4	40.5	46.0	79.7	40.5	48.4	79.8	41.7
	Employment/population ratios	46.6	72.3	39.4	37.6	72.6	37.0	37.1	72.6	37.2	37.9	73.1	37.3	40.5	73.7	38.6
Total OECD [c]	Unemployment rates	11.6	4.8	4.1	13.9	6.2	5.4	13.4	5.9	5.3	12.7	5.8	5.3	11.8	5.4	5.2
	Labour force participation rates	55.8	78.9	50.4	52.0	80.1	49.6	51.6	80.3	50.4	51.8	80.3	50.4	53.0	80.3	51.6
	Employment/population ratios	49.3	75.1	48.3	44.8	75.2	47.0	44.7	75.5	47.7	45.2	75.6	47.7	46.7	75.9	48.9

| Indicates break in series.

a) Age group 15 to 24 refers to 16 to 24.

b) The year 1990 refers to 1991.

c) For above countries only.

Source: OECD, *Labour Force Statistics, 1979-1999*, Part III, forthcoming. For Austria, Belgium, Denmark, Greece, Italy, Luxembourg and the Netherlands data are from the European Labour Force Survey.

Table C. Unemployment, labour force participation rates and employment/population ratios by age and sex

Men

Percentages

		1990			1996			1997			1998			1999		
		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	Unemployment rates	13.9	4.9	6.3	15.4	7.2	9.5	17.1	6.6	8.7	15.7	6.7	7.0	14.5	5.7	6.5
	Labour force participation rates	73.0	93.1	63.2	72.6	91.5	60.2	68.7	90.6	59.5	69.9	90.4	60.5	72.6	90.4	61
	Employment/population ratios	62.8	88.5	59.2	61.4	84.9	54.4	56.9	84.6	54.3	59.0	84.3	56.3	62	85.3	57
Austria	Unemployment rates	..	..	..	7.1	5.1	5.1	7.8	4.5	6.0	7.4	4.9	6.6	5.5	4.5	5.3
	Labour force participation rates	..	..	..	62.9	93.0	44.7	61.4	93.3	43.0	61.7	93.8	42.5	62.6	93.8	43.9
	Employment/population ratios	..	..	..	58.4	88.2	42.4	56.6	89.1	40.5	57.1	89.2	39.6	59.2	89.6	41.6
Belgium	Unemployment rates	10.1	4.0	3.1	17.3	6.6	4.7	17.6	6.2	4.8	18.3	6.6	5.3	22.7	6.1	4.5
	Labour force participation rates	37.0	92.2	35.4	35.6	92.4	33.8	34.7	92.1	33.9	35.7	91.7	33.9	35.5	91.8	36.8
	Employment/population ratios	33.3	88.5	34.3	29.4	86.3	32.2	28.5	86.4	32.2	29.2	85.7	32.1	27.5	86.2	35.1
Canada	Unemployment rates	13.6	7.2	6.2	16.9	8.9	8.0	17.1	8.0	7.6	16.6	7.2	7.0	15.3	6.5	6.3
	Labour force participation rates	72.2	93.1	64.3	64.0	90.8	58.4	63.5	90.9	59.6	63.5	91.0	58.8	65.3	91.1	60.7
	Employment/population ratios	62.3	86.4	60.3	53.2	82.8	53.7	52.7	83.6	55.1	52.9	84.4	54.7	55.4	85.1	56.9
Czech Republic	Unemployment rates	..	..	..	6.4	2.5	3.3	7.5	3.2	3.1	10.7	3.9	3.6	15.9	5.9	4.6
	Labour force participation rates	..	..	..	57.6	95.2	56.0	56.1	95.2	56.3	55.7	95.1	55.1	54.2	95.1	56.2
	Employment/population ratios	..	..	..	53.9	92.8	54.1	51.9	92.2	54.6	49.8	91.4	53.2	45.6	89.5	53.6
Denmark	Unemployment rates	11.4	7.5	5.2	9.0	4.7	6.0	6.6	4.1	4.4	6.7	3.2	4.2	9.5	3.7	3.2
	Labour force participation rates	76.5	94.5	69.2	76.6	92.8	62.1	77.7	92.5	63.8	71.5	91.9	61.1	76.7	92.7	61.9
	Employment/population ratios	67.8	87.4	65.6	69.7	88.5	58.4	72.5	88.7	61.0	66.7	88.9	58.5	69.5	89.3	59.9
Finland	Unemployment rates	10.4	2.5	1.8	29.5	11.8	20.3	25.5	10.4	15.0	23.2	9.0	14.0	21.0	7.9	10.9
	Labour force participation rates	58.1	92.9	47.1	42.9	90.3	47.2	45.6	89.5	44.5	46.5	90.2	44.5	49.7	90.5	45.4
	Employment/population ratios	52.1	90.6	46.3	30.2	79.7	37.6	33.9	80.2	37.8	35.7	82.1	38.3	39.3	83.4	40.1
France	Unemployment rates	15.3	5.9	6.0	22.1	9.3	8.6	24.6	9.7	8.6	21.9	9.3	8.3	24.2	9.0	8.7
	Labour force participation rates	39.6	95.4	45.8	32.4	95.2	42.3	31.4	94.8	42.0	30.9	94.5	41.3	32.1	94.1	42.6
	Employment/population ratios	33.6	89.8	43.0	25.3	86.3	38.6	23.7	85.6	38.4	24.2	85.8	37.9	24.3	85.7	38.9
Germany	Unemployment rates	5.3	4.7	9.9	9.6	7.4	12.8	10.7	8.2	14.1	9.7	7.8	13.7	9.1	7.3	12.8
	Labour force participation rates	62.0	91.2	57.7	56.2	93.1	55.0	55.3	93.4	55.7	55.7	93.6	55.2	55.7	93.9	55.1
	Employment/population ratios	58.7	86.9	52.0	50.8	86.2	48.0	49.4	85.8	47.9	50.3	86.3	47.6	50.7	87.0	48.0
Greece	Unemployment rates	15.1	3.2	1.8	21.5	4.8	2.9	22.2	4.9	3.3	21.4	5.7	2.9	..	..	..
	Labour force participation rates	44.1	94.3	59.5	40.1	94.9	61.0	38.7	94.6	61.0	43.5	94.4	57.5	..	..	..
	Employment/population ratios	37.4	91.3	58.4	31.5	90.3	59.2	30.1	89.9	59.0	34.2	89.0	55.8	..	..	..
Hungary	Unemployment rates	..	..	..	19.0	9.4	5.7	16.9	8.2	6.3	14.8	7.3	4.7	13.2	6.7	3.4
	Labour force participation rates	..	..	..	43.7	85.9	28.0	43.6	85.0	27.8	46.5	82.8	26.9	46.2	84.4	30.8
	Employment/population ratios	..	..	..	35.4	77.8	26.4	36.2	78.0	26.1	39.6	76.8	25.6	40.0	78.7	29.7
Iceland [a, b]	Unemployment rates	5.8	1.8	1.0	9.2	2.1	3.3	8.3	2.3	2.8	6.4	1.3	1.8	4.4	0.7	0.9
	Labour force participation rates	60.1	97.0	93.5	60.1	96.3	93.2	59.2	96.7	91.7	63.8	96.1	93.3	66.2	97.1	94.1
	Employment/population ratios	56.6	95.2	92.6	54.6	94.3	90.1	54.3	94.5	89.1	59.7	94.8	91.6	63.3	96.4	93.2

Table C. **Unemployment, labour force participation rates and employment/population ratios by age and sex** *(cont.)*

Men

Percentages

		1990			1996			1997			1998			1999		
		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	18.9	11.8	8.5	19.2	11.2	6.9	16.9	9.7	6.4	11.9	7.7	5.3	8.6	5.7	4.2
	Labour force participation rates	53.4	91.9	65.1	47.1	91.5	63.0	48.9	90.5	61.7	52.4	92.2	63.0	54.4	91.6	64.4
	Employment/population ratios	43.3	81.1	59.6	38.0	81.3	58.7	40.6	81.7	57.8	46.2	85.1	59.6	49.7	86.4	61.7
Italy	Unemployment rates	23.4	3.9	1.7	30.0	7.1	4.3	28.7	7.5	4.6	30.2	7.3	4.7	28.6	6.9	4.6
	Labour force participation rates	50.7	94.0	51.7	43.0	89.7	44.0	42.2	89.8	43.5	43.7	90.5	43.5	42.4	90.5	42.8
	Employment/population ratios	38.8	90.2	50.9	30.1	83.4	42.1	30.1	83.0	41.5	30.5	83.9	41.5	30.3	84.3	40.8
Japan	Unemployment rates	4.5	1.4	3.4	6.8	2.5	5.1	6.9	2.5	5.0	8.2	3.1	6.3	10.3	3.7	6.7
	Labour force participation rates	43.4	97.5	83.3	48.9	97.7	84.9	49.4	97.6	85.1	48.8	97.3	85.2	47.7	97.1	85.2
	Employment/population ratios	41.4	96.2	80.4	45.6	95.3	80.6	46.0	95.1	80.9	44.8	94.3	79.8	42.8	93.6	79.5
Korea	Unemployment rates	9.5	2.5	1.2	8.3	2.0	0.8	9.5	2.4	1.5	20.8	7.1	5.4	17.9	6.6	6.2
	Labour force participation rates	28.4	94.6	77.2	29.5	94.4	79.3	28.2	94.0	79.9	26.3	93.6	75.5	26.5	92.3	73.6
	Employment/population ratios	25.7	92.2	76.3	27.0	92.5	78.6	25.5	91.8	78.7	20.8	86.9	71.4	21.7	86.2	69.0
Luxembourg	Unemployment rates	2.7	1.1	1.1	10.1	1.8	0.0	5.6	1.5	0.8	5.8	1.7	0.0	6.2	1.4	0.7
	Labour force participation rates	45.7	95.1	43.2	42.8	93.8	35.6	39.4	93.4	35.8	37.2	94.4	35.1	36.0	94.2	35.6
	Employment/population ratios	44.5	94.0	42.7	38.5	92.1	35.6	37.2	92.0	35.5	35.1	92.8	35.1	33.7	92.9	35.4
Mexico [b]	Unemployment rates	5.2	1.5	1.0	7.1	3.2	2.6	5.4	2.0	0.9	4.7	1.9	1.1	2.7	1.6	1.1
	Labour force participation rates	71.2	96.8	85.9	71.8	96.5	80.2	71.7	96.9	83.7	71.8	96.7	83.3	69.8	96.4	82.5
	Employment/population ratios	67.5	95.4	85.1	66.7	93.4	78.2	67.8	95.0	82.9	68.4	94.8	82.4	67.9	94.8	81.7
Netherlands	Unemployment rates	10.3	5.0	2.8	11.3	4.3	3.5	9.2	3.6	3.2	8.3	2.6	1.8	6.6	2.1	2.1
	Labour force participation rates	60.0	93.4	45.8	61.3	92.7	42.2	64.3	93.5	44.4	67.3	93.5	47.0	67.4	93.4	49.8
	Employment/population ratios	53.8	88.8	44.5	54.4	88.7	40.7	58.4	90.1	43.0	61.7	91.0	46.2	62.9	91.5	48.8
New Zealand	Unemployment rates	14.9	6.6	4.9	12.4	4.8	4.3	13.2	5.3	4.7	15.6	6.0	4.9	14.6	5.5	5.5
	Labour force participation rates	71.4	93.4	56.8	70.8	91.9	69.0	69.6	92.0	69.3	67.9	91.4	70.6	66.9	91.1	71.6
	Employment/population ratios	60.7	87.2	54.0	62.0	87.5	66.0	60.4	87.2	66.0	57.3	85.9	67.1	57.2	86.0	67.7
Norway [a]	Unemployment rates	12.4	4.7	3.0	12.1	3.8	2.5	10.2	3.0	2.1	8.9	2.3	2.0	9.6	2.6	1.3
	Labour force participation rates	63.9	92.3	72.8	62.0	92.1	73.2	64.8	92.2	74.9	66.4	92.4	76.0	66.7	91.8	74.5
	Employment/population ratios	56.0	88.0	70.7	54.5	88.6	71.4	58.2	89.5	73.3	60.5	90.2	74.5	60.2	89.4	73.6
Poland	Unemployment rates	..	..	..	26.3	9.3	6.3	22.0	8.2	5.6	21.5	8.0	6.2	..	..	..
	Labour force participation rates	..	..	..	43.4	89.7	44.5	42.3	89.4	45.3	41.0	89.3	44.5	..	..	..
	Employment/population ratios	..	..	..	32.0	81.4	41.7	33.0	82.1	42.7	32.2	82.2	41.7	..	..	..
Portugal	Unemployment rates	7.1	2.2	2.2	13.8	5.6	5.5	11.3	5.4	6.4	8.0	3.4	3.5	7.0	3.4	3.9
	Labour force participation rates	66.5	94.3	66.5	48.8	92.9	62.0	49.8	92.6	62.1	50.7	93.2	65.7	51.2	93.0	64.6
	Employment/population ratios	61.8	92.1	65.0	42.0	87.7	58.6	44.1	87.6	58.1	46.7	90.0	63.4	47.6	89.8	62.1
Spain [a]	Unemployment rates	23.2	9.3	8.4	33.0	14.9	11.5	30.3	13.6	10.8	27.1	11.5	9.6	21.7	9.2	9.4
	Labour force participation rates	61.7	94.3	62.4	51.8	92.8	56.3	51.6	92.6	56.6	51.7	92.7	57.7	52.7	92.7	57.8
	Employment/population ratios	47.4	85.5	57.2	34.7	79.0	49.9	36.0	80.1	50.5	37.7	82.0	52.1	41.3	84.2	52.4

Table C. Unemployment, labour force participation rates and employment/population ratios by age and sex *(cont.)*

Men

Percentages

		1990			1996			1997			1998			1999		
		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 [a]	Unemployment rates	4.6	1.3	1.3	23.0	9.2	9.4	23.0	9.4	9.4	17.5	7.8	7.8	14.8	6.5	7.3
	Labour force participation rates	69.3	94.7	75.3	52.0	91.6	72.9	51.4	91.0	71.3	51.4	90.5	71.4	52.6	90.3	72.3
	Employment/population ratios	66.1	93.5	74.4	40.7	83.4	66.0	40.3	82.6	64.7	42.4	83.4	65.8	44.8	84.5	67.1
Switzerland [b]	Unemployment rates	3.0	0.8	1.4	5.2	3.2	3.1	8.0	4.0	3.1	4.7	2.8	4.1	5.6	2.2	2.5
	Labour force participation rates	72.9	97.8	86.4	68.3	97.3	81.7	69.0	97.0	81.9	70.6	97.0	81.7	67.9	97.2	80.9
	Employment/population ratios	70.7	97.0	85.2	64.7	94.2	79.1	63.5	93.2	79.3	67.3	94.3	78.4	64.1	95.1	78.9
Turkey	Unemployment rates	16.6	5.2	4.0	14.6	4.6	2.3	14.0	4.3	1.8	14.5	4.8	2.4	16.0	6.2	2.8
	Labour force participation rates	71.8	94.2	61.3	60.9	92.6	57.4	59.4	92.1	56.5	57.8	92.2	58.2	58.5	91.2	57.4
	Employment/population ratios	59.9	89.3	58.8	52.0	88.3	56.1	51.1	88.1	55.4	49.5	87.8	56.8	49.1	85.6	55.8
United Kingdom [a]	Unemployment rates	11.1	5.6	8.4	17.8	8.0	9.5	15.6	6.7	7.8	13.8	5.5	6.8	14.1	5.4	6.4
	Labour force participation rates	83.5	94.8	68.1	75.3	91.9	62.9	74.6	91.6	63.6	73.4	91.4	62.6	73.3	91.6	63.5
	Employment/population ratios	74.2	89.5	62.4	61.9	84.6	57.0	63.0	85.4	58.6	63.3	86.4	58.3	63.0	86.7	59.4
United States [a]	Unemployment rates	11.6	4.6	3.8	12.6	4.2	3.3	11.8	3.7	3.1	11.1	3.3	2.8	10.3	3.0	2.7
	Labour force participation rates	71.8	93.4	67.8	68.8	91.8	67.0	68.2	91.8	67.6	68.4	91.8	68.1	68.0	91.7	67.9
	Employment/population ratios	63.5	89.1	65.2	60.1	87.9	64.7	60.1	88.4	65.5	60.8	88.8	66.2	61.0	89.0	66.1
European Union [c]	Unemployment rates	13.6	5.3	6.2	19.6	8.2	9.2	18.8	8.1	9.3	17.6	7.4	8.6	16.1	6.9	8.4
	Labour force participation rates	58.7	93.7	56.6	51.2	92.6	52.4	50.7	92.5	52.6	51.2	92.6	52.4	51.8	92.6	52.7
	Employment/population ratios	50.7	88.8	53.1	41.1	85.0	47.5	41.2	85.0	47.7	42.3	85.8	47.9	43.4	86.3	48.3
OECD Europe [c]	Unemployment rates	13.9	5.2	5.8	18.4	7.7	8.1	17.5	7.5	8.0	16.5	6.9	7.6	15.8	6.6	7.4
	Labour force participation rates	61.0	93.9	57.7	52.4	92.4	52.4	51.7	92.2	52.7	51.8	92.2	52.6	53.3	92.4	53.4
	Employment/population ratios	52.5	89.0	54.3	42.7	85.3	48.2	42.6	85.3	48.5	43.2	85.8	48.6	44.9	86.3	49.5
Total OECD [c]	Unemployment rates	11.1	4.2	4.4	13.7	5.6	5.8	12.9	5.3	5.6	12.5	5.2	5.7	11.7	4.9	5.6
	Labour force participation rates	61.3	94.4	66.4	57.5	93.1	63.0	57.0	93.1	63.6	57.2	93.0	63.6	57.8	93.0	64.5
	Employment/population ratios	54.5	90.5	63.5	49.6	87.9	59.4	49.6	88.2	60.1	50.1	88.2	59.9	51.1	88.5	60.8

| Indicates break in series.

a) Age group 15 to 24 refers to 16 to 24.

b) The year 1990 refers to 1991.

c) For above countries only.

Source: OECD, *Labour Force Statistics, 1979-1999*, Part III, forthcoming. For Austria, Belgium, Denmark, Greece, Italy, Luxembourg and the Netherlands data are from the European Labour Force Survey.

Table C. Unemployment, labour force participation rates and employment/population ratios by age and sex
Women

Percentages

		1990			1996			1997			1998			1999		
		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	Unemployment rates	12.4	5.5	3.0	14.1	6.4	4.2	14.5	6.5	4.2	13.2	5.7	4.4	13.2	5.6	3.9
	Labour force participation rates	67.7	66.6	24.9	67.4	68.9	31.2	64.7	68.7	30.6	65.1	69.6	32.4	68.6	69.5	32.6
	Employment/population ratios	59.3	63.0	24.2	57.9	64.5	29.9	55.4	64.2	29.3	56.5	65.6	31.0	59.6	65.6	31.3
Austria	Unemployment rates	..	..	..	6.5	5.1	3.5	7.3	5.0	3.3	7.6	5.2	5.7	6.4	4.6	3.4
	Labour force participation rates	..	..	..	56.4	73.9	17.9	55.4	74.4	17.9	55.5	75.5	18.1	54.2	76.3	18.3
	Employment/population ratios	..	..	..	52.7	70.1	17.3	51.4	70.7	17.3	51.3	71.6	17.1	50.7	72.8	17.6
Belgium	Unemployment rates	19.2	10.3	4.9	24.4	11.3	4.0	25.7	10.2	4.3	23.0	10.7	5.4	22.4	9.0	8.1
	Labour force participation rates	34.1	60.8	9.9	29.9	69.0	12.5	29.3	69.7	13.0	29.4	70.5	14.2	30.1	72.9	16.1
	Employment/population ratios	27.5	54.5	9.4	22.6	61.2	12.0	21.8	62.6	12.4	22.6	62.9	13.4	23.4	66.4	14.8
Canada	Unemployment rates	11.0	7.6	5.7	13.6	8.5	7.6	15.2	7.6	7.6	13.6	6.9	6.7	12.6	6.3	5.3
	Labour force participation rates	67.3	75.4	34.9	60.5	76.0	36.4	59.3	76.9	37.1	60.2	77.6	38.7	61.7	78.2	39.4
	Employment/population ratios	59.9	69.7	33.0	52.2	69.6	33.6	50.3	71.0	34.3	52.1	72.2	36.1	53.9	73.2	37.3
Czech Republic	Unemployment rates	..	..	..	8.3	4.0	4.2	10.3	5.3	4.5	14.8	7.3	4.4	18.5	9.5	5.1
	Labour force participation rates	..	..	..	40.7	82.1	23.4	40.2	82.1	24.9	42.1	81.9	23.9	42.1	82.0	24.4
	Employment/population ratios	..	..	..	37.3	78.8	22.5	36.1	77.7	23.8	35.8	76.0	22.9	34.3	74.2	23.2
Denmark	Unemployment rates	11.6	8.4	7.5	12.4	7.6	6.3	9.9	5.7	6.0	7.6	6.1	6.4	10.5	4.9	5.6
	Labour force participation rates	70.4	87.7	45.8	70.8	82.1	39.5	70.4	81.7	43.9	71.6	82.9	44.3	70.1	83.5	50.6
	Employment/population ratios	62.2	80.3	42.4	62.0	75.8	37.0	63.4	77.0	41.2	66.1	77.8	41.5	62.8	79.4	47.8
Finland	Unemployment rates	8.3	1.6	2.8	26.0	12.7	21.7	25.0	11.1	15.0	24.5	10.1	13.9	22.2	9.0	9.4
	Labour force participation rates	56.9	86.5	40.8	39.7	84.7	43.1	43.6	84.0	39.6	45.1	84.0	39.7	49.1	84.8	42.4
	Employment/population ratios	52.2	85.1	39.7	29.4	73.9	33.7	32.7	74.6	33.7	34.1	75.6	34.2	38.2	77.1	38.4
France	Unemployment rates	23.9	10.7	7.6	31.9	13.0	8.2	32.8	12.9	8.5	30.0	12.7	9.3	29.7	12.6	8.7
	Labour force participation rates	33.1	72.9	31.1	25.9	77.8	31.3	24.5	77.3	31.6	25.0	77.9	31.2	24.6	78.4	32.5
	Employment/population ratios	25.2	65.1	28.8	17.7	67.6	28.8	16.5	67.3	28.9	17.5	68.0	28.3	17.3	68.5	29.6
Germany	Unemployment rates	6.0	7.1	15.2	9.0	8.9	15.8	9.6	9.8	17.2	8.3	9.2	16.5	7.7	8.7	15.5
	Labour force participation rates	57.4	64.1	26.4	47.4	73.9	33.5	46.6	74.9	34.8	46.2	75.6	34.4	46.3	75.7	34.3
	Employment/population ratios	54.0	59.6	22.4	43.1	67.3	28.2	42.2	67.5	28.8	42.4	68.6	28.7	42.8	69.2	28.9
Greece	Unemployment rates	32.6	8.6	1.2	41.3	12.3	3.0	40.6	11.9	3.1	39.3	13.9	3.7	..	..	..
	Labour force participation rates	35.3	51.5	24.3	34.1	56.9	24.5	32.6	57.5	25.1	36.6	59.9	24.5	..	..	..
	Employment/population ratios	23.8	47.1	24.0	20.0	49.9	23.8	19.4	50.7	24.4	22.2	51.6	23.6	..	..	..
Hungary	Unemployment rates	..	..	..	16.4	7.8	5.3	14.5	6.7	4.4	11.6	6.1	5.1	11.3	5.6	1.3
	Labour force participation rates	..	..	..	30.2	68.5	10.8	30.6	67.2	10.8	34.9	68.2	10.0	35.0	70.0	11.4
	Employment/population ratios	..	..	..	25.2	63.2	10.2	26.2	62.7	10.3	30.9	64.0	9.5	31.1	66.1	11.3
Iceland [a, b]	Unemployment rates	3.9	2.6	3.4	7.6	3.2	4.4	7.1	3.9	3.5	5.6	2.9	1.4	4.4	2.1	1.9
	Labour force participation rates	58.8	83.0	81.1	59.6	86.9	81.3	61.5	85.1	81.2	67.3	85.4	83.0	70.1	87.0	80.3
	Employment/population ratios	56.5	80.8	78.3	55.1	84.1	77.7	57.2	81.8	78.4	63.5	82.9	81.9	67.0	85.1	78.8

Table C. **Unemployment, labour force participation rates and employment/population ratios by age and sex** *(cont.)*

Women

Percentages

		1990			1996			1997			1998			1999		
		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	16.1	13.5	8.3	17.0	10.7	6.7	15.2	9.3	4.9	11.1	6.7	4.6	8.3	4.8	4.3
	Labour force participation rates	47.3	45.5	19.9	40.6	57.5	23.4	41.9	58.4	23.3	44.6	60.8	24.6	46.8	63.1	26.9
	Employment/population ratios	39.6	39.3	18.2	33.7	51.4	21.8	35.6	53.0	22.2	39.7	56.8	23.5	42.9	60.0	25.7
Italy	Unemployment rates	35.4	11.3	2.0	39.2	12.9	4.3	39.9	13.1	3.8	38.4	13.9	4.7	38.3	13.6	5.6
	Labour force participation rates	43.0	52.1	15.0	33.9	54.8	14.4	33.8	55.1	15.0	33.1	56.2	15.5	33.8	57.3	15.9
	Employment/population ratios	27.8	46.2	14.7	20.6	47.7	13.8	20.3	47.9	14.4	20.4	48.4	14.8	20.8	49.5	15.0
Japan	Unemployment rates	4.1	2.1	1.4	6.7	3.2	2.3	6.3	3.2	2.2	7.3	3.8	2.9	8.2	4.4	3.3
	Labour force participation rates	44.8	64.2	47.2	47.6	65.8	48.8	47.7	66.7	49.5	47.8	66.6	49.9	46.7	66.4	49.8
	Employment/population ratios	43.0	62.9	46.5	44.4	63.7	47.6	44.7	64.6	48.4	44.3	64.0	48.5	42.9	63.6	48.2
Korea	Unemployment rates	5.5	0.9	0.3	4.8	1.0	0.3	6.6	1.7	0.5	12.9	4.9	1.9	11.9	4.4	2.1
	Labour force participation rates	40.7	54.2	49.6	40.4	56.9	49.7	39.7	58.5	50.5	35.7	56.0	48.2	35.4	56.6	48.9
	Employment/population ratios	38.5	53.7	49.4	38.4	56.4	49.6	37.1	57.5	50.2	31.1	53.2	47.2	31.2	54.1	47.8
Luxembourg	Unemployment rates	4.7	2.2	0.0	8.3	4.2	0.0	9.2	2.9	1.2	7.1	3.9	1.9	7.4	2.9	1.5
	Labour force participation rates	44.0	49.7	13.8	38.5	55.9	10.2	35.3	58.0	12.6	33.4	58.4	15.6	31.9	62.0	17.7
	Employment/population ratios	42.0	48.6	13.8	35.3	53.6	10.2	32.1	56.3	12.5	31.0	56.2	15.3	29.5	60.2	17.5
Mexico [b]	Unemployment rates	5.8	3.8	1.0	8.8	3.5	1.0	7.8	3.5	1.8	6.4	2.7	0.5	4.5	2.1	0.2
	Labour force participation rates	34.5	38.2	24.4	35.2	43.4	27.8	36.5	46.3	30.2	37.1	45.8	28.3	36.1	44.8	29.5
	Employment/population ratios	32.5	36.8	24.2	32.1	41.9	27.5	33.6	44.7	29.6	34.7	44.6	28.1	34.5	43.9	29.4
Netherlands	Unemployment rates	11.9	10.9	6.3	11.6	7.5	5.1	10.3	6.5	5.5	9.3	5.1	3.5	8.2	4.1	3.9
	Labour force participation rates	59.2	57.9	16.9	60.9	67.5	20.5	61.8	69.6	21.0	64.9	70.7	20.5	68.0	72.4	22.8
	Employment/population ratios	52.2	51.6	15.8	53.9	62.5	19.4	55.4	65.1	19.8	58.9	67.1	19.8	62.5	69.4	21.9
New Zealand	Unemployment rates	13.2	5.4	4.0	11.2	5.0	2.7	13.0	5.3	3.0	13.5	6.2	4.1	12.8	5.3	4.2
	Labour force participation rates	64.3	69.3	30.7	64.1	73.3	43.0	64.1	72.6	44.4	62.4	72.5	46.3	59.6	73.5	48.4
	Employment/population ratios	55.8	65.6	29.5	56.9	69.6	41.8	55.8	68.7	43.1	54.0	68.1	44.4	52.0	69.6	46.3
Norway [a]	Unemployment rates	11.0	3.9	1.9	12.7	3.9	1.8	11.1	3.1	1.7	9.4	2.4	1.6	9.5	2.2	0.8
	Labour force participation rates	56.9	79.2	53.9	57.3	81.7	59.2	58.3	82.9	60.0	61.1	83.2	61.0	61.0	83.2	61.5
	Employment/population ratios	50.7	76.1	52.8	50.0	78.5	58.1	51.8	80.3	59.0	55.3	81.2	60.0	55.2	81.4	61.1
Poland	Unemployment rates	..	..	..	31.2	12.5	5.2	28.0	12.0	4.9	25.2	11.2	5.5	..	..	..
	Labour force participation rates	..	..	..	34.6	77.5	26.9	34.3	76.5	27.1	33.7	76.5	25.7	..	..	..
	Employment/population ratios	..	..	..	23.8	67.8	25.5	24.7	67.3	25.7	25.2	67.9	24.3	..	..	..
Portugal	Unemployment rates	12.8	5.8	1.8	19.3	7.3	3.7	18.5	6.7	3.4	12.8	5.7	2.9	10.8	4.6	2.0
	Labour force participation rates	54.4	69.4	32.3	39.8	75.7	36.8	41.9	76.5	38.8	44.5	75.0	39.6	43.4	75.7	41.9
	Employment/population ratios	47.5	65.4	31.7	32.1	70.1	35.4	34.2	71.4	37.4	38.8	70.7	38.4	38.7	72.1	41.1
Spain [a]	Unemployment rates	39.7	20.6	7.2	48.8	26.3	12.1	46.1	25.4	12.7	43.4	24.1	12.1	37.3	21.0	11.2
	Labour force participation rates	47.5	46.9	19.5	41.4	56.8	20.2	41.2	58.1	20.6	40.9	58.9	21.4	41.8	60.2	21.5
	Employment/population ratios	28.7	37.2	18.1	21.2	41.9	17.8	22.2	43.4	18.0	23.2	44.8	18.8	26.2	47.6	19.1

Table C. **Unemployment, labour force participation rates and employment/population ratios by age and sex** *(cont.)*

Women

Percentages

		1990			1996			1997			1998			1999		
		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 [a]	Unemployment rates	4.5	1.2	1.6	22.0	8.3	6.9	21.9	8.9	6.5	16.1	7.3	5.2	13.6	5.9	5.9
	Labour force participation rates	68.9	90.8	65.8	50.2	87.1	65.2	48.9	86.2	64.9	48.5	85.4	63.6	49.5	85.7	64.9
	Employment/population ratios	65.9	89.7	64.7	39.9	80.1	60.7	38.9	78.6	60.7	40.7	79.1	60.3	42.8	80.6	61.0
Switzerland [b]	Unemployment rates	3.4	2.6	0.7	4.1	4.3	3.6	3.8	4.2	2.6	7.0	4.0	2.3	5.7	3.2	2.8
	Labour force participation rates	70.3	73.7	53.4	64.5	76.1	61.8	64.8	76.7	60.8	63.7	78.6	63.7	69.3	77.6	64.0
	Employment/population ratios	67.9	71.8	53.0	61.9	72.8	59.6	62.3	73.5	59.2	59.3	75.5	62.3	65.4	75.1	62.2
Turkey	Unemployment rates	15.0	5.9	1.0	10.4	3.7	0.3	15.0	4.8	0.5	12.7	4.5	0.7	12.3	5.3	0.0
	Labour force participation rates	39.4	36.0	26.6	34.7	32.8	27.9	31.2	29.5	24.3	30.6	30.5	25.5	40.4	32.9	29.2
	Employment/population ratios	33.5	33.9	26.4	31.1	31.6	27.8	26.5	28.1	24.2	26.7	29.1	25.4	35.4	31.1	29.2
United Kingdom [a]	Unemployment rates	9.0	5.9	5.0	11.1	5.6	3.4	11.0	4.9	3.9	10.5	4.5	3.1	10.2	4.3	3.2
	Labour force participation rates	72.4	72.9	38.7	65.8	74.5	40.2	66.1	75.0	40.3	65.4	75.1	39.8	65.1	75.8	41.1
	Employment/population ratios	65.9	68.6	36.7	58.6	70.3	38.8	58.8	71.3	38.7	58.5	71.7	38.5	58.5	72.6	39.8
United States [a]	Unemployment rates	10.7	4.6	2.8	11.3	4.4	3.4	10.7	4.1	2.7	9.8	3.8	2.4	9.5	3.4	2.6
	Labour force participation rates	62.9	74.0	45.2	62.2	76.1	49.6	62.6	76.7	50.9	63.3	76.5	51.2	62.9	76.8	51.5
	Employment/population ratios	56.1	70.6	44.0	55.2	72.8	47.9	55.9	73.5	49.5	57.2	73.6	50.0	57.0	74.1	50.1
European Union [c]	Unemployment rates	18.3	9.2	6.9	22.8	10.9	9.2	22.5	10.8	9.7	20.5	10.5	9.4	18.6	9.8	9.0
	Labour force participation rates	50.8	63.8	26.5	43.1	69.5	28.8	42.7	70.1	29.5	43.1	70.7	29.5	43.6	71.7	30.5
	Employment/population ratios	41.5	57.9	24.7	33.2	61.9	26.2	33.0	62.5	26.6	34.3	63.2	26.7	35.5	64.7	27.8
OECD Europe [c]	Unemployment rates	17.5	8.7	6.2	20.6	10.3	7.9	21.0	10.2	8.4	19.0	9.9	8.2	17.0	9.2	7.7
	Labour force participation rates	49.2	60.9	27.1	41.0	66.6	28.6	40.0	66.5	29.0	40.2	67.0	29.0	43.3	67.2	30.4
	Employment/population ratios	40.6	55.6	25.4	32.5	59.8	26.5	31.6	59.7	26.5	32.6	60.4	26.6	35.9	61.1	28.1
Total OECD [c]	Unemployment rates	12.1	5.8	3.6	14.1	6.9	4.8	14.0	6.8	4.8	13.1	6.7	4.7	11.9	6.1	4.6
	Labour force participation rates	50.3	63.6	35.5	46.5	67.2	37.1	46.2	67.7	37.9	46.5	67.7	38.1	48.0	67.8	39.4
	Employment/population ratios	44.2	59.9	34.2	39.9	62.5	35.3	39.8	63.1	36.1	40.4	63.1	36.3	42.3	63.6	37.6

| Indicates break in series.

a) Age group 15 to 24 refers to 16 to 24.

b) The year 1990 refers to 1991.

c) For above countries only.

Source: OECD, *Labour Force Statistics, 1979-1999*, Part III, forthcoming. For Austria, Belgium, Denmark, Greece, Italy, Luxembourg and the Netherlands data are from the European Labour Force Survey.

Table D. Unemployment, labour force participation rates and employment/population ratios by educational attainment for persons aged 25-64, 1998

Percentages

		Both sexes			Men			Women		
		Less than upper secondary education	Upper secondary education	Tertiary education	Less than upper secondary education	Upper secondary education	Tertiary education	Less than upper secondary education	Upper secondary education	Tertiary education
Australia	Unemployment rates	9.0	5.8	3.3	10.4	5.8	3.1	7.5	5.9	3.6
	Labour force participation rates	65.3	80.5	86.6	80.5	88.9	93.6	54.5	66.1	80.3
	Employment/population ratios	59.5	75.9	83.8	72.1	83.8	90.7	50.5	62.1	77.3
Austria [a]	Unemployment rates	6.7	3.4	2.5	7.0	3.3	2.3	6.5	3.6	2.9
	Labour force participation rates	56.8	78.1	88.0	71.8	86.0	91.9	47.8	68.4	83.1
	Employment/population ratios	52.9	75.4	85.8	66.7	83.2	89.8	44.7	65.9	80.7
Belgium	Unemployment rates	13.1	7.4	3.2	10.5	5.0	2.6	17.6	10.9	3.8
	Labour force participation rates	54.6	77.8	87.1	69.8	86.9	92.0	39.6	68.0	82.4
	Employment/population ratios	47.5	72.0	84.3	62.5	82.5	89.6	32.6	60.6	79.2
Canada	Unemployment rates	12.2	7.8	5.2	11.9	7.8	5.4	12.3	8.2	5.6
	Labour force participation rates	62.7	80.6	87.0	73.8	88.4	92.5	47.4	72.6	82.9
	Employment/population ratios	55.1	74.4	82.5	65.0	81.5	87.5	41.6	66.7	78.3
Czech Republic	Unemployment rates	14.5	4.6	1.9	15.4	3.2	1.7	14.0	6.4	2.3
	Labour force participation rates	57.9	81.9	90.4	72.3	88.9	95.0	51.3	74.4	83.8
	Employment/population ratios	49.5	78.2	88.7	61.2	86.1	93.4	44.1	69.7	81.9
Denmark	Unemployment rates	7.0	4.6	3.3	4.2	3.3	2.9	10.1	6.3	3.6
	Labour force participation rates	65.4	82.9	90.4	77.0	86.1	92.9	56.0	79.1	88.1
	Employment/population ratios	60.9	79.1	87.5	73.8	83.2	90.2	50.3	74.2	84.9
Finland [a]	Unemployment rates	15.6	11.9	6.5	14.5	11.7	5.9	17.0	12.2	7.1
	Labour force participation rates	64.8	82.0	88.3	68.9	85.6	90.3	60.4	78.0	86.7
	Employment/population ratios	54.7	72.2	82.6	58.9	75.5	85.0	50.1	68.5	80.6
France	Unemployment rates	14.9	9.5	6.6	13.5	7.6	5.8	16.5	12.1	7.4
	Labour force participation rates	66.2	82.9	87.3	76.9	89.1	91.7	57.1	75.8	83.2
	Employment/population ratios	56.3	75.0	81.6	66.5	82.3	86.3	47.7	66.6	77.1
Germany	Unemployment rates	16.6	10.8	5.6	18.1	10.0	4.9	15.1	11.6	6.5
	Labour force participation rates	55.3	75.4	87.0	74.5	82.9	90.1	44.5	67.6	81.7
	Employment/population ratios	46.1	67.3	82.2	61.1	74.6	85.7	37.8	59.8	76.4
Greece [a]	Unemployment rates	6.5	9.6	7.3	4.5	5.9	5.2	10.2	15.0	10.2
	Labour force participation rates	61.3	70.0	86.5	84.6	89.0	90.2	40.7	53.6	81.9
	Employment/population ratios	57.4	63.3	80.2	80.8	83.8	85.6	36.5	45.5	73.5
Hungary	Unemployment rates	11.4	6.2	1.7	12.9	6.5	2.0	9.9	5.8	1.5
	Labour force participation rates	40.8	75.5	82.4	49.1	82.6	86.9	35.0	67.4	78.3
	Employment/population ratios	36.2	70.9	81.0	42.7	77.3	85.2	31.5	63.5	77.2
Iceland	Unemployment rates	3.4	1.6	0.8	2.7	1.0	0.8	3.9	2.3	0.9
	Labour force participation rates	87.7	87.8	95.5	93.5	94.3	98.9	83.9	81.3	92.5
	Employment/population ratios	84.7	86.4	94.7	91.0	93.3	98.1	80.6	79.4	91.6

Table D. **Unemployment, labour force participation rates and employment/population ratios by educational attainment for persons aged 25-64, 1998** *(cont.)*

Percentages

		Both sexes			Men			Women		
		Less than upper secondary education	Upper secondary education	Tertiary education	Less than upper secondary education	Upper secondary education	Tertiary education	Less than upper secondary education	Upper secondary education	Tertiary education
Ireland	Unemployment rates	11.6	4.5	3.0	11.7	4.2	2.7	11.4	4.8	3.4
	Labour force participation rates	60.4	75.1	87.9	80.7	91.9	94.1	37.6	62.7	80.6
	Employment/population ratios	53.4	71.7	85.2	71.3	88.0	91.6	33.3	59.7	77.9
Italy	Unemployment rates	10.8	8.7	7.0	8.2	6.5	4.8	16.4	11.8	9.5
	Labour force participation rates	52.8	74.4	86.6	74.4	85.4	91.1	32.8	62.7	81.3
	Employment/population ratios	47.0	67.9	80.6	68.3	79.9	86.7	27.4	55.4	73.5
Japan	Unemployment rates	4.4	3.3	2.7	5.2	3.4	2.2	3.0	3.1	3.5
	Labour force participation rates	72.0	78.4	82.3	87.3	96.1	97.9	56.7	62.8	63.6
	Employment/population ratios	68.8	75.8	80.1	82.8	92.8	95.8	55.0	60.8	61.3
Korea	Unemployment rates	5.9	6.7	4.8	8.2	7.4	5.1	4.0	5.4	3.8
	Labour force participation rates	70.2	71.3	80.0	86.6	91.4	93.6	60.2	48.7	55.2
	Employment/population ratios	66.1	66.5	76.2	79.5	84.6	88.8	57.8	46.1	53.1
Mexico	Unemployment rates	5.4	1.4	2.3	4.6	2.6	1.6	7.2	0.8	3.9
	Labour force participation rates	67.4	65.0	85.9	97.7	96.8	94.5	40.1	54.9	73.0
	Employment/population ratios	63.7	64.1	83.9	93.2	94.3	93.0	37.2	54.4	70.2
Netherlands	Unemployment rates	6.2	3.2	2.3	4.6	2.1	1.9	7.7	4.2	2.7
	Labour force participation rates	58.3	78.5	85.6	74.7	86.4	89.7	40.8	69.0	79.6
	Employment/population ratios	55.7	76.7	85.4	74.0	85.8	89.7	40.5	66.8	79.6
New Zealand	Unemployment rates	10.4	4.6	4.3	10.8	4.4	4.5	9.9	5.1	4.2
	Labour force participation rates	65.3	83.0	83.9	79.4	91.0	91.3	53.7	73.3	78.0
	Employment/population ratios	58.5	79.1	80.3	70.8	87.1	87.2	48.4	69.6	74.8
Norway[a]	Unemployment rates	4.0	3.1	1.7	4.2	2.9	1.8	3.8	3.4	1.6
	Labour force participation rates	69.5	86.0	91.7	78.7	90.8	93.7	60.8	81.0	89.8
	Employment/population ratios	66.7	83.3	90.2	75.4	88.2	92.0	58.5	78.2	88.3
Poland	Unemployment rates	13.9	9.2	2.5	12.7	7.2	2.2	15.1	11.9	2.8
	Labour force participation rates	57.0	77.9	89.4	68.5	84.7	92.1	47.8	70.4	87.1
	Employment/population ratios	49.1	70.7	87.2	59.8	78.6	90.1	40.6	62.0	84.7
Portugal	Unemployment rates	4.3	4.3	2.6	3.3	3.3	1.9	5.7	5.4	3.1
	Labour force participation rates	79.6	83.3	91.6	89.7	87.0	94.6	68.7	79.6	89.6
	Employment/population ratios	76.1	79.7	89.2	86.8	84.1	92.8	64.7	75.3	86.8
Spain	Unemployment rates	17.0	15.3	13.1	12.6	10.0	8.5	25.6	22.8	18.5
	Labour force participation rates	59.6	79.8	88.1	82.1	90.9	92.6	39.1	68.0	83.2
	Employment/population ratios	49.5	67.6	76.6	71.8	81.8	84.7	29.1	52.5	67.8
Sweden	Unemployment rates	10.4	7.2	3.6	9.8	7.7	4.2	11.1	6.6	3.0
	Labour force participation rates	74.1	86.3	92.3	79.7	88.7	93.1	67.3	84.0	91.6
	Employment/population ratios	66.4	80.1	89.0	71.9	81.8	89.2	59.9	78.4	88.8

Table D. **Unemployment, labour force participation rates and employment/population ratios by educational attainment for persons aged 25-64, 1998** *(cont.)*

Percentages

		Both sexes			Men			Women		
		Less than upper secondary education	Upper secondary education	Tertiary education	Less than upper secondary education	Upper secondary education	Tertiary education	Less than upper secondary education	Upper secondary education	Tertiary education
Switzerland	Unemployment rates	5.6	2.8	2.8	6.2	2.9	2.0	5.3	2.7	5.2
	Labour force participation rates	73.2	83.5	92.9	89.7	93.9	96.2	64.8	74.5	84.6
	Employment/population ratios	69.1	81.2	90.3	84.2	91.2	94.3	61.4	72.5	80.2
Turkey	Unemployment rates	4.0	6.2	4.3	4.6	4.6	3.7	2.5	13.6	5.7
	Labour force participation rates	54.8	69.8	84.4	86.2	90.2	88.7	27.2	34.1	75.8
	Employment/population ratios	52.6	65.5	80.8	82.3	86.0	85.4	26.5	29.4	71.5
United Kingdom	Unemployment rates	10.5	5.0	2.6	13.7	5.3	2.7	7.3	4.5	2.5
	Labour force participation rates	59.2	82.7	89.6	68.5	88.1	92.3	51.9	76.1	86.3
	Employment/population ratios	52.9	78.6	87.3	59.1	83.5	89.9	48.1	72.7	84.1
United States	Unemployment rates	8.5	4.4	2.1	8.0	4.6	2.0	9.3	4.2	2.1
	Labour force participation rates	63.0	79.8	87.7	75.3	87.7	93.1	49.8	72.5	82.4
	Employment/population ratios	57.6	76.3	85.9	69.3	83.7	91.2	45.2	69.5	80.6
European Union [b]	Unemployment rates	10.6	9.1	6.0	8.8	7.4	4.7	13.5	11.4	7.5
	Labour force participation rates	58.2	77.2	87.3	79.4	85.7	90.9	39.8	67.8	82.7
	Employment/population ratios	52.0	70.1	82.1	72.5	79.3	86.6	34.4	60.1	76.5
OECD Europe [b]	Unemployment rates	10.0	8.5	5.7	8.4	7.0	4.5	12.2	10.5	7.2
	Labour force participation rates	61.5	77.7	87.5	82.6	86.0	91.1	43.6	68.5	82.8
	Employment/population ratios	55.4	71.0	82.5	75.6	80.0	87.1	38.2	61.3	76.8
Total OECD [b]	Unemployment rates	8.3	6.1	3.5	7.4	5.6	3.1	9.6	6.6	4.1
	Labour force participation rates	64.1	78.1	86.3	84.7	88.5	93.4	45.9	67.8	78.2
	Employment/population ratios	58.7	73.4	83.2	78.4	83.5	90.5	41.5	63.3	75.0

a) Data are for the year 1997.
b) For above countries only.
Source: OECD (2000), *Education at a Glance - OECD Indicators 2000.*

Table E. **Incidence and composition of part-time employment,** [a] **1990-99**

Percentages

	Part-time employment as a proportion of employment									
	Men					Women				
	1990	1996	1997	1998	1999	1990	1996	1997	1998	1999
Australia [b, c]	11.3	14.0	14.6	14.4	14.3	38.5	40.0	41.0	40.7	41.4
Austria	..	2.6	2.6	2.7	2.8	..	21.7	21.3	22.8	24.4
Belgium	4.6	4.8	4.8	4.9	7.3	29.8	32.1	32.3	32.2	36.6
Canada	9.1	10.7	10.5	10.6	10.3	26.8	28.9	29.4	28.8	28.0
Czech Republic	..	2.0	1.9	1.7	1.7	..	5.3	5.5	5.4	5.6
Denmark	10.2	10.2	11.1	9.8	8.9	29.6	24.2	24.2	25.4	22.7
Finland [b]	4.7	5.7	6.5	6.7 |	6.6	10.6	11.3	12.5	13.0 |	13.5
France	4.4	5.7	5.9	5.8	5.8	21.7	24.1	25.2	25.0	24.7
Germany	2.3 |	3.7	4.1	4.6	4.8	29.8 |	29.9	31.4	32.4	33.1
Greece	4.0	4.7	4.8	5.3	..	11.5	13.8	14.1	15.4	..
Hungary	..	1.8	1.8	1.9	2.1	..	4.6	5.0	5.0	5.1
Iceland [d]	7.5	8.4	10.1	9.8	9.1	39.7	35.3	36.8	38.6	35.2
Ireland	4.2	6.2	7.0	8.2	7.9	20.5	26.4	27.2	31.2	31.9
Italy	3.9	4.7	5.1	4.9	5.3	18.2	20.9	22.2	22.4	23.2
Japan [b, e]	9.5	11.7	12.9	12.9	13.4	33.4	36.7	38.3	39.0	39.7
Korea [b]	3.1	2.7	3.3	5.1	5.9	6.5	6.9	7.8	9.2	10.5
Luxembourg	1.6	2.1	2.0	2.6	1.6	19.1	24.7	26.2	29.6	28.3
Mexico	..	8.3	8.7	8.2	7.2	..	28.5	30.2	28.3	26.9
Netherlands	13.4	11.3	11.1	12.4	11.9	52.5	55.5	54.8	54.8	55.4
New Zealand	7.9	10.0	10.5	10.6	11.3	34.6	36.8	37.0	37.6	37.2
Norway	6.9	8.1	7.7	7.9	8.2	39.8	37.5	36.5	35.9	35.0
Poland [b]	..	..	8.2	8.0	..	..	..	16.6	16.6	..
Portugal	3.1	4.5	5.1 |	5.1	5.0	11.8	15.1	16.5 |	15.8	14.6
Spain	1.4	2.9	3.1	2.9	2.9	11.5	16.2	16.8	16.6	16.8
Sweden	5.3 |	6.7	6.5	5.6	7.3	24.5 |	23.5	22.6	22.0	22.3
Switzerland [c]	6.8	7.3	7.1	7.2	7.7	42.6	44.9	45.7	45.8	46.5
Turkey	4.9	2.9	3.6	3.4	3.5	18.8	12.0	13.5	13.3	15.1
United Kingdom	5.3	7.7	8.2	8.2	8.5	39.5	41.4	40.9	41.2	40.6
United States [f]	8.3	8.4	8.3	8.2	8.1	20.0	20.2	19.5	19.1	19.0
European Union [g]	4.2	5.3	5.7	5.8	6.0	27.0	28.7	29.4	29.8	30.3
OECD Europe [g]	4.4	4.9	5.5	5.5	5.6	26.8	26.6	26.6	26.9	28.2
Total OECD [g]	6.6	7.3	7.7	7.8	7.8	25.0	25.7	26.0	26.0	26.4

	Part-time employment as a proportion of total employment					Women's share in part-time employment				
	1990	1996	1997	1998	1999	1990	1996	1997	1998	1999
Australia [b, c]	22.6	25.2	26.0	25.9	26.1	70.8	68.5	68.0	68.6	68.9
Austria	..	10.9	10.8	11.5	12.3	..	86.4	86.3	86.9	87.2
Belgium	14.2	16.1	16.2	16.3	19.9	79.9	82.4	82.6	82.4	79.0
Canada	17.0	18.9	19.1	18.9	18.5	70.1	69.1	70.0	69.7	69.7
Czech Republic	..	3.4	3.4	3.3	3.4	..	67.3	69.1	70.0	70.9
Denmark	19.2	16.5	17.1	17.0	15.3	71.5	66.0	64.3	68.7	68.4
Finland [b]	7.5	8.4	9.4	9.6 |	9.9	67.2	64.4	63.4	63.8 |	64.9
France	12.2	14.3	14.9	14.8	14.7	79.8	78.7	78.8	79.3	79.0
Germany	13.4 |	14.9	15.8	16.6	17.1	89.7 |	85.8	85.1	84.1	84.1
Greece	6.7	8.0	8.2	9.0	..	61.1	62.5	63.0	63.1	..
Hungary	..	3.1	3.3	3.4	3.5	..	69.4	71.3	69.2	68.7
Iceland [d]	22.2	20.9	22.4	23.2	21.2	81.6	78.3	75.8	77.4	77.1
Ireland	9.8	14.1	15.2	18.0	18.3	71.8	73.2	72.7	73.6	75.7
Italy	8.8	10.5	11.3	11.2	11.8	70.8	71.5	71.0	71.9	71.5
Japan [b, e]	19.2	21.8	23.3	23.6	24.1	70.5	68.2	67.0	67.5	67.0
Korea [b]	4.5	4.4	5.1	6.8	7.8	58.7	63.6	62.4	54.8	55.2
Luxembourg	7.6	10.4	11.1	12.8	12.1	86.5	87.3	89.0	87.3	91.8
Mexico	..	14.9	15.9	15.0	13.8	..	62.4	63.8	63.5	65.4
Netherlands	28.2	29.3	29.1	30.0	30.4	70.4	77.2	77.6	75.8	77.4
New Zealand	19.6	22.0	22.4	22.8	23.0	77.1	75.0	74.1	74.3	73.3
Norway	21.8	21.6	21.0	20.8	20.7	82.7	79.7	80.1	79.6	78.8
Poland [b]	..	..	11.9	11.8	..	..	..	61.1	62.2	..
Portugal	6.8	9.2	10.2 |	9.9	9.3	74.0	72.9	72.6 |	71.3	70.8
Spain	4.6	7.5	7.9	7.7	7.9	79.5	75.1	74.8	75.9	77.0
Sweden	14.5 |	14.8	14.2	13.5	14.5	81.1 |	76.5	76.3	78.1	73.7
Switzerland [c]	22.1	23.7	24.0	24.2	24.8	82.4	82.4	83.4	83.4	82.6
Turkey	9.2	5.6	6.3	6.2	7.1	62.5	63.7	58.6	60.3	65.6
United Kingdom	20.1	22.9	22.9	23.0	23.0	85.1	81.4	80.4	80.4	79.6
United States [f]	13.8	14.0	13.6	13.4	13.3	68.2	68.8	68.4	68.0	68.4
European Union [g]	13.3	15.2	15.7	15.9	16.4	80.9	79.6	79.1	79.0	79.0
OECD Europe [g]	13.2	13.8	14.1	14.3	15.0	79.6	78.8	77.1	77.2	78.3
Total OECD [g]	14.3	15.1	15.4	15.5	15.8	73.4	72.0	71.1	71.1	71.5

\| Indicates break in series.

a) Part-time employment refers to persons who usually work less than 30 hours per week in their main job. Data include only persons declaring usual hours.

b) Data are based on actual hours worked.

c) Part-time employment based on hours worked at all jobs.

d) 1990 refers to 1991.

e) Less than 35 hours per week.

f) Estimates are for wage and salary workers only.

g) For above countries only.

Notes, sources and definitions:

For Austria, Belgium, Denmark, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal, Spain and the United Kingdom, data are from the European Labour Force Survey. See OECD Labour Market and Social Policy Occasional Paper N° 22 the "Definition of Part-time Work for the Purpose of International Comparisons" which is available on Internet (http://www.oecd.org/els/papers/papers.htm).

Table F. Average annual hours actually worked per person in employment[a]

	1979	1983	1990	1995	1996	1997	1998	1999
Total employment								
Australia	1 904	1 852	1 869	1 876	1 867	1 866	1 860	1 864
Canada	1 836	1 783	1 790	1 780	1 787	1 777	..	..
Czech Republic	..	..	..	2 064	2 066	2 067	2 075	2 088
Finland [b]	..	1 809	1 763	1 772	1 789	1 780	1 761	1 765
Finland [c]	1 837	1 787	1 728	1 730	1 737	1 730	1 727	..
France	1 806	1 712	1 657	1 614	1 608	1 605	1 604	..
Germany	..	..	1 616	1 557	1 545	1 546	1 554	1 556
Western Germany	1 745	1 705	1 593	1 534	1 523	1 524	1 531	1 535
Iceland	..	..	..	1 832	1 860	1 839	1 817	1 873
Italy	..	..	..	..	..	..	..	..
Italy	1 722	1 699	1 674	1 635	1 636	1 640	1 648	..
Japan	2 126	2 095	2 031	1 884	1 892	1 864	1 842	..
Korea	..	2 734	2 514	2 484	2 467	2 436	2 390	2 497
Mexico	..	..	..	1 883	1 901	1 927	1 878	1 921
New Zealand	..	..	1 820	1 843	1 838	1 823	1 825	1 842
Norway	1 514	1 485	1 432	1 414	1 407	1 399	1 399	1 395
Portugal	..	..	..	..	..	..	..	..
Spain	2 022	1 912	1 824	1 814	1 810	1 812	1 833	1 827
Sweden	1 516	1 518	1 546 |	1 613	1 623	1 625	1 628	1 634
Switzerland	..	..	..	1 636	1 585	1 579	1 579	..
United Kingdom	1 815	1 713	1 767	1 740	1 738	1 736	1 731	1 720
United States	1 905	1 882	1 943 |	1 952	1 951	1 966	1 955	1 976
Dependent employment								
Canada	1 803	1 763	1 774	1 773	1 781	1 777	1 767	..
Czech Republic	..	..	..	1 987	1 987	1 989	1 995	2 014
Finland [b]	..	..	1 666	1 672	1 690	1 687	1 672	1 673
France	1 669	1 570	1 543	1 510	1 502	1 502	1 500	..
Germany	..	..	1 555 |	1 485	1 469	1 467	1 475	1 478
Western Germany	1 657	1 644	1 519	1 457	1 442	1 441	1 450	1 454
Hungary	..	1 829	1 710	1 765	1 777	1 786	1 788	1 795
Iceland	..	..	..	1 776	1 799	1 790	1 762	1 810
Italy	..	1 626	1 599	1 579	1 577	1 577	1 575	..
Japan [d]	2 114	2 098	2 052	1 909	1 919	1 900	1 879	1 842
Japan [e]	..	..	2 064	1 910	1 919	1 891	1 871	1 840
Mexico	..	..	..	1 933	2 006	1 978	1 942	1 976
Netherlands	1 591	1 530	1 433	1 384	1 374	1 365	..	..
Spain	1 936	1 837	1 762	1 749	1 747	1 748	1 765	1 761
United Kingdom	1 750	1 652	1 704	1 698	1 699	1 701	1 703	1 696
United States	1 884	1 866	1 936 |	1 953	1 949	1 966	1 957	1 974

| Indicates break in series.

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.

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: Data supplied by the Australian Bureau of Statistics from the Labour Force Survey. Annual hours are adjusted to take account of public holidays occuring during the reporting period. The method of estimation is consistent with the national accounts.

Canada: Data series 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. Main meal breaks (one half hour a day) are included.

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: New data series supplied by the Institut National de la Statistique et des Études Économiques (INSEE), produced within the framework of the national accounts.

Germany and western Germany: New data series from 1991 are 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. Data prior to 1991 are estimated by applying new to old annual hours of work estimates for 1991 to the old series.

Iceland: Data are provided by Statistics Iceland and are based on the Icelandic Labor Force Survey. Annual actual hours worked per person in employment are computed by multiplying daily actual hours worked by annual actual working days net of public holidays and annual vacations. The latter are for a typical work contract by sector of activity.

Italy: Data are Secretariat estimates based on the European Labour Force Survey for 1983 to 1998. From 1960 to 1982, trend in data is taken from the series provided by ISTAT and based on a special establishment survey total employment discontinued in 1985.

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.

Korea: Data supplied by the Ministry of Labour from the Report on monthly labour survey.

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.

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 Estadística and derived from the quarterly Labour Force Survey. Series break at 1986/87 due to changes in the survey.

Sweden: New series from 1996 are supplied by Statistics Sweden derived from national accounts data, based on both the Labour Force Survey and establishment surveys. Data prior to 1996 are estimated by applying new to old annual hours of work estimates for 1995 to the old series.

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: Since 1994, data refer to the United Kingdom (including Northern Ireland). 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 and based on the Current Population Survey. Series breaks at 1975/76 and 1989/90 are due to changes in population controls and at 1993/94 due to redesigned CPS questionnaire.

Table G. Incidence of long-term unemployment [a, b, c, d, e]

As a percentage of total unemployment

	1990		1996		1997		1998		1999	
	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	41.0	21.6	48.5	28.4	51.4	30.7	52.2	33.6	48.4	29.4
Austria	..	..	42.5	25.6	47.7	28.7	43.3	29.2	47.6	31.7
Belgium	81.4	68.7 |	77.3	61.3	77.2	60.5	76.3	61.7	73.5	60.5
Canada	20.2	7.2	29.3	16.7	26.9	16.1	24.1	13.7	21.4	11.6
Czech Republic	..	..	52.3	31.3	53.0	30.5	54.6	31.2	61.9	37.1
Denmark	53.2	29.9 |	44.4	26.5	45.7	27.2	41.4	26.9	38.5	20.5
Finland [f]	32.6	9.2	55.5	34.5	48.6	29.8	42.2	27.5 |	46.4	29.6
France	55.5	38.0	61.5	39.5	63.7	41.2	64.2	44.1	55.5	40.3
Germany	64.7	46.8 |	65.3	47.8	68.5	50.1	69.6	52.6	67.2	51.7
Greece	71.9	49.8 |	74.7	56.7	76.5	55.7	74.8	54.9	..	..
Hungary	..	..	75.2	54.4	73.5	51.3	71.0	49.8	70.4	49.5
Iceland [f]	13.6	6.7	31.2	19.8	27.0	16.3	22.9	16.1	20.2	11.7
Ireland	81.0	66.0 |	75.7	59.5	73.6	57.0	..	..	..	..
Italy	85.2	69.8 |	80.8	65.6	81.8	66.3	77.3	59.6	77.2	61.4
Japan	39.0	19.1	40.4	20.2	41.3	21.8	39.3	20.9	44.5	22.4
Korea	13.9	2.6	16.0	3.9	15.8	2.6	14.7	1.6	18.6	3.8
Luxembourg [g]	(66.7)	(42.9)|	(44.6)	(27.6)	(61.1)	(34.6)	(55.2)	(31.3)	(53.8)	(32.3)
Mexico	..	..	9.8	2.2	6.9	1.8	3.3	0.9	6.8	1.7
Netherlands	63.6	49.3 |	81.8	50.0	80.4	49.1	83.5	47.9	80.7	43.5
New Zealand	39.5	20.9	36.6	20.7	36.4	19.4	37.9	19.4	39.0	20.8
Norway	40.8	20.4 |	31.1	16.0	26.1	12.0	20.5	8.2	16.2	6.8
Poland	62.8	39.0	62.2	38.0	60.4	37.4	..	..		
Portugal	62.4	44.8 |	66.7	53.1	66.7	55.6 |	64.5	44.7	63.8	41.2
Spain	70.2	54.0	72.2	55.7	71.8	55.5	70.4	54.1	67.9	51.3
Sweden	22.2	12.1 |	48.4	30.1	50.8	33.4	49.2	33.5	..	..
Switzerland [f]	26.2	16.4	52.1	25.0	49.4	28.5	48.9	34.8	61.0	39.8
Turkey	72.6	47.0	65.9	43.5	62.7	41.6	60.3	40.0	60.6	33.7
United Kingdom	50.3	34.4 |	58.1	39.8	54.8	38.6	47.3	32.7	45.7	29.8
United States	10.0	5.5 |	17.5	9.5	15.9	8.7	14.1	8.0	12.3	6.8
European Union [h]	65.3	48.6 |	67.4	49.3	68.2	50.1 |	66.7	49.1 |	63.7	47.5
OECD Europe [h]	65.7	48.1 |	66.6	47.6	66.9	48.0 |	65.3	47.0 |	63.3	45.8
Total OECD [h]	44.6	30.9 |	50.3	34.2	50.8	34.9 |	48.3	33.1 |	46.2	31.2

\| Indicates break in series.

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 database 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 the Czech Republic, Hungary, Norway, New Zealand, Poland and Spain, and averages of semi annual figures for 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; Iceland, April; Ireland, May; Italy, April; Japan, February; Luxembourg, April; Mexico, April; the 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, the Czech Republic, Denmark, France, Germany, Greece, Ireland, Italy, Japan, Luxembourg, Mexico, Netherlands, New Zealand, Poland, Portugal, Switzerland and Turkey; and aged 16 and over in Iceland, 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 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) Data for 1990 refer to 1991.

g) Data in brackets are based on small sample sizes and, therefore, must be treated with care.

h) For above countries only.

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: Data from the Labour Force Suvrvey supplied by the Australian Bureau of Statistics (ABS).
Canada: 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: Data from the *Supplementary Labour Force Survey* (biennial from 1989 until 1995, and annual from 1995 onwards) supplied by the Central Statistical Office (CSO).
France: Data from the Enquête Emploi supplied by the Institut National de la Statistique et des Études Économiques (INSEE).
Hungary: Data from the Labour Force Survey supplied by the Central Statistical Office (CSO).
Iceland: Data from the Labour Force Survey supplied by Statistics Iceland.
Japan: Data from the Special Survey of the Labour Force Survey supplied by the Statistics Bureau, Management and Coordination Agency (MCA).
Korea: Data from the Labour Force Survey supplied by the National Statistical Office (NSO).
Mexico: Data from the biennial Encuesta Nacional de Empleo (ENE) supplied by the Secretaría del Trabajo y Previsión Social (STPS).
New Zealand: Data from the Household Labour Force Survey supplied by the Department of Statistics.
Norway: Data from the Labour Force Survey supplied by the Central Statistical Office (CSO).
Poland: Data from the Labour Force Survey supplied by the Central Statistical Office (CSO).
Spain: Data from the Labour Force Survey supplied by Instituto Nacional de Estadística (INE).
Sweden: Data from the Labour Force Survey supplied by Statistics Sweden.
Switzerland: Data from the Labour Force Survey supplied by the Swiss Federal Statistical Office (OFS).
Turkey: Data from the Household Labour Force Survey supplied by the State Institute of Statistics (SIS).
United States: Data from the Current Population Census (CPS) supplied by the Bureau of Labor Statistics (BLS).

Table G. **Incidence of long-term unemployment among men** [a, b, c, d, e] *(cont.)*

As a percentage of male unemployment

	1990		1996		1997		1998		1999	
	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	42.6	24.4	50.6	30.9	54.5	33	55.1	36.5	50.9	31.8
Austria	..	..	38.2	23.2	42.1	28.9	37.9	26.6	40.2	28.1
Belgium	79.5	66.1	75.2	58.9	76.6	59.4	75.0	59.5	73.2	60.1
Canada	20.4	7.9	30.1	17.8	28.4	17.9	25.6	15.0	23.3	12.8
Czech Republic	51.0	30.9	53.1	31.3	52.9	30.9	58.0	32.7		
Denmark	48.9	27.8	44.2	28.1	44.5	26.3	40.9	23.9	38.6	20.9
Finland [f]	36.8	9.7	59.0	38.5	49.5	31.9	46.3	31.7	49.2	33.1
France	53.1	35.4	58.6	37.1	61.7	39.1	62.3	43.2	53.7	39.0
Germany	65.2	49.1	61.8	44.5	65.9	47.1	66.0	49.9	65.3	49.9
Greece	61.8	39.9	66.7	47.3	69.1	45.8	68.9	44.7	..	..
Hungary	..	..	76.8	57.0	74.2	52.6	71.5	50.2	70.9	50.6
Iceland [f]	5.1	1.3	34.4	23.7	27.2	20.1	21.4	13.6	13.9	6.6
Ireland	84.3	71.1	79.2	64.6	77.9	63.3	..	..	..	..
Italy	84.1	68.6	78.7	64.1	81.2	66.5	76.4	60.4	76.6	62.1
Japan	47.6	26.2	46.2	23.8	49.2	28.8	45.0	25.8	49.5	27.4
Korea	16.0	3.3	18.1	4.3	18.6	3.5	16.8	1.9	21.3	4.7
Luxembourg [g]	(80.0)	(60.0)	(49.0)	(30.1)	(65.7)	(32.7)	(57.3)	(38.0)	(61.6)	(38.6)
Mexico	..	..	9.7	2.1	8.6	1.2	4.2	1.2	5.8	2.7
Netherlands	65.6	55.2	81.4	54.3	76.6	49.9	81.0	51.3	75.1	47.7
New Zealand	44.0	24.5	40.5	23.9	40.4	22.1	41.1	22.6	42.5	23.0
Norway	37.9	19.0	32.7	18.2	29.2	14.6	23.1	10.3	17.1	7.3
Poland	..	..	59.3	35.2	57.8	33.5	55.2	32.5	..	..
Portugal	56.3	38.2	64.1	51.7	64.8	53.4	61.9	43.6	63.5	39.5
Spain	63.3	45.8	67.4	49.8	67.2	49.9	65.4	48.0	62.2	45.4
Sweden	22.2	12.3	51.6	33.6	53.1	36.1	52.2	36.3	..	..
Switzerland [f]	28.0	16.0	50.0	20.8	47.9	25.5	51.5	37.9	59.3	40.7
Turkey	71.2	44.9	63.7	39.9	59.3	38.1	58.1	37.5	57.3	29.8
United Kingdom	56.8	41.8	63.5	45.9	60.2	44.9	53.2	38.0	50.5	34.8
United States	12.1	7.0	18.5	10.3	16.7	9.4	15.2	8.8	13.0	7.4
European Union [h]	63.5	47.0	65.4	47.6	66.4	48.5	64.5	47.5	61.8	46.2
OECD Europe [h]	64.3	46.4	64.6	45.6	64.8	46.0	62.8	45.0	61.1	43.6
Total OECD [h]	43.7	29.7	49.1	32.9	50.0	34.0	46.9	31.8	45.5	30.3

Sources and notes: See total unemployment, p. 220.

Table G. Incidence of long-term unemployment among women [a, b, c, d, e] (cont.)

As a percentage of female unemployment

	1990		1996		1997		1998		1999	
	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	38.8	17.8	45.4	24.8	47.0	27.4	48.0	29.3	44.9	25.8
Austria	..	..	48.1	28.8	54.5	28.4	50.1	32.5	56.9	36.1
Belgium	82.5	70.0	79.1	63.3	77.8	61.5	77.5	63.5	73.8	60.9
Canada	19.8	6.2	28.3	15.3	25.0	13.9	22.2	12.2	18.9	10.2
Czech Republic	..	..	53.5	31.6	53.0	29.9	55.9	31.5	65.3	40.9
Denmark	57.7	32.0	44.6	25.3	46.7	27.9	41.6	29.0	38.5	20.1
Finland [f]	26.3	8.4	52.1	30.5	47.7	27.6	37.8	23.1	43.7	26.2
France	57.3	40.0	64.0	41.6	65.6	43.3	66.0	44.9	57.3	41.6
Germany	64.2	44.5	69.4	51.7	71.4	53.6	73.7	55.6	69.4	54.0
Greece	78.2	55.9	79.7	62.5	81.4	62.2	78.6	61.5	..	..
Hungary	..	..	72.7	50.4	72.3	49.2	70.1	49.2	69.7	47.9
Iceland [f]	21.1	11.5	27.8	15.9	26.8	12.6	24.1	18.1	24.5	15.2
Ireland	75.0	56.8	70.1	51.2	66.6	46.9	..	..	..	..
Italy	86.0	70.7	82.8	67.1	82.5	66.2	78.1	58.8	77.7	60.7
Japan	26.3	8.8	30.7	12.5	29.8	11.7	30.5	13.7	36.9	14.8
Korea	8.9	0.9	11.5	3.0	11.0	1.0	10.3	0.8	13.1	1.9
Luxembourg [g]	(55.6)	(33.3)	(40.6)	(25.3)	(57.3)	(36.1)	(53.6)	(26.3)	(47.5)	(27.2)
Mexico	..	..	10.0	2.4	4.9	2.4	2.2	0.4	8.0	0.4
Netherlands	62.0	44.6	82.1	46.1	83.4	48.5	85.5	45.2	84.9	40.4
New Zealand	32.6	15.5	31.8	16.7	31.3	16.0	33.7	15.2	34.3	17.9
Norway	45.0	22.5	29.4	13.7	25.0	11.4	17.1	5.7	15.6	6.3
Poland	..	..	66.1	42.5	66.0	41.9	65.1	41.8	..	..
Portugal	66.4	49.4	69.2	54.4	68.5	57.7	66.6	45.6	64.2	42.9
Spain	76.5	61.5	76.7	61.3	75.9	60.4	74.4	59.1	72.0	55.5
Sweden	22.2	11.8	44.5	25.8	48.1	30.1	45.6	30.1	..	..
Switzerland [f]	25.0	16.7	54.4	29.4	51.6	32.8	46.4	31.9	62.7	39.0
Turkey	75.6	51.2	72.3	53.6	69.7	49.0	65.8	46.1	69.3	44.1
United Kingdom	40.8	23.7	47.7	28.0	45.3	27.8	37.7	24.0	37.9	21.6
United States	7.3	3.7	16.2	8.4	14.9	8.0	12.8	7.1	11.6	6.2
European Union [h]	66.9	50.1	69.6	51.2	70.1	51.8	68.9	50.7	65.6	48.9
OECD Europe [h]	67.2	49.8	68.9	49.8	69.2	50.1	67.8	49.0	65.7	48.1
Total OECD [h]	45.7	32.2	51.7	35.6	51.7	35.9	49.9	34.7	47.1	32.3

Sources and notes: See total unemployment, p. 220.

Table H. Public expenditure and participant inflows* in labour market programmes in OECD countries

Programme categories	Australia [a]								Austria								Belgium							
	Public expenditure as a percentage of GDP				Participant inflows as a percentage of the labour force				Public expenditure as a percentage of GDP				Participant inflows as a percentage of the labour force				Public expenditure as a percentage of GDP				Participant inflows as a percentage of the labour force			
	1995-96	1996-97	1997-98	1998-99	1995-96	1996-97	1997-98	1998-99	1996	1997	1998	1999	1996	1997	1998	1999	1995	1996	1997	1998	1995	1996	1997	1998
1. Public employment services and administration	**0.23**	**0.23**	**0.20**	**0.19**					**0.14**	**0.14**	**0.13**	**0.14**					**0.22**	**0.20**	**0.19**	**0.19**				
2. Labour market training	**0.14**	**0.09**	**0.05**	**..**	**4.8**	**2.1**	**1.9**	**..**	**0.15**	**0.17**	**0.15**	**0.19**	**1.5** [b]	**1.9** [b]	**1.7** [b]	**3.0** [b]	**0.28**	**0.28**	**0.26**	**0.26**	**8.9**	**8.5**	**8.5**	**8.7**
a) Training for unemployed adults and those at risk	0.14	0.08	0.05	..	4.2	1.8	1.6	..	0.15	0.15	0.13	0.16	..	..	..	..	0.16	0.18	0.17	0.17	2.7	2.4	2.4	2.5
b) Training for employed adults	0.01	0.01	–	..	0.6	0.4	0.2	0.2	–	0.02	0.02	0.02	–	..	..	..	0.11	0.11	0.09	0.09	6.2	6.2	6.1	6.1
3. Youth measures	**0.06**	**0.06**	**0.06**	**0.06**	**1.3**	**1.2**	**1.9**	**..**	**0.01**	**0.02**	**0.04**	**0.05**	**0.1**	**0.3**	**0.2**	**0.2**	**0.07**	**0.03**	**0.01**	**–**	**0.7**	**0.5**	**0.2**	**–**
a) Measures for unemployed and disadvantaged youth	0.03	0.01	–	0.01	0.4	0.2	0.3	0.5	0.01	0.02	0.01	0.02	..	..	..	..	–	–	–	–	–	–	–	–
b) Support of apprenticeship and related forms of general youth training	0.03	0.05	0.05	0.05	0.9	1.1	1.7	..	–	–	0.03	0.03	–	..	..	..	0.07	0.03	0.01	–	0.7	0.5	0.2	–
4. Subsidised employment	**0.30**	**0.20**	**0.13**	**0.09**	**2.5**	**1.5**	**1.1**	**..**	**0.05**	**0.07**	**0.07**	**0.09**	**0.3**	**0.5**	**0.3**	**0.6**	**0.68**	**0.84**	**0.65**	**0.77**	**4.6**	**7.3**	**5.9**	**7.6**
a) Subsidies to regular employment in the private sector	0.06	0.06	0.04	0.01	1.2	1.0	0.7	..	0.02	0.03	0.03	0.05	..	..	..	..	0.12	0.27	0.17	0.30	1.8	4.5	2.8	4.7
b) Support of unemployed persons starting enterprises	0.03	0.03	0.02	0.02	0.1	0.1	0.1	0.1	–	–	0.01	0.01	–	–	..	..	–	–	–	–	–	–	–	–
c) Direct job creation (public or non-profit)	0.22	0.11	0.07	0.06	1.1	0.4	0.3	0.3	0.03	0.04	0.03	0.03	..	..	..	..	0.56	0.56	0.48	0.47	2.8	2.8	3.0	2.8
5. Measures for the disabled	**0.06**	**0.06**	**0.05**	**0.06**	**0.7**	**0.7**	**0.3**	**0.8**	**0.05**	**0.05**	**0.05**	**0.06**	*b*	*b*	*b*	*b*	**0.13**	**0.12**	**0.12**	**0.11**	**..**	**..**	**..**	**..**
a) Vocational rehabilitation	0.03	0.02	0.02	0.02	0.3	0.3	0.3	0.3	0.03	0.02	0.02	0.03	..	..	..	..	0.03	0.02	0.02	0.02	..	..	..	..
b) Work for the disabled	0.04	0.04	0.04	0.04	0.4	0.4	–	0.5	0.02	0.03	0.03	0.03	..	..	..	..	0.10	0.10	0.10	0.09	..	..	..	..
6. Unemployment compensation	**1.24**	**1.24**	**1.12**	**1.06**	**16.1**	**..**	**..**	**..**	**1.27**	**1.21**	**1.21**	**1.16**	**19.5**	**19.6**	**19.4**	**18.6**	**2.09**	**2.12**	**2.05**	**1.95**	**..**	**..**	**..**	**..**
7. Early retirement for labour market reasons	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**0.12**	**0.07**	**0.05**	**0.04**	**1.1**	**0.7**	**0.6**	**0.6**	**0.65**	**0.64**	**0.60**	**0.56**	**..**	**..**	**..**	**..**
TOTAL	**2.04**	**1.88**	**1.61**	**..**	**25.4**	**..**	**..**	**..**	**1.78**	**1.73**	**1.71**	**1.72**	**22.5**	**22.9**	**22.2**	**23.0**	**4.12**	**4.24**	**3.89**	**3.85**	**..**	**..**	**..**	**..**
Active measures (1-5)	0.80	0.63	0.49	..	9.2	5.6	5.3	..	0.39	0.45	0.44	0.52	1.8	2.6	2.2	3.8	1.38	1.47	1.23	1.34	..	..	..	..
Passive measures (6 and 7)	1.24	1.24	1.12	1.06	16.1	..	..	..	1.39	1.28	1.27	1.20	20.7	20.3	20.0	19.2	2.74	2.77	2.66	2.51	..	..	..	..
For reference:																								
GDP (national currency, at current prices, 10^9)	508.1	533.6	565.9	593.3					2 453.2	2 522.2	2 610.9	2 683.6					8 128.9	8 304.1	8 712.4	9 088.8				
Labour force (thousands)					9 113	9 222	9 292	9 422					3 870	3 884	3 888	3 929					4 318	4 329	4 348	4 359

a) Fiscal years starting on July 1.
b) Participant inflows for category 5 "Measures for the disabled" are included in category 2 "Labour market training".

Table H. Public expenditure and participant inflows* in labour market programmes in OECD countries *(cont.)*

Programme categories	Canada [a]							Czech Republic								Denmark							
	Public expenditure as a percentage of GDP				Participant inflows as a percentage of the labour force			Public expenditure as a percentage of GDP				Participant inflows as a percentage of the labour force				Public expenditure as a percentage of GDP				Participant inflows as a percentage of the labour force			
	1995-96	1996-97	1997-98	1998-99 [b]	1995-96	1996-97	1997-98	1996	1997	1998	1999	1996	1997	1998	1999	1996	1997	1998	1999	1996	1997	1998	1999
1. Public employment services and administration	**0.21**	**0.19**	**0.18**	**0.20**				**0.09**	**0.08**	**0.08**	**0.09**					**0.11**	**0.12**	**0.12**	**0.11**				
2. Labour market training	**0.25**	**0.17**	**0.15**	**0.18**	**1.9**	**1.9**	**1.6**	**0.01**	**0.01**	**0.01**	**0.01**	**0.2**	**0.2**	**0.3**	**0.4**	**1.07**	**0.93**	**0.96**	**0.98**	**17.1**	**18.5**	**20.6**	**19.8**
a) Training for unemployed adults and those at risk	0.24	0.16	0.15	0.17	1.9	1.9	1.6	0.01	0.01	0.01	0.01	0.2	0.2	0.3	0.4	0.78	0.64	0.71	0.78	8.2	8.8	12.5	11.7
b) Training for employed adults	0.01	–	–	–	–	–	–	–	–	–	–	–	–	–	–	0.29	0.28	0.25	0.21	8.9	9.6	8.2	8.1
3. Youth measures	**0.02**	**0.02**	**0.03**	**0.03**	**0.5**	**0.5**	**..**	**0.01**	**0.01**	**0.01**	**0.02**	**0.1**	**0.1**	**0.2**	**0.2**	**0.08**	**0.10**	**0.08**	**0.12**	**1.7**	**1.5**	**1.5**	**1.9**
a) Measures for unemployed and disadvantaged youth	0.01	0.01	0.02	0.02	0.2	0.2	..	0.01	0.01	0.01	0.02	0.1	0.1	0.2	0.2	0.08	0.10	0.08	0.12	1.7	1.5	1.5	1.9
b) Support of apprenticeship and related forms of general youth training	0.01	0.01	0.01	0.01	0.3	0.4	..	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
4. Subsidised employment	**0.06**	**0.06**	**0.08**	**0.08**	**0.3**	**0.3**	**0.3**	**0.02**	**0.02**	**0.03**	**0.05**	**0.3**	**0.3**	**0.4**	**0.6**	**0.30**	**0.30**	**0.27**	**0.23**	**1.4**	**1.1**	**1.1**	**1.0**
a) Subsidies to regular employment in the private sector	0.01	0.01	0.01	0.01	–	0.1	0.1	–	–	0.01	0.02	0.1	–	0.1	0.2	0.03	0.02	0.02	0.02	0.3	0.2	0.3	0.2
b) Support of unemployed persons starting enterprises	0.02	0.02	0.02	0.01	0.1	0.1	0.1	–	–	–	0.01	–	–	–	0.1	0.07	0.06	0.04	0.02	0.1	0.1	–	–
c) Direct job creation (public or non-profit)	0.03	0.02	0.05	0.05	0.2	0.1	0.1	0.01	0.01	0.02	0.03	0.2	0.2	0.2	0.3	0.20	0.22	0.21	0.19	1.0	0.8	0.8	0.8
5. Measures for the disabled	**0.02**	**0.03**	**0.03**	**0.03**	**–**	**–**	**–**	**–**	**–**	**0.01**	**0.01**	**–**	**–**	**–**	**–**	**0.22**	**0.21**	**0.24**	**0.33**	**2.2**	**2.3**	**2.5**	**3.1**
a) Vocational rehabilitation	0.02	0.03	0.03	0.02	–	–	–	–	–	–	–	–	–	–	–	0.22	0.21	0.24	0.33	2.2	2.3	2.5	3.1
b) Work for the disabled	–	–	–	–	–	–	–	–	–	0.01	0.01	–	–	–	–	–	–	–	–	–	–	–	–
6. Unemployment compensation	**1.28**	**1.15**	**1.01**	**0.99**	**..**	**..**	**..**	**0.13**	**0.20**	**0.23**	**0.31**	**..**	**..**	**..**	**..**	**2.43**	**2.13**	**1.68**	**1.43**	**26.8**	**24.4**	**23.1**	**21.3**
7. Early retirement for labour market reasons	**0.01**	**0.01**	**–**	**–**	**..**	**..**	**..**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**1.72**	**1.71**	**1.70**	**1.70**	**1.0**	**1.1**	**1.1**	**0.6**
TOTAL	**1.85**	**1.62**	**1.47**	**1.50**	**..**	**..**	**..**	**0.26**	**0.32**	**0.36**	**0.49**	**..**	**..**	**..**	**..**	**5.93**	**5.50**	**5.04**	**4.90**	**50.2**	**48.9**	**49.8**	**47.7**
Active measures (1-5)	0.56	0.47	0.46	0.51	2.7	2.7	..	0.12	0.11	0.13	0.19	0.6	0.6	0.8	1.2	1.78	1.66	1.67	1.77	22.4	23.4	25.7	25.8
Passive measures (6 and 7)	1.29	1.16	1.01	0.99	..	..	..	0.13	0.20	0.23	0.31	..	..	..	..	4.15	3.84	3.37	3.12	27.8	25.5	24.1	21.9
For reference:																							
GDP (national currency, at current prices, 10^9)	811.9	844.9	881.3	903.7				1 572.3	1 680.0	1 820.7	1 859.2					1 061.7	1 114.3	1 168.3	1 217.9				
Labour force (thousands)					15 039	15 246	15 484					5 173	5 249	5 565	5 575					2 822	2 856	2 848	2 848

a) Fiscal years starting on April 1.
b) Provisional data.

Table H. Public expenditure and participant inflows* in labour market programmes in OECD countries *(cont.)*

Programme categories	Finland								France								Germany							
	Public expenditure as a percentage of GDP				Participant inflows as a percentage of the labour force				Public expenditure as a percentage of GDP				Participant inflows as a percentage of the labour force				Public expenditure as a percentage of GDP				Participant inflows as a percentage of the labour force			
	1996	1997	1998	1999 [a]	1996	1997	1998	1999 [a]	1995	1996	1997	1998	1995	1996	1997	1998	1996	1997	1998	1999	1996	1997	1998	1999
1. Public employment services and administration	**0.15**	**0.14**	**0.13**	**0.14**					**0.15**	**0.16**	**0.16**	**0.16**					**0.23**	**0.21**	**0.22**	**0.23**				
2. Labour market training	**0.55**	**0.53**	**0.44**	**0.38**	**4.7**	**5.4**	**4.4**	**4.0**	**0.38**	**0.36**	**0.34**	**0.31**	**3.4**	**3.4**	**2.9**	**2.8**	**0.45**	**0.35**	**0.34**	**0.35**	**1.9**	**1.3**	**1.5**	**1.3**
a) Training for unemployed adults and those at risk	0.54	0.52	0.42	0.34	4.7	5.4	4.4	4.0	0.34	0.32	0.31	0.28	2.8	2.8	2.4	2.3	0.45	0.35	0.34	0.35	1.9	1.3	1.5	1.3
b) Training for employed adults	0.01	0.02	0.02	0.04	–	–	–	–	0.04	0.04	0.03	0.03	0.6	0.6	0.5	0.6	–	–	–	–	–	–	–	–
3. Youth measures	**0.21**	**0.23**	**0.21**	**0.22**	**2.5**	**2.7**	**2.5**	**2.7**	**0.27**	**0.27**	**0.26**	**0.32**	**2.8**	**2.6**	**2.5**	**2.8**	**0.07**	**0.07**	**0.07**	**0.08**	**0.7**	**0.7**	**0.9**	**1.0**
a) Measures for unemployed and disadvantaged youth	0.11	0.11	0.10	0.11	1.6	1.7	1.7	1.7	0.10	0.09	0.07	0.14	0.9	0.6	0.6	0.8	0.06	0.06	0.06	0.07	0.4	0.4	0.6	0.6
b) Support of apprenticeship and related forms of general youth training	0.10	0.12	0.10	0.12	0.9	1.0	0.9	0.9	0.17	0.18	0.19	0.18	2.0	2.0	1.9	2.0	0.01	0.01	0.01	0.01	0.3	0.3	0.3	0.4
4. Subsidised employment	**0.65**	**0.52**	**0.51**	**0.37**	**4.8**	**4.5**	**3.5**	**2.7**	**0.40**	**0.48**	**0.51**	**0.46**	**4.5**	**4.2**	**4.5**	**4.0**	**0.41**	**0.33**	**0.38**	**0.40**	**1.4**	**1.2**	**2.0**	**1.6**
a) Subsidies to regular employment in the private sector	0.09	0.09	0.18	0.16	1.2	1.3	1.3	1.1	0.16	0.24	0.31	0.27	2.3	2.4	2.8	2.4	0.07	0.05	0.03	0.03	0.2	0.2	0.2	0.1
b) Support of unemployed persons starting enterprises	0.03	0.03	0.03	0.03	0.2	0.2	0.2	0.2	0.04	0.02	–	–	0.3	0.2	0.1	0.2	0.03	0.03	0.03	0.04	0.2	0.2	0.3	0.3
c) Direct job creation (public or non-profit)	0.53	0.40	0.30	0.19	3.4	2.9	2.0	1.5	0.20	0.22	0.19	0.19	1.8	1.7	1.5	1.4	0.32	0.26	0.32	0.33	1.0	0.8	1.6	1.3
5. Measures for the disabled	**0.12**	**0.12**	**0.11**	**0.10**	**0.8**	**0.8**	**0.9**	**0.8**	**0.09**	**0.08**	**0.08**	**0.09**	**0.3**	**0.3**	**0.3**	**0.4**	**0.27**	**0.27**	**0.25**	**0.25**	**0.3**	**0.3**	**0.3**	**0.3**
a) Vocational rehabilitation	0.06	0.06	0.06	0.05	0.8	0.8	0.9	0.8	0.03	0.02	0.02	0.02	0.3	0.3	0.3	0.4	0.13	0.13	0.10	0.10	0.3	0.3	0.3	0.3
b) Work for the disabled	0.06	0.06	0.05	0.05	–	–	–	–	0.06	0.06	0.06	0.06	..	..	..	..	0.13	0.14	0.15	0.15	–	–	–	–
6. Unemployment compensation	**3.20**	**2.72**	**2.14**	**1.87**	**..**	**..**	**..**	**..**	**1.41**	**1.43**	**1.49**	**1.48**	**6.5**	**6.7**	**6.6**	**6.7**	**2.34**	**2.47**	**2.27**	**2.11**	**..**	**..**	**..**	**..**
7. Early retirement for labour market reasons	**0.41**	**0.42**	**0.43**	**0.47**	**..**	**..**	**..**	**..**	**0.36**	**0.36**	**0.35**	**0.32**	**0.3**	**0.4**	**0.3**	**0.3**	**0.15**	**0.05**	**–**	**0.01**	**..**	**..**	**..**	**..**
TOTAL	**5.31**	**4.68**	**3.97**	**3.55**	**..**	**..**	**..**	**..**	**3.06**	**3.13**	**3.19**	**3.13**	**17.8**	**17.8**	**17.2**	**17.0**	**3.92**	**3.76**	**3.54**	**3.42**	**..**	**..**	**..**	**..**
Active measures (1-5)	1.69	1.54	1.39	1.22	12.8	13.3	11.4	10.3	1.29	1.34	1.35	1.33	11.1	10.6	10.2	10.0	1.43	1.23	1.26	1.30	4.2	3.5	4.7	4.3
Passive measures (6 and 7)	3.61	3.14	2.57	2.33	..	..	..	..	1.77	1.79	1.83	1.80	6.8	7.2	7.0	7.0	2.49	2.52	2.28	2.12	..	..	..	..
For reference:																								
GDP (national currency, at current prices, 10^9)	585.9	635.5	686.7	717.8					7 752.4	7 951.4	8 224.9	8 564.7					3 586.0	3 666.6	3 784.2	3 877.1				
Labour force (thousands)					2 521	2 508	2 532	2 580					25 349	25 607	25 769	25 917					39 588	39 836	39 804	39 775

a) Provisional data.

Table H. Public expenditure and participant inflows* in labour market programmes in OECD countries *(cont.)*

Programme categories	Greece			Hungary								Ireland				Italy				Japan [b]			
	Public expenditure as a percentage of GDP			Public expenditure as a percentage of GDP				Participant inflows as a percentage of the labour force				Public expenditure as a percentage of GDP		Participant inflows as a percentage of the labour force		Public expenditure as a percentage of GDP				Public expenditure as a percentage of GDP			
	1995	1996	1997	1996	1997	1998	1999 [a]	1996	1997	1998	1999 [a]	1995	1996	1995	1996	1996	1997	1998	1999 [a]	1995-96	1996-97	1997-98	1998-9
1. Public employment services and administration	**0.14**	**0.14**	**0.12**	**0.11**	**0.13**	**0.12**	**0.11**					**0.27**	**0.24**			**0.04**	**0.04**	**0.04**	**0.04**	**0.03**	**0.03**	**0.03**	**0.03**
2. Labour market training	**0.13**	**0.09**	**0.06**	**0.08**	**0.08**	**0.07**	**0.07**	**1.2**	**1.2**	**1.3**	**1.4**	**0.22**	**0.21**	**4.8**	**4.1**	**0.01**	**0.12**	**0.24**	**0.25**	**0.03**	**0.03**	**0.03**	**0.03**
a) Training for unemployed adults and those at risk	..	..	..	0.08	0.08	0.07	0.07	1.1	1.1	1.2	1.2	0.15	0.14	1.8	1.6	–	..	..	..	0.03	0.03	0.03	0.03
b) Training for employed adults	..	..	..	–	–	–	–	0.1	0.1	0.1	0.1	0.06	0.08	2.9	2.5	0.01	..	..	..	–	–	–	–
3. Youth measures	**0.10**	**0.10**	**0.10**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**0.25**	**0.24**	**1.4**	**1.3**	**0.41**	**0.22**	**0.25**	**0.27**	**–**	**–**	**–**	**–**
a) Measures for unemployed and disadvantaged youth	0.03	0.03	0.02	–	–	–	–	–	–	–	–	0.11	0.11	0.7	0.7	0.04	0.03	0.03	0.04	–	–	–	–
b) Support of apprenticeship and related forms of general youth training	0.07	0.07	0.07	–	–	–	–	–	–	–	–	0.14	0.13	0.6	0.6	0.38	0.19	0.22	0.23	–	–	–	–
4. Subsidised employment	**0.08**	**0.10**	**0.06**	**0.18**	**0.23**	**0.20**	**0.22**	**4.4**	**3.6**	**4.2**	**4.1**	**0.86**	**0.88**	**5.6**	**5.7**	**0.60**	**0.62**	**0.59**	**0.53**	**0.06**	**0.04**	**0.02**	**0.02**
a) Subsidies to regular employment in the private sector	0.05	0.07	0.04	0.06	0.08	0.09	0.08	1.1	1.3	1.4	1.0	0.17	0.24	1.8	1.9	0.55	0.56	0.52	0.45	0.06	0.04	0.02	0.02
b) Support of unemployed persons starting enterprises	0.02	0.02	0.02	–	–	–	–	0.1	0.1	0.1	0.1	0.01	0.02	0.1	0.1	–	–	0.01	0.02	–	–	–	–
c) Direct job creation (public or non-profit)	–	–	–	0.12	0.15	0.11	0.13	3.2	2.2	2.7	3.0	0.67	0.63	3.8	3.7	0.04	0.06	0.06	0.06	–	–	–	–
5. Measures for the disabled	**–**	**0.03**	**0.01**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**0.09**	**0.08**	**0.1**	**0.1**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**
a) Vocational rehabilitation	–	..	..	–	–	–	–	–	–	–	–	0.09	0.08	0.1	0.1	–	–	–	–	–	–	–	–
b) Work for the disabled	–	..	..	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
6. Unemployment compensation	**0.43**	**0.44**	**0.50**	**0.60**	**0.46**	**0.45**	**0.47**	**8.2**	**7.7**	**7.3**	**7.4**	**2.57**	**2.29**	**17.8**	**18.1**	**0.67**	**0.62**	**0.59**	**0.55**	**0.39**	**0.40**	**0.43**	**0.52**
7. Early retirement for labour market reasons	**–**	**–**	**–**	**0.15**	**0.17**	**0.16**	**0.09**	**0.7**	**0.6**	**–**	**–**	**0.14**	**0.13**	**1.4**	**1.4**	**0.20**	**0.16**	**0.12**	**0.09**	**–**	**–**	**–**	**–**
TOTAL	**0.88**	**0.89**	**0.85**	**1.12**	**1.07**	**1.01**	**0.96**	**14.6**	**13.2**	**12.8**	**12.9**	**4.39**	**4.07**	**31.1**	**30.7**	**1.94**	**1.78**	**1.83**	**1.74**	**0.52**	**0.50**	**0.52**	**0.61**
Active measures (1-5)	0.45	0.44	0.35	0.37	0.44	0.39	0.40	5.7	4.8	5.5	5.4	1.68	1.66	11.9	11.3	1.07	1.00	1.12	1.10	0.13	0.10	0.09	0.09
Passive measures (6 and 7)	0.43	0.44	0.50	0.75	0.63	0.62	0.56	9.0	8.4	7.3	7.4	2.71	2.42	19.2	19.4	0.87	0.78	0.71	0.64	0.39	0.40	0.43	0.52
For reference:																							
GDP (national currency, at current prices, 10^9)	26883	29698	32752	6893.9	8540.7	10071.9	11439.4					40.3	44.2			1896022	1974618	2057731	2117902	489289	504660	507552	497205
Labour force (thousands)								4048	3995	4011	4095			1449	1494								

a) Provisional data.
b) Fiscal years starting on April 1.

Table H. **Public expenditure and participant inflows* in labour market programmes in OECD countries** *(cont.)*

Programme categories	Korea								Luxembourg					Mexico								Netherlands							
	Public expenditure as a percentage of GDP				Participant inflows as a percentage of the labour force				Public expenditure as a percentage of GDP			Participant inflows as a percentage of the labour force		Public expenditure as a percentage of GDP				Participant inflows as a percentage of the labour force				Public expenditure as a percentage of GDP				Participant inflows as a percentage of the labour force			
	1995	1996	1997	1998	1995	1996	1997	1998	1995	1996	1997	1996	1997	1996	1997	1998	1999	1996	1997	1998	1999	1996	1997	1998	1999	1996	1997	1998	1999
1. Public employment services and administration	**0.03**	**0.03**	**0.04**	**0.07**					**0.03**	**0.03**	**0.03**			**–**	**–**	**–**	**–**					**0.39**	**0.39**	**0.39**	**0.38**				
2. Labour market training	**0.02**	**0.03**	**0.03**	**0.10**	**0.3**	**0.4**	**2.0**	**4.6**	**0.02**	**0.01**	**0.01**	**0.3**	**0.6**	**0.04**	**0.04**	**0.04**	**0.04**	**3.1**	**2.9**	**2.9**	**3.4**	**0.34**	**0.35**	**0.31**	**0.34**	**3.2**	**3.3**	**3.3**	**..**
a) Training for unemployed adults and those at risk	0.01	0.01	0.01	0.08	0.3	0.3	1.0	2.8	0.02	0.01	0.01	0.2	0.5	0.03	0.03	0.03	0.03	1.5	1.5	1.3	1.4	0.32	0.32	0.28	0.32	2.5	2.6	2.4	2.4
b) Training for employed adults	0.01	0.02	0.02	0.02	–	0.1	1.1	1.9	–	–	–	0.1	0.1	0.01	0.01	0.01	0.01	1.5	1.4	1.6	2.0	0.02	0.03	0.03	0.03	0.7	0.7	0.9	..
3. Youth measures	**0.02**	**0.01**	**0.04**	**0.04**	**0.1**	**0.1**	**0.1**	**0.1**	**0.07**	**0.14**	**0.14**	**..**	**..**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**0.10**	**0.10**	**0.04**	**0.04**	**0.9**	**0.9**	**0.6**	**..**
a) Measures for unemployed and disadvantaged youth	0.02	0.01	0.04	0.04	0.1	0.1	0.1	0.1	0.05	0.06	0.09	0.6	0.7	–	–	–	–	–	–	–	–	0.06	0.06	–	–	0.3	0.2	–	–
b) Support of apprenticeship and related forms of general youth training	–	–	–	–	–	–	–	–	0.02	0.07	0.05	..	..	–	–	–	–	–	–	–	–	0.04	0.04	0.04	0.04	0.6	0.6	0.6	..
4. Subsidised employment	**–**	**–**	**–**	**0.27**	**0.1**	**0.4**	**0.5**	**1.6**	**0.03**	**0.06**	**0.07**	**0.3**	**0.4**	**0.04**	**0.04**	**0.03**	**0.04**	**2.0**	**1.1**	**1.0**	**1.6**	**0.14**	**0.25**	**0.47**	**0.49**	**1.1**	**1.0**	**0.8**	**0.8**
a) Subsidies to regular employment in the private sector	–	–	–	0.02	0.1	0.4	0.5	0.6	0.03	0.05	0.07	0.3	0.4	–	–	–	–	–	–	–	–	0.02	0.06	0.08	0.07	0.8	0.7	0.5	0.4
b) Support of unemployed persons starting enterprises	–	–	–	0.04	–	–	–	0.1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
c) Direct job creation (public or non-profit)	–	–	–	0.21	–	–	–	1.0	–	–	–	–	–	0.04	0.04	0.03	0.04	2.0	1.1	1.0	1.6	0.12	0.19	0.39	0.43	0.2	0.2	0.3	0.4
5. Measures for the disabled	**–**	**–**	**0.01**	**0.01**	**0.1**	**0.1**	**0.2**	**0.1**	**0.05**	**0.04**	**0.04**	**..**	**..**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**0.52**	**0.51**	**0.53**	**0.54**	**0.2**	**0.2**	**0.5**	**0.8**
a) Vocational rehabilitation	–	–	0.01	0.01	0.1	0.1	0.1	0.1	–	–	–	..	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
b) Work for the disabled	–	–	0.01	–	0.1	0.1	0.1	–	0.04	0.04	0.04	..	..	–	–	–	–	–	–	–	–	0.52	0.51	0.53	0.54	0.2	0.2	0.5	0.8
6. Unemployment compensation	**–**	**–**	**0.02**	**0.19**	**–**	**..**	**..**	**..**	**0.36**	**0.41**	**0.42**	**..**	**6.2**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**3.98**	**3.53**	**2.97**	**2.81**	**10.5**	**9.2**	**7.6**	**6.9**
7. Early retirement for labour market reasons	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**0.24**	**0.26**	**0.25**	**0.2**	**0.2**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**
TOTAL	**0.07**	**0.08**	**0.15**	**0.68**	**0.6**	**..**	**..**	**..**	**0.80**	**0.95**	**0.97**	**..**	**..**	**0.08**	**0.08**	**0.07**	**0.08**	**5.0**	**4.1**	**4.0**	**5.0**	**5.49**	**5.13**	**4.72**	**4.61**	**15.9**	**14.5**	**12.8**	**..**
Active measures (1-5)	0.07	0.08	0.13	0.49	0.6	1.0	2.7	6.5	0.20	0.28	0.30	..	..	0.08	0.08	0.07	0.08	5.0	4.1	4.0	5.0	1.51	1.60	1.74	1.80	5.4	5.3	5.2	..
Passive measures (6 and 7)	–	–	0.02	0.19	–	..	..	..	0.60	0.67	0.67	..	6.4	–	–	–	–	–	–	–	–	3.98	3.53	2.97	2.81	10.5	9.2	7.6	6.9
For reference:																													
GDP (national currency, at current prices, 10^9)	377 350	418 479	453 276	449 509					509.7	525.4	563.8			2 525.6	3 174.2	3 785.5	4 549.2					694.3	734.9	776.2	812.8				
Labour force (thousands)					20 796	21 188	21 604	21 390				226	233					35 444	37 198	38 244	38 481					7 517	7 673	7 797	7 950

Table H. Public expenditure and participant inflows* in labour market programmes in OECD countries *(cont.)*

Programme categories	New Zealand [a]								Norway								Poland							
	Public expenditure as a percentage of GDP				Participant inflows as a percentage of the labour force				Public expenditure as a percentage of GDP				Participant inflows as a percentage of the labour force				Public expenditure as a percentage of GDP				Participant inflows as a percentage of the labour force			
	1995-96	1996-97	1997-98	1998-99	1995-96	1996-97	1997-98	1998-99	1996	1997	1998	1999	1996	1997	1998	1999	1995	1996	1997	1998	1995	1996	1997	1998
1. Public employment services and administration	**0.13**	**0.15**	**0.15**	**0.12**					**0.16**	**0.15**	**0.15**	**0.15**					**0.01**	**0.02**	**..**	**..**				
2. Labour market training	**0.32**	**0.31**	**0.32**	**0.24**	**5.5**	**5.2**	**..**	**3.3**	**0.18**	**0.13**	**0.10**	**0.05**	**2.1**	**1.6**	**1.3**	**1.0**	**0.02**	**0.02**	**0.02**	**0.02**	**0.5**	**0.5**	**0.8**	**0.8**
a) Training for unemployed adults and those at risk	0.32	0.31	0.32	0.24	5.5	5.2	..	3.3	0.18	0.13	0.10	0.05	2.1	1.6	1.3	1.0	0.02	0.02	0.02	0.02	0.5	0.5	0.8	0.8
b) Training for employed adults	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
3. Youth measures	**0.09**	**0.10**	**0.09**	**0.12**	**2.0**	**1.9**	**2.7**	**3.2**	**0.06**	**0.04**	**0.02**	**0.01**	**1.1**	**0.8**	**0.5**	**0.4**	**0.08**	**0.09**	**0.09**	**0.10**	**..**	**..**	**2.5**	**2.6**
a) Measures for unemployed and disadvantaged youth	0.02	0.02	0.02	0.07	0.2	0.2	0.3	0.5	0.06	0.04	0.02	0.01	1.1	0.8	0.5	0.4	0.02	0.03	0.04	0.04	..	..	0.8	0.8
b) Support of apprenticeship and related forms of general youth training	0.07	0.08	0.07	0.05	1.8	1.8	2.4	2.7	–	–	–	–	–	–	–	–	0.06	0.06	0.06	0.06	1.7	1.7	1.7	1.7
4. Subsidised employment	**0.14**	**0.14**	**0.15**	**0.09**	**2.2**	**2.2**	**..**	**1.3**	**0.16**	**0.07**	**0.04**	**0.02**	**1.0**	**0.6**	**0.3**	**0.2**	**0.21**	**0.15**	**0.18**	**..**	**2.0**	**1.5**	**1.9**	**1.5**
a) Subsidies to regular employment in the private sector	0.09	0.09	0.09	0.04	1.3	1.2	..	0.7	0.06	0.04	0.03	0.01	0.3	0.3	0.3	0.2	0.11	0.08	0.07	..	1.2	0.8	1.0	0.8
b) Support of unemployed persons starting enterprises	0.01	0.02	0.02	0.03	–	–	..	0.4	0.01	0.01	–	–	0.4	0.1	–	–	0.01	0.01	0.02	0.02	–	–	0.1	0.1
c) Direct job creation (public or non-profit)	0.03	0.04	0.04	0.03	0.9	0.9	..	0.2	0.09	0.02	–	–	0.2	0.1	–	–	0.08	0.06	0.09	0.06	0.7	0.6	0.9	0.6
5. Measures for the disabled	**0.06**	**0.06**	**0.03**	**0.05**	**0.7**	**..**	**0.7**	**0.6**	**0.61**	**0.57**	**0.59**	**0.59**	**..**	**..**	**1.8**	**1.8**	**0.10**	**0.20**	**0.18**	**–**	**0.1**	**0.1**	**..**	**..**
a) Vocational rehabilitation	0.03	0.03	0.01	0.03	0.7	..	0.4	0.4	0.37	0.36	0.38	0.41	..	..	1.2	1.3	–	0.02	–	–	–	–	..	..
b) Work for the disabled	0.03	0.03	0.01	0.02	–	–	0.3	0.2	0.24	0.22	0.20	0.19	..	..	0.6	0.6	0.10	0.18	0.18	–	0.1	0.1	..	..
6. Unemployment compensation	**1.16**	**1.19**	**1.48**	**1.57**	**12.1**	**12.2**	**13.3**	**13.7**	**0.90**	**0.69**	**0.49**	**0.47**	**..**	**..**	**4.0**	**4.7**	**1.75**	**1.66**	**1.11**	**0.56**	**7.6**	**7.8**	**5.6**	**3.6**
7. Early retirement for labour market reasons	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**0.05**	**0.05**	**–**	**–**	**0.3**	**0.3**	**–**	**–**
TOTAL	**1.90**	**1.95**	**2.22**	**2.20**	**22.5**	**..**	**..**	**22.1**	**2.07**	**1.66**	**1.39**	**1.29**	**..**	**..**	**7.9**	**8.2**	**2.21**	**2.20**	**..**	**..**	**..**	**..**	**..**	**..**
Active measures (1-5)	0.74	0.76	0.74	0.62	10.4	..	..	8.5	1.17	0.97	0.90	0.82	..	..	3.9	3.4	0.41	0.49	..	..	..	..	..	..
Passive measures (6 and 7)	1.16	1.19	1.48	1.57	12.1	12.2	13.3	13.7	0.90	0.69	0.49	0.47	..	..	4.0	4.7	1.80	1.71	1.11	0.56	7.9	8.1	5.6	3.6
For reference:																								
GDP (national currency, at current prices, 10^9)	92.4	96.0	98.1	99.5					1 016.6	1 089.0	1 107.1	1 189.3					306.3	385.4	469.4	551.1				
Labour force (thousands)					1 782	1 839	1 873	1 879					2 239	2 285	2 317	2 328					17 205	17 200	17 225	17 285

a) Fiscal years starting on July 1.

Table H. Public expenditure and participant inflows* in labour market programmes in OECD countries *(cont.)*

Programme categories	Portugal								Spain [a]								Sweden [d]							
	Public expenditure as a percentage of GDP				Participant inflows as a percentage of the labour force				Public expenditure as a percentage of GDP				Participant inflows as a percentage of the labour force				Public expenditure as a percentage of GDP				Participant inflows as a percentage of the labour force			
	1995	1996	1997	1998	1995	1996	1997	1998	1996	1997	1998	1999 [b]	1996	1997	1998	1999 [b]	1995-96	1997	1998	1999	1995-96	1997	1998	1999
1. Public employment services and administration	**0.10**	**0.10**	**0.11**	**0.11**					**0.08**	**0.08**	**0.07**	**0.06**					**0.26**	**0.29**	**0.28**	**0.28**				
2. Labour market training	**0.23**	**0.29**	**0.28**	**0.30**	**5.3**	**6.1**	**7.1**	**9.9**	**0.33**	**0.18**	**0.20**	**0.22**	**8.9**	**10.3**	**9.9**	**11.3**	**0.55**	**0.42**	**0.46**	**0.49**	**4.6**	**4.2**	**4.7**	**3.9**
a) Training for unemployed adults and those at risk	0.04	0.05	0.08	0.08	0.2	0.3	0.6	0.6	0.25	0.08	0.10	0.12	0.8	0.8	1.7	1.8	0.54	0.41	0.45	0.48	3.9	3.7	4.0	3.3
b) Training for employed adults	0.18	0.24	0.20	0.22	5.1	5.7	6.5	9.3	0.08	0.11	0.10	0.10	8.1	9.4	8.2	9.6	0.02	0.01	0.01	0.01	0.6	0.5	0.6	0.6
3. Youth measures	**0.33**	**0.31**	**..**	**..**	**2.0**	**2.6**	**..**	**..**	**0.08**	**0.06**	**0.07**	**0.06**	**0.1**	**1.9**	**1.6**	**1.6**	**0.02**	**0.02**	**0.03**	**0.03**	**0.7**	**0.7**	**0.9**	**0.7**
a) Measures for unemployed and disadvantaged youth	0.15	0.15	..	..	1.1	1.3	..	..	0.08	0.06	0.07	0.06	0.1	0.1	0.2	0.1	0.02	0.02	0.03	0.03	0.7	0.7	0.9	0.7
b) Support of apprenticeship and related forms of general youth training	0.18	0.16	0.15	0.18	0.9	1.4	1.4	1.9	–	–	–	–	–	1.8	1.5	1.5	–	–	–	–	–	–	–	–
4. Subsidised employment	**0.08**	**0.11**	**0.09**	**0.09**	**0.9**	**1.2**	**1.0**	**1.1**	**0.16**	**0.19**	**0.32**	**0.43**	**1.5**	**1.5**	**1.8**	**2.0**	**0.82**	**0.71**	**0.61**	**0.46**	**7.7**	**7.7**	**5.6**	**3.4**
a) Subsidies to regular employment in the private sector	0.03	0.07	0.01	0.01	0.1	0.4	–	0.1	0.08	0.11	0.21	0.31	–	–	–	–	0.32	0.19	0.14	0.18	3.6	3.2	2.3	2.8
b) Support of unemployed persons starting enterprises	0.03	0.01	0.02	0.03	0.2	0.1	0.1	0.1	0.03	0.03	0.03	0.04	0.2	0.2	0.3	0.3	0.07	0.08	0.08	0.07	0.4	0.5	0.4	0.4
c) Direct job creation (public or non-profit)	0.03	0.03	0.05	0.05	0.6	0.7	0.8	0.9	0.05	0.06	0.08	0.09	1.3	1.3	1.6	1.7	0.43	0.44	0.39	0.21	3.6	4.0	2.9	0.2
5. Measures for the disabled	**0.05**	**0.05**	**0.03**	**0.01**	**0.2**	**0.2**	**0.1**	**0.1**	**0.01**	**0.02**	**0.02**	**0.03**	**0.1**	**0.1**	**0.2**	**0.2**	**0.70**	**0.60**	**0.60**	**0.58**	**0.9**	**1.0**	**1.1**	**0.9**
a) Vocational rehabilitation	0.04	0.04	0.02	–	0.1	0.1	0.1	–	–	–	–	–	–	–	–	–	0.08	0.03	0.04	0.04	0.6	0.6	0.7	0.5
b) Work for the disabled	0.01	0.01	0.01	0.01	0.1	–	–	–	0.01	0.02	0.02	0.03	0.1	0.1	0.2	0.2	0.62	0.56	0.56	0.54	0.3	0.4	0.5	0.3
6. Unemployment compensation	**0.83**	**0.77**	**0.70**	**0.67**	**3.7**	**3.7**	**3.3**	**3.4**	**2.03** [c]	**1.80** [c]	**1.56** [c]	**1.41** [c]	**1.6** [c]	**1.6** [c]	**1.4** [c]	**1.5** [c]	**2.26**	**2.08**	**1.82**	**1.61**	**..**	**..**	**..**	**..**
7. Early retirement for labour market reasons	**0.09**	**0.12**	**0.14**	**0.16**	**0.3**	**0.4**	**0.5**	**0.6**	*c*	*c*	*c*	*c*	*c*	*c*	*c*	*c*	**–**	**0.04**	**0.12**	**0.09**	**–**	**..**	**..**	**..**
TOTAL	**1.70**	**1.74**	**..**	**..**	**12.3**	**14.2**	**..**	**..**	**2.69**	**2.33**	**2.24**	**2.22**	**12.3**	**15.4**	**14.9**	**16.6**	**4.62**	**4.15**	**3.92**	**3.54**	**..**	**..**	**..**	**..**
Active measures (1-5)	0.79	0.85	..	..	8.3	10.0	..	..	0.66	0.52	0.68	0.81	10.7	13.9	13.5	15.1	2.36	2.04	1.97	1.84	13.8	13.7	12.3	8.8
Passive measures (6 and 7)	0.91	0.89	0.85	0.83	4.0	4.1	3.8	3.9	2.03	1.80	1.56	1.41	1.6	1.6	1.4	1.5	2.26	2.11	1.94	1.70	..	..	..	..
For reference:																								
GDP (national currency, at current prices, 10^9)	16 102.4	17 098.6	18 276.4	19 692.9					77 113.4	81 782.0	86 968.5	93 068.3					2 517.4	1 813.1	1 890.2	1 972.1				
Labour force (thousands)					4 802	4 887	4 967	4 987					16 159	16 333	16 441	16 600					4 325	4 264	4 256	4 308

a) Excluding measures administered by the Autonomous Communities.
b) Provisional data.
c) Data for category 7 "Early retirement for labour market reasons" are included in category 6 "Unemployment compensation".
d) Before 1995-96, fiscal years starting on July 1. From 1997, calendar years. 1995-96 includes 18 months, from July 1 1995 to December 31 1996.

Table H. Public expenditure and participant inflows* in labour market programmes in OECD countries *(cont.)*

Programme categories	Switzerland				United Kingdom [a]						United States [b]							
	Public expenditure as a percentage of GDP				Public expenditure as a percentage of GDP			Participant inflows as a percentage of the labour force			Public expenditure as a percentage of GDP				Participant inflows as a percentage of the labour force			
	1995	1996	1997	1998	1995-96	1996-97	1997-98	1995-96	1996-97	1997-98	1995-96	1996-97	1997-98	1998-99	1995-96	1996-97	1997-98	1998-99
1. Public employment services and administration	**0.11**	**0.12**	**0.15**	**0.14**	**0.19**	**0.18**	**0.16**				**0.07**	**0.06**	**0.06**	**0.06**				
2. Labour market training	**0.09**	**0.06**	**0.23**	**0.19**	**0.10**	**0.09**	**0.07**	**1.0**	**1.0**	**0.9**	**0.04**	**0.04**	**0.04**	**0.04**	**0.7**	**0.8**	**0.8**	**0.6**
a) Training for unemployed adults and those at risk	0.08	0.06	0.23	0.19	0.09	0.08	0.06	0.9	0.9	0.8	0.04	0.04	0.04	0.04	0.7	0.8	0.8	0.6
b) Training for employed adults	–	–	–	–	0.01	0.01	0.01	–	–	–	–	–	–	–	–	–	–	–
3. Youth measures	**–**	**–**	**–**	**0.01**	**0.12**	**0.12**	**0.12**	**1.0**	**1.2**	**1.0**	**0.03**	**0.03**	**0.03**	**0.03**	**..**	**0.6**	**0.6**	**0.6**
a) Measures for unemployed and disadvantaged youth	–	–	–	0.01	–	–	–	–	–	–	0.03	0.03	0.03	0.03	0.4	0.5	0.5	0.5
b) Support of apprenticeship and related forms of general youth training	–	–	–	–	0.12	0.12	0.12	1.0	1.1	1.0	–	–	–	–	..	0.1	0.1	0.1
4. Subsidised employment	**0.09**	**0.16**	**0.23**	**0.21**	**0.02**	**–**	**–**	**0.1**	**–**	**–**	**0.01**	**0.01**	**0.01**	**0.01**	**..**	**..**	**..**	**..**
a) Subsidies to regular employment in the private sector	0.01	0.01	0.01	0.01	–	–	–	–	–	–	–	–	–	–	..	..	..	..
b) Support of unemployed persons starting enterprises	–	–	–	0.01	0.01	–	–	–	–	–	–	–	–	–	–	–	–	–
c) Direct job creation (public or non-profit)	0.08	0.16	0.22	0.19	0.01	–	–	0.1	–	–	–	0.01	0.01	0.01	0.1	0.1	0.1	0.1
5. Measures for the disabled	**0.20**	**0.20**	**0.15**	**0.15**	**0.03**	**0.02**	**0.02**	**0.2**	**0.2**	**0.2**	**0.04**	**0.03**	**0.04**	**0.04**	**..**	**..**	**..**	**..**
a) Vocational rehabilitation	0.15	0.15	0.15	0.15	–	–	–	0.1	0.1	0.1	0.04	0.03	0.04	0.04	..	..	..	..
b) Work for the disabled	0.05	0.05	–	–	0.02	0.02	0.02	0.1	0.1	0.1	–	–	–	–	–	–	–	–
6. Unemployment compensation	**1.15**	**1.27**	**1.41**	**1.07**	**1.24**	**1.03**	**0.82**	**..**	**..**	**..**	**0.33**	**0.26**	**0.25**	**0.25**	**..**	**..**	**..**	**..**
7. Early retirement for labour market reasons	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**
TOTAL	**1.63**	**1.82**	**2.16**	**1.77**	**1.70**	**1.44**	**1.19**	**..**	**..**	**..**	**0.52**	**0.42**	**0.42**	**0.42**	**..**	**..**	**..**	**..**
Active measures (1-5)	0.48	0.54	0.76	0.70	0.45	0.41	0.37	2.3	2.3	2.1	0.19	0.17	0.17	0.17	..	..	..	..
Passive measures (6 and 7)	1.15	1.27	1.41	1.07	1.24	1.03	0.82	..	..	..	0.33	0.26	0.25	0.25	..	..	..	..
For reference:																		
GDP (national currency, at current prices, 10^9)	363.5	364.8	370.5	382.3	706.4	747.6	793.6				7 700.2	8 182.8	8 636.3	9 116.1				
Labour force (thousands)								27 352	27 475	27 593					134 652	137 075	138 528	140 177

a) Excluding Northern Ireland. Fiscal years starting on April 1.
b) Fiscal years starting on October 1.
* Data on the annual inflows of participants into the programmes have not been collected for category 1 "Public employment services and administration". The totals shown in the table must be interpreted with caution.
Source: OECD database on labour market programmes. The data are compiled each year by the OECD on the basis of submissions from Member countries. The programmes have been classified into standardized categories and sub-categories. For their definitions, see OECD (1992), *Employment Outlook,* Paris.

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